

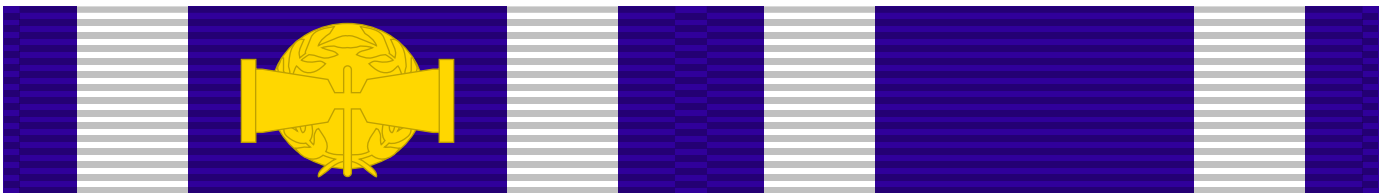
Psychological Warfare Mission Planning



Written By
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Quis Est Veritas

David Childers
Hondamendi Digitaleko Maisua
April 2023



Republic Vietnam Psychological Warfare
First Class

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Republic Vietnam Psychological Warfare
Second Class

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The dogma of truth comes in many forms, and thus it is vital for the organs of the state to ruthlessly seize control of the truth and be resilient in guarding it.

Ministerium für Staatssicherheit
Deutsche Demokratische Republik

Executive Summary

A comprehensive examination of the background, planning, and application of Psychological Warfare Operations (PSYOPS).

Cover Image

U.S. Army PSYOP Leaflet Drop

https://commons.wikimedia.org/wiki/File:UH-60_PSYOP_Leaflet_Drop,_near_Hawijah,_Iraq_06_March_2008.jpg

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What Is Psychological Warfare

Psychological warfare uses propaganda, psychological deception, and other means to influence the opinions, emotions, and behavior of enemy combatants or civilians. Psychological warfare aims to demoralize the enemy, reduce their will to fight, and make them more likely to surrender or defect.

Psychological warfare can be used in a variety of ways, including:

Propaganda: This is the use of information designed to promote a particular point of view or influence how people think or act. Propaganda can be used to spread false information, to create fear or hatred, or to promote a particular course of action.

Psychological Deception: This is the use of false information or misleading statements to deceive the enemy. This can be done through propaganda, through the use of double agents, or other means.

Emotional Manipulation: This is the use of psychological techniques to influence the enemy's emotions. This can be done through propaganda, torture, other forms of abuse, or other means.

Behavioral Manipulation: This is the use of psychological techniques to influence the enemy's behavior. This can be done through propaganda, through the use of economic sanctions, or other means.

The history of psychological warfare is long and complex, dating back to the ancient world. Some of the earliest examples of psychological warfare can be found in the writings of Sun Tzu, the Chinese military strategist who lived in the 5th century BC. In his book *The Art of War*, Sun Tzu wrote about demoralizing the enemy and using propaganda to sow discord and confusion.

Psychological warfare was also used extensively during the Middle Ages, as armies used propaganda to spread fear and uncertainty among their enemies. One of the most famous examples is the Black Death, which the Mongols spread in the 14th century. The Mongols spread rumors that the plague was divine punishment for their enemies' sins, which helped to demoralize the enemy and make them more likely to surrender.

Psychological warfare has become even more sophisticated and widespread in the modern era. During World War I, the Allies and the Central Powers used propaganda to influence public opinion and demoralize the enemy. One of the most famous examples is the Zimmermann Telegram, a secret message sent by Germany to Mexico in 1917. The telegram offered Mexico money and support if they would join the war on Germany's side. The telegram was intercepted by the British and leaked to the press, and it helped to turn American public opinion against Germany.

Psychological warfare has continued to be used in wars and conflicts throughout the 20th and 21st centuries. During the Cold War, both the United States and the Soviet Union used propaganda to try to undermine each other's governments and influence public opinion in their favor. In recent years, psychological warfare has been used in conflicts such as the Iraq War and the War in Afghanistan.

Today, psychological warfare is a significant part of modern warfare. It influences public opinion, demoralizes the enemy, and achieves strategic objectives.

Operational Planning

Operational planning is essential as it allows organizations to plan and execute desired missions.

Highlights of operational planning include:

Set And Achieve Goals: Operational plans provide a road map for achieving organizational goals. By setting specific, measurable, achievable, relevant, and time-bound objectives, operational plans can help organizations stay on track and progress toward their goals.

Use Resources Efficiently: Operational plans help organizations identify and allocate resources to maximize efficiency and minimize waste. By carefully considering the available resources and the tasks that need to be completed, operational plans can help organizations to get the most out of their resources.

Be Prepared For Change: Operational plans help organizations to anticipate and respond to change. By identifying potential risks and opportunities, operational plans can help organizations to develop strategies for dealing with change.

Improve Communication And Coordination: Operational plans help improve organizational communication and coordination. By clearly defining roles and responsibilities, operational plans help ensure everyone is working towards the same goals.

Make Better Decisions: Operational plans provide a framework for making better decisions. By considering the available information and resources, operational plans can help organizations make decisions that are more likely to be successful.

Make Sure The Goals Are Specific: What exactly is the intended result? The more specific the goal is, the easier it will be to progress towards it.

Make Sure The Goals Are Measurable: How will you know if the goal has been achieved? Having a way to measure the progress will help you stay on track and make adjustments as needed.

Make Sure The Goals Are Achievable: It is essential to make the goals achievable. Break the goals down into smaller, more manageable steps.

Make Sure The Goals Are Relevant: Are the goals aligned with the objectives and priorities?

Make Sure The Goals Are Time Bound: Set a deadline for achieving the desired goal.

Dividing the operational planning into smaller, more manageable steps is essential. This process allows the flow of the operation to be more efficiently executed and the progress of completion more readily tracked.

It is also necessary to be flexible and have the ability to adjust the goals as needed. Life exists as a series of changes, and operations are not different. Things do not always go according to plan, so it is essential to have the ability to adapt and change the goals if necessary or required.

A comprehensive objective for the Psychological Operation can be established once these factors have been considered.

Define The Objective

The first step in planning a Psychological Operation is to define the objective. What do you want to achieve with the operation? Do you want to demoralize the enemy? Promote disunity? Undermine the enemy's will to fight? Once you know your objective, you can develop a plan to achieve it.

The objective of a Psychological Operation is to influence the target audience's emotions, motives, objective reasoning, and, ultimately, behavior. The desired behavior can be to accept a point of view, take a specific action, or adopt a certain attitude.

WHO - WHAT - WHERE - WHEN - WHY

When defining the objective of a Psychological Operation, it is essential to consider the following factors:

The Target Audience: Who are you trying to influence?

The Desired Behavior: What do you want the target audience to do?

The Environment: What is the current situation in the target audience's environment?

The Resources Available: What resources do you have available to carry out the Psychological Operation?

A comprehensive objective for the Psychological Operation can be established once these factors have been considered.

The objective should be clear, measurable, achievable, relevant, and time-bound.

Here are some examples of specific objectives for Psychological Operations:

- Increase the target audience's trust in the government by 10% in the next month.
- Reduce the target audience's support for the insurgency by 5% in the next quarter.
- Encourage the target audience to evacuate a dangerous area within 24 hours.

Defining the objective of a Psychological Operation is an essential first step in the planning process. Establishing a clear objective expectation allows the mission participants to develop an operation that is more likely to achieve the desired results.

Identify The Target Audience

The next step is to identify the target audience. Who are you trying to influence with your psychological operation? Are you trying to reach the enemy's soldiers? The enemy's civilian population? The enemy's leadership? Once you have defined your target audience, you can start developing messages that appeal to them.

Identifying the target audience of a psychological operation is one of the most essential steps in the planning process. The target audience is the group of people that you are trying to influence with your psychological operation.

There are several factors to consider when identifying the target audience:

The Objective Of The Psychological Operation: The target audience will depend on the objective of the psychological operation. For example, if you are trying to demoralize the enemy, you will target the enemy's soldiers.

The Environment: The target audience will also depend on the environment where the psychological operation will occur. For example, if you are conducting a psychological operation in a foreign country, you will need to consider the culture and language of the target audience.

The Resources Available: The target audience will also depend on the available resources. For example, if you have limited resources, you may need to target a smaller group of people.

Once you have considered these factors, you can start to develop a profile of the target audience. The profile should include the following information:

Demographics: The demographic information of the target audience, such as age, gender, and location.

Psychographics: The psychographic information of the target audience, such as interests, attitudes, and beliefs.

Needs and wants: The needs and wants of the target audience.

Develop The Message

The third step is developing the messages you will use in your psychological operation. These messages should be tailored to your target audience and designed to achieve your objective. For example, if you are trying to demoralize the enemy, you might use messages highlighting the enemy's defeats or that make the enemy feel hopeless.

Here are some tips on how to develop a message for a psychological operation:

What Do You Want To Achieve: Indicate precisely the message's object. Define what actions should be taken.

Be Clear And Concise: The message should be easy to understand and remember.

Be Credible: The message should be believable and consistent with the target audience's values and beliefs.

Be Relevant: The message should be relevant to the target audience's needs and interests.

Be Timely: The message should be delivered when the target audience is receptive to it.

Be Consistent: The message should be consistent with other messages that the target audience has been exposed to.

Be Creative: The message should be original and attention-grabbing.

Be Measurable: The message should be designed to achieve a specific objective.

Here are some examples of messages that have been used in psychological operations:

"Freedom is contagious." The United States used this message during the Cold War to encourage people in communist countries to overthrow their governments.

"The enemy is weak and will soon be defeated." During World War II, the Allies used this message to boost morale and encourage people to keep fighting.

"We are here to help you." This message has been used by the United Nations and other humanitarian organizations to provide aid to people in need.

Create The Perfect Message

Create a storyboard for designing and creating the content presentation.

Define the order for the presentation of the content.

Present the information in an easy to understand and logical sequence.

Define which content segments (text, graphic, audio, video) which will be paired with other elements (phrases, music, background, lyrics).

Ensure that all content segments complement each other and not overshadow the other elements.

Examples Of This Include: Background music does not render voiceover audio unintelligible or background imagery does not detract attention from the primary visual focus.

Ensure that content transitions smoothly to ensure a quality presentation that does not jar or detract from the overall quality.

Ensure that all selected content is culturally and ethnically acceptable for the target audience.

Ensure all text, visual and audio content is grammatically correct for the target audience.

Emphasize these essential elements in the presentation:

- Topic background information.
- Specific facts and statistics.
- Why the audience should care.
- What action the audience can take.
- The impact of the issue on relevant communities.
- References to issues the audience can relate with.
- Emphasize the importance of spreading the word.
- Remember that message brevity and information quality are vital for achieving success.

Use compelling methods to engage your audience:

- Slogans.
- Imagery.
- Stories.
- Skilled media editing.

Psychological Warfare Campaign Information Worksheet

Accurate, timely, and comprehensive information will allow development and planning to assess the target audience comprehensively. This information can also be used to understand the relevant underlying issues and options for achieving success.

The content delivery method can be determined once the target audience has been identified and designated. The choice of content delivery method will directly affect the resource requirements for the creation of the content.

A matrix diagram of information can be created using the supplied information and can be used to assist in the planning of content creation and methods for content delivery. This method will allow proper resource and personnel allocation to achieve the maximum success rate of the planned operation.

A		X					
B				X			
C		X					
		D		E		F	

* * * **Special Notes** * * *

Who Or What Is Being Affected

Where Is This Event Taking Place

When Is This Event Happening

Why Is This Event Happening

*** * * Special Notes * * ***

What Are Results Of This Event Happening

What Can Prevent This Event From Happening Again

What Steps Need To Be Taken To Prevent This Event From Happening

Describe Area Where Event Is Happening (Primitive - Rural - Village - City)

Media Available To Resident (Television - Radio - Newspaper)

Utility Accessibility To Resident (Power - Water - Telephone - Internet)

Total Population Number

*** * * Special Notes * * ***

Percentage Of Densely Populated

Percentage Of Sparsely Populated

Percentage Of Transient Population

Percentage Of Permanent Population

Population Age Breakdown

Population Income Breakdown

Population Gender Breakdown

*** * * Special Notes * * ***

Population Education Breakdown

Population Percentage Not Affected By Event

Population Percentage Directly Affected By Event

Population Percentage Partially Affected By Event

Majority Ethnic Affiliation

Minority Ethnic Affiliation

Majority Language Spoken

*** * * Special Notes * * ***

Minority Language Spoken

Majority Political Affiliation

Minority Political Affiliation

Majority Religious Affiliation

Minority Religious Affiliation

Method Of Delivery

The fourth step is to choose the delivery method you will use to deliver your messages. Will you use radio? Television? Newspapers? Social media? The channels that you choose will depend on your target audience and on the resources that you have available.

The method of delivery for a Psychological Operation (PSYOP) should be chosen based on the following factors:

The Target Audience: The delivery method should be appropriate for the target audience. For example, if the target audience is young people, you might use social media or video games.

The Objective: The delivery method should be designed to achieve the objective of the Psychological Operation. For example, if the objective is to demoralize the enemy, you might use propaganda or deception.

The Environment: The delivery method should be appropriate for the environment where the Psychological Operation will occur. For example, if the Psychological Operation will take place in a war zone, you might use leaflets or loudspeakers.

Mission Resource Availability: The delivery method should be feasible with the available resources on hand. For example, it may be necessary to use leaflets or radio broadcasts if additional resources are not available.

Target Audience Resource Availability: The delivery method should be feasible with the available resources of the target audience. For example, does the target audience have unfiltered access to internet content, or does the target audience have equipment capable of receiving long distant radio or television broadcasts?

There are several different methods of delivering Psychological Operations, including:

Leaflets: Leaflets are a low-cost and effective way to deliver messages to a large audience. They can be dropped from airplanes or distributed by hand.

Radio Broadcasts: Radio broadcasts are an excellent way to reach a large audience, especially in rural areas. They can deliver messages, provide information, or create a sense of urgency.

Television Broadcasts: Television broadcasts are an excellent way to reach a large audience, especially in urban areas. They can deliver messages, provide information, or create a sense of urgency.

Internet: The Internet is an excellent way to reach a large audience, especially young people. It can deliver messages, provide information, or create a sense of urgency.

Social media: Social media is an excellent way to reach a large audience, especially young people. It can deliver messages, provide information, or create a sense of urgency.

Public events: Public events are an excellent way to reach a large audience in person. They can deliver messages, provide information, or create a sense of urgency.

Personnel: Personnel can deliver messages in person or over the phone. They can also be used to gather information about the target audience.

It is essential to choose the method of delivery that is most likely to achieve the required objectives successfully.

Implementation

The fifth step is to implement the operation. This process involves delivering the messages to the desired target audience using the specified methods. It also consists of monitoring the operational progress and adjusting as needed.

Immediately prior to the implementation phase, a thorough operational assessment review should be made to ensure that all required resources and personnel are in place and ready to deploy. This assessment will allow the mission to achieve the planned objectives. Key operational personnel should also be given an expected timeline for mission execution.

Reserve resources for the mission should be accounted for and prepared for the operational mission. Designated reserve personnel should also be included in the operational assessment review, briefed, and prepared for final mission execution. The reserve personnel should also be notified of an expected timeline for the imminent mission execution, depending on the complexity, scope, and operational mission requirements.

The operational implementation process should be thoroughly specified to alleviate any possibilities of deviating from the intended final results. All operational participants should review the operational plan prior to execution. This review will allow all participants to understand all necessary elements, process steps, and resource requirements and ensure clarity and interpretation of the intended results. All involved organizations should also have their specific roles defined to ensure the proper execution of all plan elements.

All information related to all individual campaign research, planning, operational implementation, post-operational review, and message reach assessments should be combined and cataloged for later peer review/lessons learned assessments. Such information can also be a valuable resource for future operational campaign research and implementation.

Evaluate The Results

The sixth and final step is to evaluate the results of the operation. Did you achieve your objective? If not, why not? What can you learn from this experience for future psychological operations?

There are several different ways to evaluate a Psychological Operation (PSYOP). One common approach is to use a mix of quantitative and qualitative methods. Quantitative methods can measure the reach and impact of the Psychological Operation, while qualitative methods can be used to understand the target audience's reaction to the Psychological Operation.

Some common quantitative methods used to evaluate Psychological Operations include:

Surveys: Surveys can measure the target audience's awareness of the Psychological Operation, their understanding of the message, and their attitude toward it.

Focus Groups: Focus groups can be used to understand better the target audience's reaction to the Psychological Operation. Focus groups can be used to identify the key messages that resonated with the target audience, as well as the key messages that were not effective.

Content Analysis: Content analysis can be used to analyze the media coverage of the Psychological Operation. Content analysis can be used to identify the key themes covered in the media and the tone of the coverage.

Some common qualitative methods used to evaluate Psychological Operations include:

Interviews: Interviews can be used to understand better the target audience's reaction to the Psychological Operation. Interviews can be used to identify the key messages that resonated with the target audience, as well as the key messages that were not effective.

Observation: Observation can be used to observe the target audience's behavior in response to the Psychological Operation. These can be used to identify the critical behavioral changes caused by the Psychological Operation.

Case Studies: Case studies can be used to study the impact of the Psychological Operation on a specific group of people or a specific event. Case studies can be used to identify the key factors that contributed to the success or failure of the Psychological Operation.

The specific methods used to evaluate a Psychological Operation will depend on the specific objectives of the Psychological Operation, the target audience, and the resources available.

Psychological Warfare Campaign Content Review

How well do you remember this message? **(Check only one.)**

- ☐ Don't remember at all
- ☐ Remember intended audience but not the cause of the problem or way to fix problem.
- ☐ Remember intended audience and cause of the problem but not way to fix problem.
- ☐ Remember everything.

If you were describing this message to a friend, would you say this message is? **(Check all that apply.)**

- | | | | |
|--|--|--------------------------------------|---------------------------------------|
| <input type="checkbox"/> Active | <input type="checkbox"/> Emotional | <input type="checkbox"/> Informative | <input type="checkbox"/> Pleasant |
| <input type="checkbox"/> Attention-getting | <input type="checkbox"/> Energetic | <input type="checkbox"/> Irritating | <input type="checkbox"/> Satisfying |
| <input type="checkbox"/> Boring | <input type="checkbox"/> Genuine/sincere | <input type="checkbox"/> Memorable | <input type="checkbox"/> Strong |
| <input type="checkbox"/> Cheerful | <input type="checkbox"/> Honest | <input type="checkbox"/> Natural | <input type="checkbox"/> Unique |
| <input type="checkbox"/> Creative | <input type="checkbox"/> Humorous | <input type="checkbox"/> Offensive | <input type="checkbox"/> Warm-hearted |

Based on the information and implications of this message, rate this presentation. **(Check all that apply.)**

	Strongly Agree	Somewhat Agree	Neither	Somewhat Disagree	Strongly Disagree
The message is understandable.	()	()	()	()	()
The message is believable	()	()	()	()	()
The message is relevant to me.	()	()	()	()	()
The <u>problems</u> described are believable to me.	()	()	()	()	()
The <u>solutions</u> described are believable to me.	()	()	()	()	()
The <u>benefits</u> described are believable to me.	()	()	()	()	()
I would consider doing what is asked based on information presented.	()	()	()	()	()
	xxxx	xxxx	xxxx	xxxx	xxxx
This presentation is better than others that discuss this same problem.	()	()	()	()	()

Continued On Next Page

Based on the information and implications of this message, rate this presentation. **(Check all that apply.)**

	Strongly Agree	Somewhat Agree	Neither	Somewhat Disagree	Strongly Disagree
I consider all points of view.	()	()	()	()	()
I regularly discuss local events.	()	()	()	()	()
I regularly discuss global events.	()	()	()	()	()
I regularly watch, listen, or read about local events.	()	()	()	()	()
I regularly watch, listen, or read about global events.	()	()	()	()	()
I do not allow religious status to alter my viewpoint.	()	()	()	()	()
I do not allow political status to alter my viewpoint.	()	()	()	()	()
I do not allow economic status to alter my viewpoint.	()	()	()	()	()

Do you have any suggestions or recommendations?

(Mark all that apply and be specific in your suggestions and or recommendations.)

Textual

Add Additional Content ()
 Remove Content ()
 Change Content ()

Video

Add Additional Content ()
 Remove Content ()
 Change Content ()

Audio

Add Additional Content ()
 Remove Content ()
 Change Content ()

Background

Add Additional Content ()
 Remove Content ()
 Change Content ()

Color

Add Additional Content ()
 Remove Content ()
 Change Content ()

Other

Add Additional Content ()
 Remove Content ()
 Change Content ()

Please indicate which content you are critiquing.

Continued On Next Page

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Continued On Next Page



General Methods To Enhance The Effectiveness Of Campaigns

Targeting: The target audience must be carefully selected and understood. Messages must be tailored to the target audience's needs, interests, and values.

Credibility: The final product must be credible and believable. This can be achieved through credible sources, such as experts or celebrities.

Consistency: The delivery must be consistent over time. This means that the messages must be repeated and reinforced.

Relevance: The final product must be relevant to the target audience's needs and interests. The messages must address the target audience's concerns and offer solutions.

Timing: The delivery must be timed correctly. The messages must be delivered when the target audience is most likely receptive to them.

Flexibility: The final content creation must be flexible enough to adapt to changing circumstances. The messages must be able to be adjusted as needed.

Evaluation: The final content must be evaluated to determine its effectiveness. This will help to identify areas where it can be improved.

Testing: The final content should be with a small group of people to get their feedback. This will help you identify any areas needing improvement before distributing the content.

Clear And Concise: Get the point across quickly and concisely. People have short attention spans. Use simple language and avoid jargon or technical terms.

Make The Message Persuasive: The message should be compelling. You want to convince the audience to take action.

Make It Relevant: Your final product should be relevant to the people you are trying to reach.

Make It Emotional: People are more likely to remember and act on messages that evoke an emotional response. Use powerful images and stories to connect with your audience on a personal level.

Make It Memorable: Your final product should be memorable so that people will think about it long after they have experienced it. Use catchy slogans, music, or visuals to help the message stick in the people's minds.

Make It Actionable: Tell people what you want them to do after they experience your message. Make sure your call to action is clear and easy to understand.

Make It Shareable: The final content should be shareable so that people can help spread the message. Use social media, email, and other channels to encourage people to share the message with their friends and family.

Make It Trackable: You should track the results of your message so you can see how well it is performing. This will help you identify what is working and what is not so that you can make necessary adjustments.

Specific Methods To Enhance The Effectiveness Of A **PRINT** Campaigns

Use High Quality Images: Images are one of the most critical elements of print. Make sure your images are high-quality and relevant to your message.

Use A Strong Headline: The headline is the first thing people will see, so make sure it is attention-grabbing and relevant to the message.

Use White Space Effectively: White space is the empty space around text and images. It can make the printed material look more visually appealing and draw attention to your message.

Specific Methods To Enhance The Effectiveness Of **VIDEO** Campaigns

Keep It Short And Sweet: People have short attention spans, so getting the message across quickly and concisely is essential. Aim for content that is 30 seconds or less.

Use A Catchy Hook: The first few seconds of the video are crucial for grabbing someone's attention. Use a strong hook that will entice people to want to watch more.

Professional Video Production: A well produced video will look more polished and professional, which will make people more likely to take your message seriously.

Use Eye Catching Visuals: People are more likely to watch a video with interesting and attention-grabbing visuals. Use high-quality images and videos that will capture people's attention.

Tell A Story: People are more likely to remember and connect with a video if it tells a story. Use your video to tell a story about the cause or concern that will resonate with the target audience.

Specific Methods To Enhance The Effectiveness Of **AUDIO** Campaigns

Use High Quality Audio: The quality of your audio is essential, as people are more likely to listen to an ad if it sounds good. Make sure the audio is clear and free of background noise.

Keep It Short And Sweet: People have short attention spans, so it is essential to get the message across quickly and concisely. Aim for content that is 30 seconds or less.

Use A Catchy Hook: The first few seconds of the audio are crucial for grabbing someone's attention. Use a strong hook that will entice people to want to listen more.

Use Clear And Concise Language: Avoid using jargon or technical terms that the target audience might not understand.

Specific Methods To Enhance The Effectiveness Of **COLORS**

Choose Colors That Evoke The Right Emotions: Different colors evoke different emotions in people. For example, red is often associated with passion, excitement, and danger, while blue is associated with calmness, trust, and security. Choose colors that evoke the emotions you want to associate with the message.

Use Color Contrast: Color contrast is the difference in brightness, hue, and saturation between two colors. Using color contrast can make the message more visually appealing and easier to read.

Specific Methods To Enhance The Effectiveness **IMAGES**

Use High Quality Images: The quality of images is essential, as people are more likely to be engaged with high-quality images. Ensure the images are clear, sharp, and well-lit.

Use Images That Capture Attention: Images used should be eye-catching and attention-grabbing. Use bright colors, interesting patterns, and bold fonts to make the images stand out.

Use Images That Convey The Message: The images should convey a message clearly and concisely. Ensure the chosen images are relevant to the cause and support the desired message.

Use Images Consistent With The Message: The images should be consistent with the message's overall look and feel. Ensure the images chosen to reflect desired outlook and perception.

Specific Methods To Enhance The Effectiveness Of **WRITING**

Use Strong Headlines: Headlines are the first thing people will see, so they need to be attention-grabbing and relevant to the message.

Use Clear And Concise Language: People have short attention spans, so you want to get the message across quickly and concisely. Avoid using jargon or technical terms that the target audience might not understand.

Use Active Voice: Active voice is more engaging than passive voice.

Use Personal Pronouns: Personal pronouns like "you" and "your" help to create a connection with the reader.

Use Storytelling: Stories are a great way to connect with the audience and make the message more memorable.

Use Social Proof: Social proof is a psychological phenomenon stating that people are more likely to do something if they see others doing it.

Use Scarcity: Scarcity is a psychological phenomenon that states that people are more likely to want something if they think it is scarce.

Use A Call To Action: A call to action is a statement that tells the reader what the desired action is. Make sure your call to action is clear and easy to understand.

Software Tools And Applications

Ubuntu Studio is a derivative of the Ubuntu Linux distribution and is created for general multimedia production work. This Linux Operating System has many pre-configured software applications ready for multimedia content creation to support mission operations.

<https://ubuntustudio.org/>

Official Ubuntu Documentation - HTML and PDF

<https://help.ubuntu.com/>

Audio - Record, mix, master, or live process audio.

- JACK
- Ardour
- Carla
- Sequencers and Synthesizers
- Virtual Guitar Amps
- Audio Programming

Graphics - Edit, design, and model images.

- Blender
- Inkscape
- GIMP
- PikoPixel

Photography - Edit, process, and organize photographs.

- Darktable
- Shotwell

Video - Editing, 3D modeling, animation, and composite images.

- Openshot
- FFMPEG

Publishing - Create, edit, and publish books.

- Calibre
- Scribus
- LibreOffice

Extensions are software plugins that can be installed on top of the standard LibreOffice download and add some functionality to the suite, either to one particular application (e.g., Writer, Calc, or Impress) or to the whole suite.

<https://extensions.libreoffice.org/>

LanguageTool is a style and grammar proofreading extension for English, French, German, Polish, Dutch, Romanian, and many other languages.

<https://extensions.libreoffice.org/en/extensions/show/languagetool>

Open Font License (OFL) free software license fonts.

<https://fontesk.com/license/ofl-gpl/>

<https://fonts.google.com/>

Additional Resources

Psychological Operations
FM 3-05.30 (2005)
United States Army
(Restricted)

Psychological Operations Specialist
Soldier's Manual and Trainer's Guide
- MOS 37F
STP 33-37F14-SM-TG
United States Army
(Restricted)

Exploring the Utility of Memes for U.S.
Government Influence Campaigns
Center for Naval Analyses
[https://apps.dtic.mil/sti/citations/
AD1052398](https://apps.dtic.mil/sti/citations/AD1052398)

Tutorial: Military Memetics
Robotic Technology Inc.
[https://roboticstechnologyinc.com/
index.php/military-memetics](https://roboticstechnologyinc.com/index.php/military-memetics)

Memetics -- A Growth Industry in US
Military Operations
United States Marine Corps University
[https://apps.dtic.mil/sti/citations/
ADA507172](https://apps.dtic.mil/sti/citations/ADA507172)

Memetics: Persuasive Political Warfare
Centre for Information and Media Warfare
Studies (CMIWS)
[https://www.researchgate.net/publication/
332471418_Memes_Persuasive_Political_W
arfare](https://www.researchgate.net/publication/332471418_Memes_Persuasive_Political_Warfare)

Lessons Learned from the "Viral Caliphate":
Viral Effect as a New PSYOPS Tool?
[https://www.inss.org.il/publication/lessons-
learned-viral-caliphate-viral-effect-new-
psyops-tool/](https://www.inss.org.il/publication/lessons-learned-viral-caliphate-viral-effect-new-psyops-tool/)

Psychological Operations Tactics, Techniques,
and Procedures
FM 3-05.301 (2003)
United States Army
(Restricted)

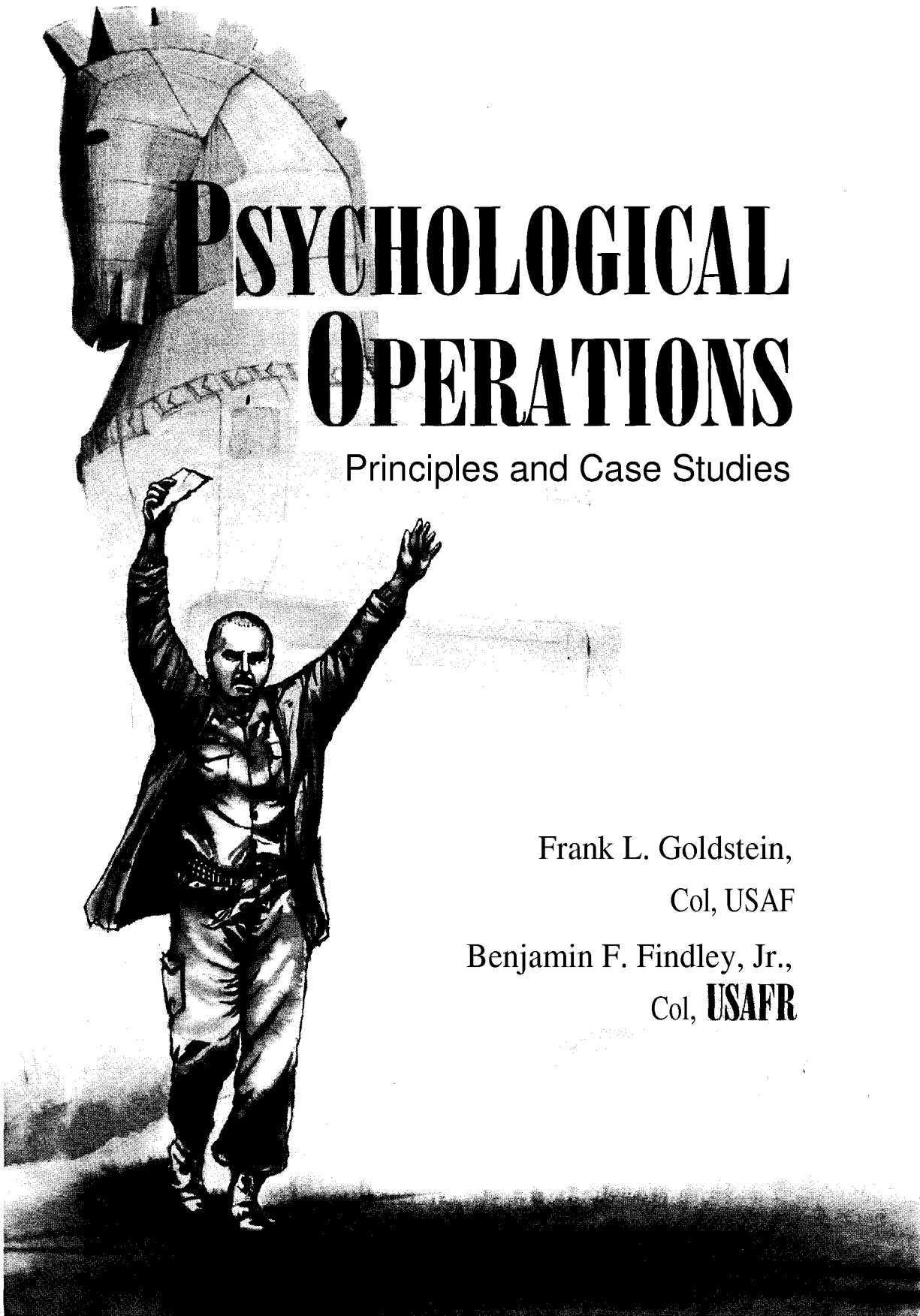
Conducting Psychological Operations in
Sophisticated Media Environments
Major Stephen C. Larsen
U.S. Army Command and General Staff
College
[https://cgsc.contentdm.oclc.org/digital/
collection/p4013coll2/id/634/rec/1](https://cgsc.contentdm.oclc.org/digital/collection/p4013coll2/id/634/rec/1)

The Art and Science of Psychological
Operations:
Case Studies of Military Application,
Volume One DA-PAM 525 7-1
United States Army
https://archive.org/details/DTIC_ADA028847

The Art and Science of Psychological
Operations:
Case Studies of Military Application,
Volume Two DA-PAM 525 7-2
United States Army
https://archive.org/details/DTIC_ADA030140

Psychological Warfare
Paul M. A. Linebarger
<https://www.gutenberg.org/ebooks/48612>

A Syllabus Of Psychological Warfare
Propaganda Branch
Intelligence Division
War Department, General Staff
[https://collections.nlm.nih.gov/catalog/
nlm:nlmuid-01130770R-bk](https://collections.nlm.nih.gov/catalog/nlm:nlmuid-01130770R-bk)



PSYCHOLOGICAL OPERATIONS

Principles and Case Studies

Frank L. Goldstein,

Col, USAF

Benjamin F. Findley, Jr.,

Col, **USAFR**

Psychological Operations

Principles and Case Studies

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Foreword

From a military commander's perspective, the role of psychological operations (PSYOP) in the successful planning and execution of modern military operations is absolutely essential. The recent successes of PSYOP in Panama and the Persian Gulf amply demonstrate its importance in achieving our military objectives and national goals. PSYOP is an integral part of the United States Special Operations Command mission. Today, the military faces a dynamic and unpredictable world. PSYOP will remain a valuable instrument in our overall defense posture and will be a key asset in the fulfillment of US national policy.

Psychological Operations: Principles and Case Studies serves as a fundamental guide to PSYOP philosophy, concepts, principles, issues, and thought for both those new to, and those experienced in, the PSYOP field and PSYOP applications. This book clarifies the value of PSYOP as a cost-effective weapon and incorporates it as a psychological instrument of US military and political power, especially given our present budgetary constraints. The authors contribute to the understanding of psychological operations by presenting diverse articles that portray the value of the planned use of human actions to influence perceptions, public opinion, attitudes, and behaviors so that PSYOP victories can be achieved in war and in peace. The four sections classify articles with related themes into a common category.

Part I offers an overview of the nature and scope of PSYOP and serves as an introduction to the overall nature, historical background, concepts, and principles of psychological operations. These independent articles, which reflect the broad scope of historical development and thought about PSYOP, are intended to be a foundation for understanding the basic nature and key elements of PSYOP.

Part II follows with issues and influences related to developing effective US strategy, doctrine, and structure for conducting psychological and political warfare. The authors focus on those

psychological issues and roles that have been recurrent as our national policy, objectives, and strategy have been formulated and implemented. They explain historical and contemporary elements of the national policy process and the framework within which national PSYOP policy is formulated, administered, and implemented.

Part III deals with the objectives and activities of strategic, tactical, operational, and other types of PSYOP. These authors emphasize that all forms of PSYOP should primarily support the attainment of national policy and objectives. They conclude that the key to all US PSYOP is credibility of the message as defined by the influencing or changing of perceptions, attitudes, and behaviors through utilization of words and actions.

In Part IV the authors use case studies to present and clarify PSYOP goals, roles, and methods. One of the editors of this book condenses and analyzes (1) US and Vietcong PSYOP in the Vietnam War and (2) the Iraqi propaganda network. The other writers examine tactical and consolidation PSYOP activities in Operations *Just Cause* and Promote *Liberty* in Panama. They address (1) our national antidrug policy and its relationship to the role of military psychological operations and (2) the importance of the political-psychological dimensions of conflict and insurgency.

By addressing the breadth and depth of psychological operations thought, this collection of PSYOP articles serves as a valuable knowledge base for those who read it. A major purpose of the book is to pull together those previously published articles under one cover in one volume. *Psychological Operations* should stimulate your thinking and reinforce the value of PSYOP.

A handwritten signature in black ink that reads "Frank L. Goldstein". The script is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Frank L. Goldstein, PhD
Col, USAF
Dean of Research
Air Command and Staff College

Preface

This book explores the breadth and depth of fundamental PSYOP roles, principles, and methods. Many of these readings were previously published in professional journals. *Psychological Operations: Principles and Case Studies* is not a collective work and does not attempt to be. Each article is an independent effort and together they represent a cross section of what the "best and brightest" feel is key to both offensive and defensive psychological operations. What the 24 contributors share, besides their own particular expertise in PSYOP, is a recognition that a clear understanding of PSYOP is important to our national defense and to the way PSYOP should be conducted in the future.

Understanding PSYOP is not a simple task. Historically, both military and civilian discussions of PSYOP throughout the leadership spectrum have regularly substituted cliches, myths, and untruths for hard evidence or analysis of what PSYOP is and how it can serve our national objectives. PSYOP policy and doctrine have not received their deserved attention while hostile PSYOP efforts against the US are misunderstood and often ineffectively countered.

Although the Soviet threat has ended, three Soviet PSYOP articles are deliberately included because the classic Soviet PSYOP model has been taught and integrated into third world countries all over the world and will continue to be an influence in the international arena.

In 1984, a major effort began to revitalize the state of psychological operations in the United States. That effort was spearheaded in 1985 by a document known as the DOD PSYOP Master Plan. The plan evolved over several years and revision began again in 1990, just prior to the Persian Gulf War. The plan directed the overall revitalization of US psychological operations; it directed that PSYOP be fully integrated into planning and military operations; it directed that PSYOP be considered for immediate and effective use in crises and hostilities; and it directed the use of overt PSYOP programs in

peacetime. The plan presented an across-the-board baseline of problem areas and laid out specific remedial actions for fundamental improvements in our capability to employ PSYOP in peace, crisis, and war.

This volume is also an ongoing effort. While the collected articles will expand both the knowledge and understanding of psychological operations past and present, many of these authors would not have written their articles without the initial revitalization-and Air University Press may not have published them had they been written. The essays present critical PSYOP issues, problems, activities, and techniques in the book's four sections, which classify articles with related themes into a common category.

We must underscore the fact that these essays are independent of each other. Many were written and published decades ago, and most were originally published in differing formats with differing style requirements. Those that were written in the present tense years ago have been edited to reflect the past tense. We have retained the original flavor of each essay, but some style changes have been made to conform more closely to current Air University Press style. Some essays have notes, some don't; some have bibliographies, some don't; some have appendixes, some don't. We have retained the original styles, with this exception: Notes number 1 that appeared at the titles of some original essays have been removed and the references thereto have been moved to the bottom of the first page.

We are grateful to the 24 contributing authors and regret that we could not include biographical information on all of them; unfortunately, we were unable to obtain biographical data on Preston S. Abbott. We thank J. Schmier, B. Karabaich, and C. Williamson, who provided assistance to MSgt Blair and Col Goldstein, and we are especially grateful to Maj Thomas P. Sands, Florida ANG, who provided editorial assistance to the entire project in its early stages. We also extend our gratitude to those who provided outstanding administrative and technical support. In particular, Majors Stephen Asher, USAF, and James V. Keifer, USAF, Retired; Ms Victoria L. Blessing and Ms Eva E. Hensley; SFC Roger D. Crocker, USAR; SSgt Sherri Adler, USAFR; Sgt Manuel D. Gonzalez, USAFR; and A1C Jayme L. Laurent, Florida ANG.

PART I

Nature and Scope of
Psychological Operations
(PSYOP)

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Introduction

The scope of military PSYOP during World War II, the Korean War, and in much of the 1960s was primarily limited to combat propaganda and psychological warfare (psywar). During those times, it was accepted as a specialized tactical application and as a subordinate operation. The experiences of these conflicts, especially the Vietnam War, convinced some American military and political leaders that the psychological dimension of national power and conflict encompasses diverse elements 'and many activities-nonmilitary as well as military-in both peacetime and war in support of our national policy and objectives. Its scope can vary from the tactical battlefield to the operational theater to the strategic levels of conflict to national political and military goals.

Part I serves as an introduction to the overall nature, historical background, and concepts of PSYOP, and to some principles that can be used for training in the field of psychological operations. The independent articles in this section reflect the broad range of historical development and thought about PSYOP and are intended to be a foundation for understanding the basic nature and key elements of PSYOP.

Col Frank L. Goldstein, USAF, and Col Daniel W. Jacobowitz, USAF, Retired, provide a general introduction to and a commonly accepted definition of PSYOP. The authors explore the three types of PSYOP and give several examples of strategic, tactical, operational, and consolidation PSYOP. They divide propaganda into white, gray, and black classes, and present the various resources of psychological operations. The six major military objectives of PSYOP are condensed for the reader.

The late Col Fred W. Walker, USAF, Retired, presents strategic concepts for military PSYOP to enhance the overall understanding of the PSYOP dimension and its challenges. His emphasis is on the public's understanding that the US government does not engage in public disinformation activities in pursuit of national policy. He addresses strategic rather than tactical battlefield and operational PSYOP. He focuses on the concept that "truth is the best propaganda" and analyzes

efforts to counter Soviet global disinformation. Walker died before the dissolution of the Soviet Union; however, the article represents a clear and precise use of Soviet PSYOP between 1917 and 1990.

Col Alfred H. Paddock, Jr., USAF, Retired, provides a brief perspective on the evolution of military PSYOP. He addresses the 1985 Department of Defense (DOD) PSYOP Master Plan as the major framework for rebuilding worldwide military PSYOP capabilities in support of national objectives in peace and crisis and at all levels of conflict. Colonel Paddock presents several essential themes for remedial actions-developing comprehensive joint PSYOP doctrine, developing an adequate number of #PSYOP planners on joint staffs, and improving commanders' understanding of PSYOP capabilities and missions.

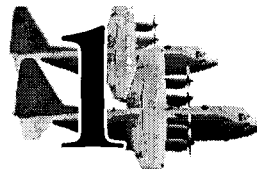
Col Benjamin F. Findley, Jr., USAFR, analyzes the many similarities between civilian business marketing and military PSYOP. His premise is that, just as marketing and promotion processes in business have dedicated necessary resources and utilized persuasive strategies and tactics to successfully influence perceptions, motivations, attitudes, and opinions to achieve results, so military PSYOP can and should employ similar approaches to market our country. Colonel Findley focuses on basic persuasion and marketing principles and on business lessons learned.

Psychological Operations

An Introduction

Col Frank L. Goldstein, USAF

Col Daniel W. Jacobowitz, USAF, Retired



If your opponent is of choleric temper, try to irritate him. If he is arrogant, try to encourage his egotism. If the enemy troops are well prepared after reorganization, try to wear them down. If they are united, try to sow dissension among them.

— General Tao Hanzhang; translated by Yuan Shibing
Sun Tzu's Art of War: The Modern Chinese Interpretation

PSYOP is a vital element within the broad range of US political, military, economic, and ideological actions. Properly employed, PSYOP reduces the morale and combat efficiency of enemy troops and creates dissidence and disaffection within their ranks. Psychological operations can promote resistance within a civilian populace against a hostile regime or be employed to enhance the image of a legitimate government. The ultimate objective of American PSYOP is to convince enemy, friendly, and neutral nations and forces to take action favorable to the US and its allies. Because of the nature of the parent society and the comparative ease of detecting falsehood in a multimedia world, US overt PSYOP campaigns are limited to presenting factually correct material. It would be disingenuous to claim that a balanced picture is presented in US propaganda, but the actual material presented in any particular overt PSYOP message will be verifiable against independent sources.

Truth and falsehood in propaganda must be separated from overt and covert operations and the issue of white, gray, and black (false) propaganda. Overt propaganda is produced by a government or organization that takes responsibility for it. Because of police state conditions or tactical considerations, it

may have to be disseminated by covert means, such as agents who risk their lives to transport and distribute the materials. Overt propaganda may be true or false. Since the effect of propaganda depends on credibility, overt sources that utilize falsehoods quickly lose all effectiveness. Overt propaganda is also known as white propaganda because the source takes responsibility for it. Gray propaganda is material that is distributed without an identified source. It may be true or false. Black propaganda is material produced by one source that purports to have emanated from another source. Such covert productions may be used to damage the credibility of a white (truthful) source by disseminating obvious falsehoods under the label of the previously trusted source. Black propaganda-if effective at all-quickly loses effectiveness unless the populace is particularly susceptible to rumors, manipulation, and distortion of fact. Nevertheless, black propaganda can be highly effective if properly planned. For example, should intel sources determine that an invasion is imminent, broadcasting that fact under an aegis purporting to be that of the potential invader removes all surprise and falsifies all the invader's claims of a "just" war.

Propaganda may legitimately be economical of the truth. For example, in describing the triumph of democracy there is no particular obligation to discuss the role of Boss 'tweed in urban politics.

Military psychological operations are inherently joint operations. Unified, joint task force, and other military commanders identify target audiences and develop PSYOP themes, campaigns, and products. These are submitted through channels to the joint chiefs for approval. The principles of developing a PSYOP campaign are applicable across the operational continuum. Although the complexity of the methodology varies with the level of conflict, considerations for development of PSYOP campaigns are the same for counterterrorism as they are for global war.

The psychological dimension covers the battlefield as well as the effects upon the soldiers fighting the battle, their military leaders and staffs, the political leaders, and the civilian population. On the field of battle, US forces want to face an enemy who is both unsure about his cause and capabilities

and sure about his impending doom; an enemy who, even if unwilling to surrender, has little will to engage in combat.

It is US policy that psychological operations will be conducted across the operational continuum. It must be understood that psychological operations are conducted continuously to influence foreign perceptions and attitudes in order to effect changes in foreign behavior favorable to US national security objectives. Any type or level of PSYOP can be conducted at any point along the operational continuum. The operational environment in which psychological operations are conducted does not, by itself, dictate or limit PSYOP actions or the level of PSYOP applied.

In environments short of declared war, national PSYOP policy is normally derived from official policy statements and declarations on US foreign policy as well as national security policy. Interagency coordination is required. During declared war, the policy emanates from the national command authorities (NCA) upon approval of plans submitted by the Office of the Secretary of Defense (OSD). This national policy is executed through a strategy of coherent international information programs, which consist of US information dissemination efforts dealing with policy and information. It is essential that PSYOP themes and products reflect and support national policy, these overt messages are as official as any White House press release. Therefore, appropriate PSYOP policy and strategy must fully integrate Department of Defense (DOD) PSYOP into these international information programs to alleviate the potential for disseminating contradictory information.

Psychological actions such as show of force, cover, and deception have been used throughout history to influence enemy groups and leaders. Modern psychological operations are enhanced by the expansion of mass communication capabilities. Nations can multiply the effects of their military capabilities by communicating directly to their enemies a threat of force or retaliation, conditions of surrender, safe passage for defectors, incitations to sabotage, support to resistance groups, and other messages. The effectiveness of this communication on the target audience depends on their perceptions of the communicator's credibility-does the

communicator have the capability to carry out the threatened actions?

PSYOP actions convey information not only to intended target audiences but also to foreign intelligence systems. Therefore, PSYOP messages must be coordinated with cover and deception plans and activities, along with operational security planners, to ensure that essential secrecy is realized and that PSYOP messages reinforce cover and deception objectives. Skillful content analysts can determine overall intentions by carefully analyzing PSYOP messages and PSYOP planners can screen their own products to ensure that only the overt intention is broadcast. The methodology of overt propaganda analysis is arcane and difficult, as much derived from art as science. Some practitioners believe the method is more valid when aimed at totalitarian propaganda than PSYOP produced by democracies. Democratic propaganda normally is far less patterned, possibly because the products reflect a less organized process-ad hoc arrangements, swiftly evolving policies, lack of hidden agendas, or, frequently, no agendas at all. Totalitarian-especially communist-propaganda may be easier to analyze because it is highly formalized and patterned.

There is a psychological dimension within any element of national power projection, particularly the military element. Foreign perceptions of US military capabilities are fundamental to strategic deterrent capability. Therefore, US policymakers must articulate our national and military actions (if we don't, others will). Communicating unambiguously to allies, enemies, and neutrals is a key element of US national strategy. The effectiveness of deterrence, power projection, and other strategic concepts hinges on our ability to influence the perceptions of others.

For these communications, any player in the US government or overall body politic may become an important tactical element regardless of the strategic position that the player holds. In conveying the will of the United States, the firm set of the president's jaw in drawing "a line in the sand" may have as much influence on international, and especially adversarial, understanding of US policy as the actions taken by the government. Supporting statements by other officials, including the secretary of state, congressional leaders, and

military commanders, similarly are tactical elements carrying out the information strategy. Tactical actions of this nature, delivered at the strategic level, are analogous to the actual tactical delivery of weapons to targets of a strategic nature in a shooting war. Since much of policy is devoted to achieving national goals while ameliorating genuine conflict and avoiding a shooting war, tactical performance of these roles by strategic elements of the political/ military system is critical to national policy. One of the benefits of the open political process-disseminated and monitored by a free and aggressive media-is that individuals who would be inadequate tactical communicators tend to be shunted away from positions for which the nation's fate requires skillful performance. Military PSYOP may be undertaken at the strategic level, augmenting other national communications systems, particularly in areas for which the peacetime national systems-such as the United States Information Agency-have no access.

In every case, it is crucial that military PSYOP be integrated with other national communications, since the audiences will accept military PSYOP messages as official positions. To ensure this process, military psychological operations rely on a planned, systematic process of conveying messages to, and influencing, selected foreign groups. The messages conveyed by military PSYOP are intended to promote particular themes that result in desired foreign attitudes and behaviors. Therefore, PSYOP may be used to establish and reinforce foreign perceptions of US military capability, determination, and responsiveness to US political goals and to support overall US policy.

Psychological operations are an important dimension of overall military operations. They may be used by commanders to influence the attitudes and behavior of foreign groups in a manner favorable to the achievement of US national objectives. Thus, the principal purpose of DOD PSYOP is to persuade foreign audiences to change or enhance attitudes or behaviors in a manner favorable to one or more national security objectives. Additionally, PSYOP can counter foreign propaganda that adversely affects the achievement of US objectives.

The United States typically distinguishes between PSYOP on a strategic level and PSYOP on a tactical, battlefield level.

Strategic psychological operations are usually considered an aspect of public diplomacy and are normally established and guided by intergovernment working groups created for a particular short-term situation or regional area of concern. The intergovernment groups meet periodically to clarify strategic PSYOP policy in light of political and military developments of the day. At the present time, however, the US government has no permanent mechanism to institutionalize this process.

In tactical or battlefield PSYOP, commanders use such techniques as loudspeaker broadcasts and leaflet drops with the intent of generating a force multiplier without having to increase force size. Psyopsers support tactical deception, counterterrorism, counterpropaganda, and other nontraditional means as the tactical situation merits. PSYOP messages cannot replace tactical performance or redeem inadequate training, weapons, or tactics that result in poor combat performance. However, the methodology can increase the overall functional degradation of enemy capability. Missiles, bombs, bullets, and maneuvers establish the context for PSYOP multiplication and hastening the cumulative results of tactical competence. Psychological operations speed the positive effects of military prowess, and may, under certain conditions, delay the consequences of military failure. Because psychological operations multiply desired effects, positive outcomes can result in quicker victory at lower cost in material, time, and casualties. Whether strategic or tactical, PSYOP uses any available means of communication to achieve desired ends. In Western circles, truthfulness is a desirable goal in itself, and is the principal means for building credibility among targeted audiences. Success in PSYOP rests on thorough analysis and planning.

Modern PSYOP planning includes a target analysis that consists of several phases. The first phase identifies possible target audiences. Once the target audience is identified, such target characteristics as vulnerabilities, susceptibilities, conditions, and effectiveness are analyzed. Vulnerabilities are the four psychological factors that affect the target audience: perception, motivation, stress, and attitude. Susceptibilities include the degree to which the target audience can be

influenced to respond to the message it receives. Conditions of the target audience include all environmental factors-social, economic, political, military, and physical-that influence the target audience. Audience effectiveness is the capability of the target audience to carry out the psyopser's desired response. The concept of audience effectiveness is fundamental to PSYOP success at strategic and tactical levels. If the goal is functional destruction of an enemy tactical unit, the effective audience may be individual soldiers, who may be persuaded to desert, defect, or defect in place; that is, simply fail to perform without overtly resisting their commanders. Other goals may require finding different effective audiences. The responsive audience in a battlefield air interdiction campaign could be the civilian workers who repair damaged railroads and bridges. Truthfully reporting that they are at risk from restrikes of previously damaged targets may dissuade them from voluntarily working. However, if they are slave laborers, the audience may be nonresponsive regardless of their susceptibility. The responsive audience may be taskmasters, or high-level commanders. For example, the susceptibility of the high-level audiences may be threats of war crimes prosecution. Both audiences will have to be convinced, by multiple messages, if the campaign is to be effective. Once the above analysis of audiences is accomplished, the psyopser seeks to determine the specific psychological plan that supports the national objective.

Psychological operations have been a part of military strategy since armies first took the field of battle. The Persian Gulf War and the employment of PSYOP by both sides were the most recent chapter in a long history of PSYOP as an integral part of military strategy. Throughout much of military history, PSYOP's presence has been felt in battlefield campaigns. Psychological operations were integrated into the commander's scheme of maneuver before the label of PSYOP was invented and without the benefit of thorough or scientific planning. An early example of how PSYOP was planned and applied in ancient battle is contained in the writings of the Chinese strategist Sun Tzu, who stated that the most noble victory was to subdue his enemy without a fight. Another was the successful exploits of Genghis Khan (the Mongolian

general Temujin), who would soften his enemy's will to resist by spreading rumors about his own army's strength and fierceness. His planning was simple and, seemingly, relevant and effective.

As early as the Battle of Bunker Hill, colonial military PSYOP operators used leaflets designed to work on the susceptibilities of the effective audience. Leaflets distributed among British troops in Boston by trusted colonial agents were based upon analysis of the situation and the conditions the British troops anticipated, as well as their motivation. Thus, some leaflets reported that food and provisions among the colonial troops were far superior to the hardtack fed the British, and that switching sides would result in an immediate improvement in diet. More important and effective was an appeal to a basic desire to improve the British soldier's status in life, an important factor in motivating enlistment. Many troops had joined merely to obtain subsistence or with the hope of achieving enough riches to obtain farmland. The most effective message slightly pointed out that to obtain land in the colonies, a soldier needed merely to desert and walk west until he found a suitable plot. Hessian mercenaries in particular responded to this appeal later in the war, and a considerable number of the present-day Pennsylvania Dutch owe their ancestry to the effectiveness of this appeal as these soldiers settled in a language-compatible area in which they were unlikely to be turned over to British authority. Colonial strategic psychological operations were masterful from inception, with Thomas Jefferson and Thomas Paine effectively working their various chosen audiences while Benjamin Franklin used his post in France to bolster not only continental support-which eventually resulted in the Franco-American force that was victorious at Yorktown-but also helped bring Lafayette, Pulaski, and Kosciuszko to American shores. The campaigns within Britain that drained political support for the war were most effective. Battlefield competence was important to the success of this effort and included not only victories at Trenton and other places but also the amazing raids by John Paul Jones upon English coastal towns, whose political effect far outshone their minimal military importance. James H. Doolittle's raid on Japan-undertaken for the same purposes

and with analogous military results-was foreshadowed in methodology and in equivalent technological means almost 150 years before.

In the American Civil War, both sides of the conflict directed strategic campaigns at England in the hope of winning support for their respective causes. It remains questionable, however, that these campaigns had been formally planned and that the proper resources were marshaled to execute them. The Southern campaign was virtually undercut by the Confederate refusal to sell cotton to Great Britain. This economic suicide overwhelmed any positive effects that media campaigns may have engendered.

During World War I, PSYOP came into its own as a formal activity. Almost all countries involved in the war used forms of strategic and tactical PSYOP. Many countries formed military units specializing in propaganda. These units' primary duties included distribution of leaflets by balloon and aircraft. The linkage among planning, resource mobilization, and execution by these agencies appeared to be an uncomplicated matter. How the PSYOP details were integrated into the shooting war of the day, or how well PSYOP induced surrenders, was not recorded for history. What is known, however, is that surrenders occurred with a positive correlation to PSYOP activities. Thus, military analysts began taking a new look at PSYOP as an ingredient with surprising impact on the battle. Psychological operations were a resource because they induced stress on both civilian and military forces of the enemy.

During World War II, propaganda activities became known as psychological warfare (psywar). Public broadcast radio, about 20 years old at this point, was called into play. Tank-mounted loudspeakers with a range of approximately two miles amplified the ability of the human voice to reach opposing combatants. Besides media programs, military actions were undertaken for their PSYOP effect. The Doolittle raid against Japan was considered an important PSYOP event for at least two reasons. The carefully planned raid demonstrated credibly to the Japanese that the US could reach and bomb their homeland, prompting them to take unnecessary steps for home defense. More important perhaps, news of the

success back home caused morale to soar in an American population desperate for a victory. Planning, mobilization, and execution all worked in this one instance. However, it must be noted that during this war, aircrews frequently expressed reluctance to risk themselves on leaflet-dropping missions because they lacked confidence in that methodology as a means of bringing victory nearer.

In the years that followed, PSYOP matured as a combat force multiplier, albeit through a series of starts and stops. During the 1950s, the Soviet Union made great strides in both strategic and internal PSYOP. Soviet client-states began very elaborate psychological operations for foreign insurgents and home conscription. At the same time, little was apparently being planned in Western PSYOP circles.

Although strategic and tactical psychological operations were effectively integrated by the North Vietnamese during the Vietnam era, US PSYOP planning was not effectively formalized or coordinated with operations and troop mobilizations. It was in Vietnam that propaganda activities assumed the current term PSYOP-and television was a new medium. The North Vietnamese mastered the art of using the international media, particularly television, for their PSYOP. The US government was ineffective in both public information and public policy in mobilizing its public for the war. As a result of this negative experience in Vietnam, the US government learned the importance of domestic and foreign support of major policy goals.

In the more recent conflicts, PSYOP has been integrated with combat operations. In the Falklands, Afghanistan, Africa, South and Central America, Grenada, Panama, and the Persian Gulf, PSYOP was included by all parties. PSYOP even became a critical part of the terrorist mode of operations during the seventies and were part of the Iraqi PSYOP plan when they threatened terrorist activities.

Any student of PSYOP will quickly learn how important PSYOP can be in political and military strategy. What every student should strive for is an internalization of the concept proposed by Sun Tzu, the Chinese military strategist, that to fight and conquer in all your battles is not supreme excellence; supreme excellence consists of breaking the enemy's

resistance without resorting to fighting. Because soldiers and civilians have not fundamentally changed in nature or psychology since Sun Tzu wrote these observations, they remain appropriate today.

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Strategic Concepts for Military Operations



Col Fred W. Walker, USAF, Retired*

For many years, people have indicated a lack of understanding ~of exactly what military psychological operations (PSYOP) entail. News media refer to PSYOP as psychological warfare (psywar) and imply that there is some nefarious objective or purpose in such action. They usually indicate that there is some element of deliberate misinformation-or even some public lies-involved in such activity. It is time that these misperceptions were set straight. The public must understand that the United States government does *not* engage in public disinformation activities in pursuing national policy. This article concentrates on peacetime strategic concepts, setting aside the loudspeaker and leaflet activities of the battlefield.

Joint Pub 1-02, *Department of Defense Dictionary of Military and Associated Terms* (1 December 1989) broadly defines strategic psychological activities as "planned psychological activities in peace and war which normally pursue objectives to gain the support and cooperation of friendly and neutral countries and to reduce the will and the capacity of hostile or potentially hostile countries to wage war."

This is demonstrably any program that supports a long-term effort to achieve a national or regional foreign policy objective through persuasion. We might consider the term *persuasive communications* to mean the same thing as psychological operations.

How did we become focused on strategic psychological activities? Quite fundamentally, various administrations assessed that the United States was falling behind in world

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influence because the global propaganda and disinformation efforts of the Soviet Union were directed against US foreign policy objectives. As a result of this assessment, President Ronald Reagan directed the Department of Defense (DOD) to revitalize its psychological operations capabilities and use them to support national security objectives in all legal and proper areas.

Secretary of Defense Caspar W. Weinberger ordered an extensive study on how best to implement the president's direction. This action resulted in a master plan to revitalize military capabilities and better apply them to support long-term peacetime national security objectives. Key elements in his plan involved (1) separating the profession of PSYOP from the more narrow field of special operations and (2) significantly restructuring staffs and units. He also recommended enhanced interagency coordination.

It is important to stress the fact that US military psychological operations in peacetime do not involve misinformation or anything related to the Soviet concept of disinformation. Truth must be our guideline in every undertaking. After World War II, Dick Crossman, the British master of international influence activities, counseled that truth is the very essence of strategic peacetime foreign policy efforts and that it should be our fundamental guideline. US policy must endorse his astute recommendation.

DOD is still engaged in a period of transition to revitalize its military PSYOP capabilities. We envision a number of strategic roles and missions, all of which support objectives derived from published national security policy.

According to the annual defense guidance document, our fundamental national security objective is to deter conflict. This is clearly a psychological phenomenon because it occurs in the mind of a potential enemy. When an enemy perceives that it would be too costly for him to attack or that he would probably lose if he started a war, then he elects not to attack and conflict has been deterred. His mental decision, based upon his perception of our capabilities and resolve, is the key element in the process of deterrence. Military PSYOP in support of this fundamental defense objective, then, should seek to clarify and focus this perception.

Military PSYOP programs designed to enhance deterrence should include those that support arms control talks as well as those that clarify and explain national aims for strategic nuclear force posture. Efforts to clearly describe our policies for peaceful military uses of space and the strategic defense initiative (SDI) can readily be listed as contributing to deterrence. The fact that the term *star wars* was publicly attached to the SDI program aided the Soviets considerably in their propaganda campaigns against it. There were two reasons for this: (1) the term evoked subconscious perceptions of science fiction and fantasy among various public audiences and (2) "wars" is perceived as aggressive rather than defensive. As a result, there was little support for the program. Nevertheless, little was done to decouple this negative terminology. In the future, more must be done to properly support national policy.

A simple thing like terminology can indeed be a major factor in various public audiences' acceptance of or support for any policy. Recent history shows that the term *neutron bomb* was a key element in the Soviets' eminently successful campaign a decade ago to prevent President Jimmy Carter from deploying enhanced radiation weapons in Europe. In like manner, we can recall how our national leaders were duped into referring to Iranian terrorists and kidnappers as students at the outset of the Iranian Embassy hostage debacle in 1979. These are clear examples of how terminology can sway public perceptions on a global basis.

Certainly, strategic military PSYOP programs should play a significant role in countering terrorism. In addition to gaining some control over media terminology, we need information programs that will disassociate terrorist groups from pockets of popular support. Such programs should publicly impugn the worth of the terrorists' objectives and denigrate their leadership. We should also seek to reduce their internal cohesion and cause them to waste their resources defensively; for example, in hiding and vetting new members.

Above all, we should seek to positively influence foreign policy efforts to reduce or eliminate foreign governmental support to terrorist groups. With firm evidence that the governments of Libya, North Korea, and Cuba support various

terrorist groups, we can and should make publicly supported diplomatic efforts against such governments. Although we have the capability to do this, there are tremendous administrative and bureaucratic hurdles to surmount in developing such programs.

There is a major role to play in countering global disinformation efforts as used by the former Soviet Union. A thoroughly documented Soviet disinformation campaign attributed the cause of acquired immune deficiency syndrome (AIDS) to the Central Intelligence Agency (CIA) and DOD experiments to develop biological warfare weapons. While this was a total falsehood and seemed preposterous to most Americans, the disinformation was found credible by several audiences elsewhere in the world. We are only at the beginning of the level of fear that this epidemic can cause in our world, but the Soviets and others recognized early on that fear inhibits rational thinking and vastly enhances the effectiveness of their propaganda and disinformation.

The second phase of their AIDS disinformation campaign began surfacing in foreign public news items that accused US military personnel stationed overseas of spreading AIDS in various host nations. News stories and leaflets with this theme appeared in the Philippines, Africa, and the Middle East. The obvious objective was to undermine US military presence and influence on a global basis. Still a foreign policy problem, it could be helped by a comprehensive and coordinated foreign policy that vigorously exposes and describes disinformation campaigns while pointing out extensive US efforts to control the disease.

Many are probably not aware that the Soviet Union engaged in a sinister and very dangerous game of economic warfare against the United States. The area of strategic metals provides a good example. Africa was the most visible battlefield in this subtle economic struggle, having as it does an abundance of these resources easily and economically available. The US is about 10 percent self-sufficient (within our borders) in supplies of this type; the USSR was about 90 percent self-sufficient. Metals such as chromium, cobalt, zirconium, titanium, and tantalum are essential to any modern high-technology industrial society. The military

dimension is obvious from the extent to which defense systems depend on technology.

The Soviets attempted to keep their supplies in the bank—mostly in Siberia, under the ice. They were content to compete with the US on the world market, thus driving up the price. In various countries of Africa, we saw propaganda, disinformation, and guerrilla warfare drive the price up and the Americans out. In Zaire, this combination of activities caused a 600 percent price increase for cobalt in a two-year time period (1979-81). Now, years later, we are still wondering how to gain control of this issue.

Other areas on the economic warfare front were international financing (manipulating debtor nations and credit extensions), protectionism (still an issue), and peaceful uses of nuclear energy. Propaganda in these areas is increasingly more subtle and less noticed, but it should be monitored. Resulting evaluations should be placed in our national security and foreign policy development processes. And we must ensure that the military dimension is properly coordinated.

There is a military dimension in negotiations on the law of the sea—treaties involving fishing rights, oil drilling, navigation rights, and seabed mining. We also have legitimate national security interests in extradition treaties for terrorists and drug traffickers.

Persuasive communications in peacetime may be accurately likened to advertising and public relations programs. Secrets to success involve getting the facts out in clear and understandable ways, relating these facts to perceived human needs, and ensuring enough repetition so that the message is received and reinforced. Various target audiences have differing perceived needs, scripts, and priorities; therefore, the same message must be packaged in different ways in order to appeal to a wider spectrum.

The United States government has a wide variety of communication channels. Each major government agency has offices whose purpose is to announce its policies and explain how its activities support national policies and goals. The United States Information Agency is specifically charged with informing peoples in foreign nations about US policies and describing American culture and our democratic way of life.

This is done through speakers and seminars, press conferences, and various publications. Radio and television programming, such as the "Voice of America" and the new "Worldnet," are able to reach vast audiences.

Areas where there is the most room for improvement are in (1) coordinating various government agencies and (2) packaging the message to fit the audience. Often in crisis situations or periods of tension, the need for rapid response inhibits coordination among various branches of the government. Officials tend to couch their statements in terms they are comfortable with and to speak from their personal points of view, neglecting to consider the cultural aspects and aspirations of foreign audiences. Improvement in these areas is absolutely essential for more effective communications.

Repetition is also necessary. Government officials are busy people; they tend to make policy statements once, and then get on to the next item of business. But policy statements don't necessarily have a life of their own. Unless repeated in various ways and related anew to emerging situations, they tend to submerge in piles of records and gather dust in archives.

The Soviets clearly demonstrated that the most blatant lies can be successfully put across through massive repetition of disinformation and propaganda. In fact, repetition was the secret of their success. Some Soviet propaganda lines were constantly repeated for 50 years; although there was not a single economic success story arising out of a communist or socialist system, belief in this big lie continued over much of the world. People are still willing to give up their freedom for a dream that is inconsistent with the human condition. This is the threat we face from the competition.

Initial changes by Mikhail S. Gorbachev to the Soviet global propaganda machine reflected a stepped-up effort to supplant US power and influence. After the Twenty-seventh Party Congress in the spring of 1986, their propaganda apparatus was restructured and even more centralized. The International Information Department was disestablished and its responsibilities were consolidated within the International Department (ID) and the Propaganda Department (PD). The PD had been responsible for internal domestic propaganda. After

the changes, it had oversight for several activities oriented toward foreign audiences; for example, Tass and Novosti as well as Radio Moscow. This move reflected the theory that foreign propaganda and domestic propaganda are intimately linked, and that greater efficiency can be gained through centralization.

At the same time, Gorbachev's reforms (under his program of glasnost) were being widely touted in the West. Many were led to believe that this change represented a welcome softening of formerly hard Soviet propaganda lines. In fact, one of the major propaganda efforts to sugarcoat this program sought to convince people that the term glasnost meant "openness." A more accurate translation would be "publicity." Proper translation is not simply a semantic game; it shaped the debate on effective policy response toward the USSR.

Most analysts feel that the real intent of glasnost was not to create an open society, but to consolidate Gorbachev's power by modernizing the system and ending economic stagnation. Carefully staged events, such as the Moscow Peace Forum, dissident releases, rock concerts, and television shows, sought to take advantage of easily co-opted Western participants in order to improve external opinion of the Soviet Union, further Soviet propaganda lines, and secure badly needed Western technology.

Those events should have been viewed with extreme distrust, inasmuch as they represented a quantum leap in Soviet propaganda sophistication. We saw significant improvements beginning under Yuri V. Andropov's administration, with expanded use of professional psychology and psychiatry along with infusions of equipment and talent that increased the quality of Soviet PSYOP. Under glasnost, we watched a merger between these professional propagandists and the innocent Western media. It was and is a dangerous and threatening evolution.

Still, the Soviets lost control of glasnost, affording an opportunity to project democratic messages to various Soviet audiences while those channels were open.

If US government agencies can improve their coordination and persuasive communications capabilities, we may be able to slow and then reverse our losing trend in exerting world

influence. Propaganda and disinformation that seek to cause people to trade freedom for lies is a most insidious and dangerous threat, and freedom is far too precious a thing to be defended by haphazard efforts. We do have one significant advantage: There is no need to lie because properly packaged truth is the very best propaganda.

No More Tactical Information Detachments

US Military Psychological Operations in Transition



Col Alfred H. Paddock, Jr., USA, Retired

US military PSYOP today faces an uncertain future. This paper provides a brief perspective on the evolution of US military PSYOP during the twentieth century, examines the conditions that led to a revitalization of these capabilities during the 1980s, contrasts this revitalization with the international and domestic environment faced by the Department of Defense (DOD) today, and outlines some of the major challenges for the US military PSYOP community during a transitional period.¹

A broad definition of psychological operations details the planned use of communications to influence human attitudes and behavior. They consist of political, military, and ideological actions conducted on target groups to create desired behavior, emotions, and attitudes. If used properly, PSYOP will precede, accompany, and follow all applications of force. The military should carry out this course of action under the broader umbrella of national policy. In addition, it should coordinate fully and carefully the military component of the overall PSYOP effort with other agencies of government.

More specifically, PSYOP can demoralize, disorient, and confuse hostile groups. Against such groups, psychological operations are employed as offensive weapons to enhance the overall effectiveness of military operations. They also can unite, inform, and bolster the morale of nonhostile groups. When targeting neutral or friendly groups, they are used to support military objectives by developing cooperative attitudes and behavior in the targeted group.

Evolution of US Military Psychological Operations

The level of interest in military psychological operations during this century has been episodic, basically rising and falling during and after the major conflicts in which US forces have been committed. Over this period, most of the activity in military PSYOP centered on the Army. The following brief historical perspective, therefore, focuses on the Army's experience to illustrate the fortunes of military PSYOP.

While giving psychological warfare (psywar) only token recognition' in World War I, the Army established both the Psychological Warfare Subsection of G-2 in the War Department and the Propaganda Section of G-2 in General Headquarters, American Expeditionary Forces. Military tactical psychological warfare centered on the production of leaflets; radios did not exist as a means of communication, and loudspeakers were primitive. Military propaganda concentrated on producing surrender appeals; balloons and airplanes were the primary method for their dissemination.

From 1918 to 1941, no psychological warfare office existed in the War Department. The lessons of experience were lost, and by 1941 only one officer on the War Department staff had had psychological warfare service in the previous war.

During World War II, most of the Army's operational work in psywar took place at the theater level, where the responsible organization was normally designated a psychological warfare branch (PWB). The largest of these organizations at the theater level, the PWB at Allied Forces Headquarters (PWB/AFHQ), was activated in North Africa in November 1942 at the order of Gen Dwight D. Eisenhower. It was expanded in February 1944 to the Psychological Warfare Division, Supreme Headquarters, Allied Expeditionary Force (PWD/SHAEF). Psychological warfare was defined as "the dissemination of propaganda designed to undermine the enemy's will to resist, demoralize his forces and sustain the morale of our supporters." ²

The basic Army field operating unit for psywar was the Mobile Radio Broadcasting (MRB) Company. The equipment for this company was unlike anything conventional soldiers had seen in the field: public address systems, radios,

monitoring sets, loudspeakers, typewriters, mobile printing presses, and leaflet bombs. MRB units were usually divided by the separate Army groups and field armies into small teams, often to work in direct support of frontline conventional combat units. Five such units eventually served under PWD/SHAFF. Although these units resulted from improvisation in 1943 and 1944, the doctrinal and organizational concepts they embodied reappeared in the psychological warfare units formed during the Korean conflict.

During 1945-46, Army psychological warfare staffs and units dissipated with the general demobilization of the military establishment. Despite the efforts of a few senior civilian and military officials to retain a military PSYOP capability, the Tactical Information Detachment was the only operational psychological warfare troop unit in the US Army when the North Koreans attacked South Korea in June 1950. Organized at Fort Riley, Kansas, in 1947, this detachment had been reorganized as the 1st Loudspeaker and Leaflet (L&L) Company. Sent to Korea in the fall of 1950, it served as the Eighth Army's tactical propaganda unit throughout the conflict. Tactical propaganda, sometimes called combat propaganda, was directed at a specific audience in the forward battle areas and used in support of localized operations. Mobile loudspeakers mounted on vehicles and aircraft became a primary means of conducting tactical propaganda in Korea.

To conduct full-scale strategic operations, the 1st Radio Broadcasting and Leaflet (RB&L) Group was organized at Fort Riley and shipped to Korea in July 1951. The 1st RB&L Group was specifically designed to conduct strategic propaganda in direct support of military operations. This propaganda was intended to further long-term strategic aims and was directed at enemy forces, populations, and enemy-occupied areas. The 1st RB&L Group had the equipment and capability to produce newspapers and leaflets, and to augment or replace other means of broadcasting radio propaganda. The group supervised a radio station network, known as the "Voice of the United Nations," and often produced more than 200 million leaflets a week that were disseminated by aircraft or by specially designed artillery shells. The leaflets expressed various themes. Some leaflets, for example, offered inducements for

enemy soldiers to surrender; others bolstered the morale of Korean civilians by proclaiming UN support.

Although the RB&L Group was a concept accelerated to meet the requirements of the Korean conflict, it performed functions similar to those used in psychological warfare in World War II. Its MRB Company bore a direct linkage to the mobile radio broadcasting companies formed under PWD/SHAEF to conduct operations in North Africa and the European theater during 1944-45. However, the MRB companies were organized during World War II to perform tactical psywar; radio later became an essentially strategic weapon that had no place in a purely tactical psychological unit. The strategic concept embodied in the RB&L Group was destined to figure prominently in the psywar capability that was subsequently formed as part of the Psychological Warfare Center in 1952. The tactical idea expressed by the L&L Company also influenced the capability that was developed there. As originally established at Fort Bragg, North Carolina, the Psychological Warfare Center consisted of a psychological warfare school, the 6th Radio and Broadcasting Group, a psychological warfare board, and the 10th Special Forces Group. The mission of this unprecedented center:

To conduct individual training and supervise unit training in Psychological Warfare and Special Forces Operations; to develop and test Psychological Warfare and Special Forces doctrine, procedures, tactics, and techniques; to test and evaluate equipment employed in Psychological Warfare and Special Forces Operations.³

After an initial burst of activity fueled by the Korean conflict and by fears of a possible outbreak of war in Europe, interest in the Psychological Warfare Center began to dissipate. Its title was changed to the Special Warfare Center in 1956, but the Army's psychological operations capability had eroded by the early 1960s.

Consequently, an insufficient base of PSYOP-trained officers were available when the 6th Psychological Operations Battalion was activated in Vietnam in 1965. By 1967, the Army's PSYOP forces in Vietnam had been expanded to a group (the 4th) with four battalions, one in each of the four corps tactical zones (CTZ). The group served under the commander, US Military Assistance Command, Vietnam, with the J-3's Psychological Operations Division exercising direct

staff supervision. The Joint US Public Affairs Office (JUSPAO) provided US PSYOP policy guidance not only to the civilian agencies but also to all military PSYOP elements.

In addition to providing tactical support to field force commanders, the 4th Psychological Operations Group assisted the South Vietnamese government in its communication effort down to the hamlet level. The group headquarters operated a 50,000-watt radio station and high-speed heavy printing presses, published a magazine for Vietnamese employees working for US government and civilian agencies, and could research and develop propaganda materials.

In contrast, PSYOP battalions had light printing presses, a research and propaganda development capability, personnel to work with the US Air Force Special Operations units for aerial leaflet and loudspeaker missions, and ground loudspeaker and audiovisual teams. Loudspeaker and audiovisual teams operated with US divisions and brigades or with province advisory teams. The 7th Psychological Operations Group in Okinawa provided valuable backup support in printing and in disseminating leaflets at high altitudes.

During the height of US involvement in Southeast Asia, the Army stationed PSYOP units at Fort Bragg and in Germany, Panama, and Okinawa. These units were established in addition to the 4th Psychological Operations Group in the Republic of Vietnam. By the mid-1970s, however, all that remained in the active component was an inadequately staffed and antiquatedly equipped group at Fort Bragg-a condition that did not improve significantly for 10 years.

Revitalization of PSYOP in the 1980s

The 1980s saw an upturn in the fortunes of military PSYOP, made possible by several conditions. President Ronald Reagan, who assumed office with a strong anticommunist orientation, characterized the Soviet Union as the "evil empire" early in his tenure. He directed that a program be developed to support noncommunist insurgencies (the "Reagan Doctrine") around the world. With public opinion supporting him, President Reagan embarked upon a large buildup of the US defense establishment-a buildup that benefited military PSYOP.

The president then outlined, in a number of national security directives, his approach to the psychological dimension of national power. His initial national security strategy, announced in the summer of 1981, contained four basic components: diplomatic, economic, military, and informational. This emphasis on the psychological component was retained in subsequent Reagan national security strategies.

In January 1983⁺ President Reagan signed National Security Decision 77, "Management of Public Diplomacy Relative to National Security." This directive defined public diplomacy rather broadly, stating that it "is comprised of those actions of the U.S. Government designed to generate support for our national security objectives." The term generally evolved to embrace a broad range of informational and cultural activities. The decision also established an interagency mechanism to plan and coordinate public affairs, information, political, and broadcasting activities of the US government.

In early 1984, the president directed DOD to rebuild its military PSYOP capabilities. In response to this directive, Secretary of Defense Caspar Weinberger launched a major evaluation of the department's capabilities and needs in psychological operations. This evaluation concluded that DOD's PSYOP capabilities had been allowed to atrophy over the previous decade. Across-the-board deficiencies had developed in policy guidance, roles and missions, doctrine, organization, force structure, operational concepts, planning, programming, training, logistics, intelligence support, readiness, personnel programs, and-most importantly-attitude, underscoring the need for education and heightened awareness at all levels of military and civilian organizations.

DOD PSYOP Master Plan of 1985

Secretary Weinberger elected to use a DOD PSYOP master plan as the framework for rebuilding military PSYOP capabilities. Approved in mid-1985, the plan served as a comprehensive design for the fundamental improvement of the department's capabilities to effectively perform worldwide psychological operations in support of national objectives in peace and crisis and at all levels of conflict.

The plan specified a number of remedial actions-over 200, in fact-to be implemented over several years. Several essential themes manifested themselves.

The first theme highlighted the need to develop a comprehensive joint doctrine for the formulation, direction, coordination, and conduct of PSYOP in peace, crisis, and war. In effect, this doctrine provided a foundation for the revitalization effort. Among other things, it sought to enunciate the function of PSYOP as a force multiplier in all military activity, establish the conceptual framework for planning and implementation, and delineate roles and responsibilities of the several components. The Joint Chiefs of Staff (JCS) published this doctrine in 1987. It was later revised to reflect US experience with PSYOP in support of military operations in Panama and the Persian Gulf.

The development of doctrine was to be paralleled by major improvements in PSYOP planning, the second theme of the 1985 Master Plan. It devoted insufficient human talent to full-time, meaningful, sustained PSYOP planning at appropriate staff levels. The report card on this major deficiency offers mixed reviews, but some evidence of progress exists. Creation of a small psychological operations directorate, the first such office to exist in the Office of the Secretary of Defense (OSD) in over 20 years, indicated the seriousness with which Secretary Weinberger undertook the revitalization effort. The PSYOP staff element in the Office of the Joint Chiefs of Staff (OJCS) was upgraded from a branch to a division. It also showed an increase in personnel, but later reverted to a branch and lost a few personnel spaces. The Department of the Army staff created a psychological operations and civil affairs division, where before only one full-time officer had been assigned to this activity.

Outside the Pentagon, a few changes occurred. Among the unified commands, United States Southern Command (USSOUTHCOM) created a PSYOP detachment to augment its staff capability. The US Special Operations Command (USSOCOM) was established in 1987 at MacDill Air Force Base, Florida. Included in this unified command staff was a directorate for psychological operations and civil affairs (J-9). More recently, in 1990, the Army created the Civil Affairs and Psychological Operations Command at Fort Bragg. Commanded by a USAR

brigadier general and staffed primarily by reserve component personnel on varying periods of active duty, this headquarters of 146 personnel (later reduced to 80) serves all active and reserve component Army civil affairs and psychological operations units. This new organization reports to the US Army Special Operations Command (USASOC) at Fort Bragg.

Much more remains to be done in this area, however. Perhaps the key requirement is that staff officers receive formal training in this specialized area and that psychological operations become an integral part of the operational course of action in any plan. A few innovative and resourceful staff officers can make a vast difference if they have access to a command's major planning activities. Because of the paucity of trained PSYOP staff officers in major commands, the burden for planning too often falls upon the Army's 4th Psychological Operations Group, the only active duty unit of its type among the services.

Development of adequate numbers of PSYOP planners is where the Air Force, Navy, and Marine Corps can make an important contribution to the revitalization envisaged in the 1985 Master Plan. The conduct of psychological operations is not the exclusive domain of such specialized units as those in the Army. In the current resource-constrained environment, only a small possibility exists that the other services will opt to field new PSYOP units. On the other hand, there is every reason to expect those services to develop fully qualified PSYOP planners to meet their own needs and to provide their proportionate share on joint staffs.

To help address this need and in response to the 1985 Master Plan, the Army's John F. Kennedy Special Warfare Center and School at Fort Bragg developed a joint PSYOP staff planning course in 1988. A large proportion of its students have been from the Army's reserve component PSYOP community. Too few representatives from the other services have participated, and it is uncertain how many of them actually were assigned to staff positions where their expertise could be utilized. Reportedly, the Army plans to eliminate the course in 1996. If it does, this will be unfortunate-it is the only formal joint PSYOP planning course currently available. What is needed instead is a renewed and continuous emphasis that would enable the course to fulfill its original purpose. This

will not happen, however, until the services begin to send more officers to the course and ensure their assignment to positions where their training can be utilized.

Closely related was the need to educate our officer corps on psychological operations, the third theme. As indicated earlier, the 1985 Master Plan stated that the root cause of the atrophy of our military PSYOP capabilities was a lack of understanding of psychological operations, their value, and their application. Some improvement was made in this critical area as a result of frequent briefings to senior commanders and staff officers by PSYOP personnel, the professionalism of PSYOP units in contingency planning and in support of conventional forces on joint training exercises, and the steady improvement of PSYOP studies and assessments in support of the unified commands and national level agencies. Certainly, the credible performance of PSYOP forces during combat operations in Panama and the Persian Gulf also played a key role in this regard.

Additionally, the PSYOP courses being presented by both the Air Force and the Army help to address the deficiencies in this area of PSYOP awareness and understanding. The Air Force's Joint Senior Psychological Operations Course, held four times a year by their Special Operations School at Hurlburt Field, Florida, provides selected senior officers and civilians with an awareness of how psychological operations can support national objectives throughout the spectrum of conflict. This course initially showed considerable promise as an educational tool, but it attracts too many personnel whose duties have little relationship with psychological operations. Again, this situation requires renewed and continuous emphasis to interested senior officials in key positions. Unfortunately, these personnel too often find it difficult to fit a three-or four-day course away from the office into their busy schedules. A shorter orientation-perhaps four hours, presented by a traveling team-should be considered as an addition to the present course.

As was the case before the Vietnam War, the 1985 Master Plan stated that PSYOP instruction in our mainstream service school system-where our future commanders and staff officers are trained-was limited or nonexistent. This situation not only made more difficult the PSYOP community's job of educating supported units on this unique weapons system-it

also had a negative effect when priorities concerning force modernization were being set.

To address this loss of PSYOP institutional memory, the under secretary of defense for policy, Dr Fred Ikle, sent letters in 1986 and 1987 emphasizing the secretary of defense's intention to revitalize our military PSYOP capabilities and offering an OSD presentation on psychological operations to commandants of the colleges and the command and staff colleges. The intent was to stimulate interest in a more extensive treatment of PSYOP in service school curricula. The military services were asked to review all levels of their professional military education (PME) curricula, both officer and enlisted, and to develop new educational goals that would upgrade their psychological operations PME. As a second part of this approach, OSD initiated a contract to develop applicable PSYOP curriculum materials for the services.

These materials were in fact provided to the services, but there is little evidence to suggest that the services integrated PSYOP into the curricula of their schools. Nor have great speakers made presentations on PSYOP to service schools in a coherent and consistent manner (some presentations are made in electives). Institutionalization of PSYOP understanding will not occur until service schools have removed this deficiency.

The fourth broad theme in the 1985 Master Plan encompassed the need to modernize our PSYOP force structure in terms of both personnel and equipment. With the exception of an increase of the 4th Psychological Operations Group's strength, the force structure today is essentially the same as in 1985. The Navy has an excellent radio and television capability in its reserves and a 10-kilowatt (kW) mobile radio transmitter that is assigned to its Tactical Deception Group (Atlantic), both of which can be used to support PSYOP activities. The Air Force has a National Guard squadron of specially fitted C-130 aircraft for radio and television support of PSYOP along with other duties. Also, a handful of Air Force officers with PSYOP expertise are serving in key positions in the Pentagon, among the unified commands, and at their Special Operations School at Hurlburt Field. The Marine Corps has two civil affairs groups with PSYOP as a secondary

mission in its reserves. Only the Army has active duty forces dedicated solely to psychological operations.

The 4th Psychological Operations Group at Fort Bragg is all that remains of the Army's active PSYOP capability. Assigned to the US Army Civil Affairs and Psychological Operations Command, and to a part of the US Army Special Operations Command, the 4th Group has many worldwide missions and responsibilities. The 4th provides support to all levels of DOD, from unified command through division. It supports both conventional forces and special operations forces. In addition, it is often nailed upon to provide support to national level agencies and organizations. If any one military unit can be adjudged a "national asset," surely the 4th Psychological Operations Group fits the requirements.

Essentially, a military PSYOP unit engages in two broad activities: (1) research/ analysis and (2) operations. The first activity consists of continually monitoring and assessing psychological environments in specific foreign nations to determine how those situations affect the formulation and execution of US policies and actions. This research and analysis results in published studies and assessments that are unique; they provide the foundation for establishing psychological objectives that support US goals related to foreign nations or groups. Research and analysis is therefore essential to accomplishment of the second broad activity: planning and executing PSYOP campaigns that employ communications media and other techniques designed to cause selected foreign groups and individuals to support US national and military objectives.

In peacetime, a military PSYOP unit conducts research and analysis of specific geographic regions and target audiences, develops PSYOP plans to support conventional and special operations units, and participates in field exercises that employ these plans. Because of the paucity of PSYOP expertise at unified commands, the 4th Psychological Operations Group provides staff assistance and advice to headquarters and to other major commands.

It should be eminently clear from the foregoing that one active duty PSYOP organization cannot support all unified command requirements for mid- or high-level intensity

conflicts. The reserves are, therefore, a vital component of the "PSYOP community," since 73 percent of the Army's PSYOP mobilization capability lies in its reserve component units. Serving as the Army's planning agent to align the AC and RC units program (CAPSTONE, which links reserve units with the units they would support upon mobilization), the Civil Affairs and Psychological Operations Command (USACAPOC) provides training assistance to, and coordinates the contingency planning efforts of, reserve units. The 4th Group assists USACAPOC in this effort.

Generally speaking, then, USACAPOC and the 4th Psychological Operations Group act as a "strategic nucleus" for the PSYOP community; they provide the bulk of peacetime and low-intensity conflict requirements, give direction and guidance to the PSYOP community for contingency planning and participation in peacetime exercises, and serve as the command and control nucleus for generally or partially mobilizing reserve component forces. The reserve component performs its planning and training responsibilities under the CAPSTONE program and prepares for general or partial mobilization in support of the unified commands.

Paradoxically, the successful CAPSTONE program underscores one of the PSYOP community's most glaring weaknesses: its limited capability to respond to peacetime and low-intensity conflict requirements. While mid- and high-intensity conflict requires either partial or general mobilization of the reserve component, the active component must provide most PSYOP activities during peacetime and at the lower end of the conflict spectrum.

As a result of initiatives undertaken in the early_ 1980s, the Army increased the strength of the 4th Group by 500 personnel, roughly doubling its size by the mid- to late 1980s. The 1985 DOD PSYOP Master Plan provided additional impetus for this increase. The reserve component PSYOP structure has remained relatively stable in recent years, with a little over 3,000 personnel.

In terms of personnel quality, the Army's military occupational specialty (MOS) for PSYOP enlisted personnel was a welcome accomplishment. Reports of the high quality of personnel being trained under this specialty have been encouraging.

Less encouraging was the Army's decision in the mid-1980s to remove its officer **PSYOP** and civil affairs MOS from the foreign area officer (FAO) specialty. The change was disturbing because it separated psychological operations from the specialty that had provided its intellectual lifeblood. The core of the area expertise (knowledge of foreign cultures) and the analytic capability of psychological operations fell within the FAO specialty.

The Army's initial decision included both **PSYOP** and civil affairs in the special operations functional area. Subsequently, however, the Army developed separate functional areas for **PSYOP** (FA 3913) and civil affairs (FA 39C). It remains to be seen whether this decision will provide the quality officers that previously had been produced by the FAO program.

With respect to the modernization of psychological operations equipment, the progress has been more positive. Several Army initiatives in the early and mid-1980s upgraded active and reserve component print, radio, loudspeaker, and audiovisual capabilities. The 4th Group's media production center, built in the mid-1980s, represented a quantum leap in the military's **PSYOP** capability to operate in a modern audiovisual environment. Similarly, the Air Force allocated funds to modernize its National Guard aircraft dedicated to support **PSYOP**.

Nevertheless, modernization of **PSYOP**-unique equipment requires continued emphasis. For example, with one exception, the old, relatively immobile 50,000 kW radios (the TRT-22s) in the **PSYOP** community have not been replaced. **PSYOP** loudspeakers once again need upgrading, and the Air Force needs a device that can rapidly release leaflets in high-altitude operations.

Two of the most controversial themes of the 1985 DOD **PSYOP** Master Plan were the organizational separation of psychological operations from special operations and its corollary, creation of a joint psychological operations center. Indeed, these were the only truly revolutionary initiatives in the original plan-and both failed.

The authors of the 1985 Master Plan believed that, in general, the subordination of psychological operations to special operations detracted from recognition of the overall applicability of **PSYOP** in times of peace, crisis, and war. The

1985 Master Plan, therefore, called for separating psychological operations from special operations throughout DOD, including departmental levels and all headquarters and staffs of the JCS, the services, the unified and specified commands, and the component and subordinate commands. The plan outlined several reasons for separating PSYOP from special operations.

Planning, particularly in the unified and specified commands, suffered because the sole PSYOP planner was usually located in the special operations staff element and was employed only part-time in psychological operations. This subordination detracted from the broader responsibility of planning psychological operations support for the theater's total requirements, particularly in those missions that link military psychological operations and national objectives, policy, and strategy, and that require in-theater interagency cooperation.

Further, the subordination of psychological operations units to the special operations field, including its command and control structure, contributed to the lack of understanding of PSYOP, its uses and capabilities, by military officers and senior civilians. This association and subordination caused many in the field to conclude that psychological operations were focused primarily in support of special operations missions.

While PSYOP does have a mission in support of special operations, it also has a much broader application in peacetime and in crisis-with or without accompanying military operations-and across the entire spectrum of conflict. In the 1980s, only 10 percent of the Army's psychological operations forces-active and reserve-were designated by contingency plans to support special operations units in wartime.

Similarly, the argument for separation of PSYOP from special operations was implicit in the Army's and JCS's arrangements for wartime command and control of psychological operations. In wartime, most of the PSYOP forces are aligned (within the unified commands) with a chain of command that is totally separate from that of special operations forces. PSYOP units are combat support forces and are employed at both strategic and tactical levels from the theater to the division as a matter of routine; special operations forces are employed primarily as strategic assets only on an exceptional basis.

Because of its controversial nature, the separation directed by the 1985 Master Plan was slow in implementation. To be sure, some important initial steps were taken. A new OSD psychological operations directorate established in January 1986 was assigned to the principal deputy under secretary of defense for policy and was separated from special operations in terms of overall policy responsibilities. On the joint staff, PSYOP was removed from the Joint Special Operations Agency and placed under the J-3. An important precedent was established on the Department of the Army staff when a separate PSYOP and civil affairs division was created; and two unified commands—USSOUTHCOM and USCENTCOM—effected the separation (PSYOP from special operations) within their staffs.

But for the large part, separation did not take place among the unified commands, subordinate service headquarters, or at the operational level. The Army, for example, took the position that separation applied only to staff levels, not forces. A major reason for the delay, of course, was the uncertainty resulting from the congressionally mandated reorganization of special operations forces. This subject will be discussed later in more detail. Suffice it to say at this point that full separation did not occur.

The separation issue was closely related to the final major theme of the original master plan: creation of a joint psychological operations center. According to the master plan, psychological operations was sufficiently important to warrant the creation of a separate center dedicated to the long-term development and nurturing of this unique capability. This center eventually became the organizational and intellectual font of PSYOP within the Department of Defense.

The responsibilities for the center envisaged in the 1985 Master Plan included long-range strategic psychological operations plans; continuing education and training of personnel research and analytical studies; and development of equipment. The center was also to assist OJCS and OSD to develop, plan, and coordinate the defense portion of inter-agency activities, and to assist the unified and specified commands in their planning of psychological operations. To best accomplish these tasks, the plan favored the Washington, D.C. area for the center's location.

The joint psychological operations center was to consist of two separate but mutually supporting elements, one operational and the other developmental, each indispensable to the other. These elements were to have been the 4th Psychological Operations Group along with PSYOP spaces in the Army's John F. Kennedy Special Warfare Center and School. This concept would have used existing PSYOP units and personnel spaces to provide the nucleus of initial manpower requirements.

The plan indicated that initially the center probably would be under Army management because the other services had few personnel to contribute. However, as representation from the other services increased to more than token level, the joint character of the center was to be emphasized by making its command rotational among the services. As with the separation theme, however, the joint psychological operations center envisaged by the original plan met with fierce resistance, particularly from the Army-which, of course, would have been the most heavily affected by the initiative.

Implementation of both initiatives-the separation of PSYOP from special operations and the creation of a joint psychological operations center-became, in effect, hostage to the resolution of several issues that resulted from the congressionally mandated reorganization of special operations forces. In October 1986, Congress passed a special operations force (SOF) reform package sponsored by Senators William Cohen (R.-Maine) and Sam Nunn (D.-Ga.). The law created a unified SOF command under a four-star general or flag officer, an assistant secretary of defense for special operations and low-intensity conflict, and a board for low-intensity conflict within the National Security Council (NSC). It recommended the appointment of a deputy assistant to the president for low-intensity conflict. Particularly important, it directed the secretary of defense to create a major force program category for DOD's five-year defense plan for special operations forces.

After passage of this legislation, a major question arose on whether to include PSYOP and civil affairs units in the assignment of forces to the new USSOCOM. Good arguments were presented on both sides of this issue. Two of the major advantages advanced for inclusion were that these forces would benefit from the sponsorship of a unified commander

and participation in the major force program for SOF. But the secretary of defense's previous guidance to separate PSYOP from special operations-as part of his decision concerning implementation of the 1985 DOD Psychological Operations Master Plan-had to be considered. After a lengthy review of this issue, Secretary Weinberger decided to assign Army and Air Force active and reserve component psychological operations and civil affairs units to USSOCOM, effective 15 October 1987.

Secretary Weinberger's decision, of course, sealed the fate of the two most controversial and far-reaching initiatives of the original plan: separation of PSYOP from special operations and creation of a joint PSYOP center. Separation at the operational level had never taken place, since the Army's PSYOP forces remained under their special operations command at Fort Bragg. And separation at the staff level-which had seen some initial progress, at least in the Pentagon-would inevitably fail as well. On the joint staff, PSYOP was transferred back to special operations. And in May 1992, overall policy responsibility for PSYOP in OSD was moved to the Office of the Assistant Secretary of Defense (OASD) for Special Operations and Low-Intensity Conflict.

The secretary's decision also made moot the creation of a joint PSYOP center, as originally conceived in the 1985 Master Plan. The forces and personnel spaces scheduled for the nucleus of this project remained under the Army's special operations command and as part of USSOCOM. Even the creation of a much smaller version of the joint PSYOP center-located in the Washington, D.C. area and concentrating primarily on strategic PSYOP-has become unlikely in the current environment.

A candid assessment of the 1985 plan, therefore, provides mixed reviews. The most significant initiatives on increasing the strength of the 4th Psychological Operations Group-establishing an enlisted PSYOP MOS, modernizing PSYOP-unique equipment for both active and reserve component units, and undertaking detailed PSYOP contingency planning in support of the unified commands-were all undertaken by the Army in the early 1980s, prior to the 1985 plan. To be sure, the plan provided additional emphasis to help bring these initiatives to fruition, but the initial impetus came from

the Army. Improvements undoubtedly occurred in the formulation of joint doctrine, indoctrination of the officer corps, and staff planning, but these areas still require attention. And the two truly revolutionary themes of the original master plan—separation of PSYOP from special operations and creation of a joint PSYOP center—did not become a reality. In the final analysis, perhaps the greatest benefit to the PSYOP community was the morale-enhancing evidence of senior-level interest, due in large part to the dedication of the late Gen Richard G. Stilwell, USA, Retired, who spearheaded the 1985 plan while serving as the deputy under secretary of defense for policy.

Nevertheless, while the plan's ambitious goals were not fully realized, the revitalization efforts of the 1980s made possible the highly credible performance of PSYOP forces in Panama (Operations *Just Cause* and *Promote Liberty*) and the Persian Gulf (Operations *Desert Shield* and *Desert Storm*). The early integration of PSYOP into military planning for these operations—heretofore all too often a serious deficiency—contributed significantly to its successful utilization. In both contingencies, PSYOP forces employed a wide range of media, including loudspeaker broadcasts, radio transmissions, posters, and leaflets. Principal PSYOP objectives were to (1) cause the enemy to cease resistance and surrender, (2) solicit information and the turn-in of weapons, (3) inform civilians and keep them out of the battle areas, (4) establish a favorable image of friendly forces, (5) deflect hostile propaganda, and (6) support civil affairs units in emergency relief and consolidation activities. Overall, the goal was to enhance combat operations and reduce casualties on both sides. Successful accomplishment of this goal would have been doubtful without the increased personnel strength of the 4th Psychological Operations Group and the modernization of equipment for both active and reserve component PSYOP units brought about by revitalization.⁴

Thus, the revitalization of military PSYOP capabilities that took place during the 1980s was fueled by a presidentially inspired public perception of the common threat (i.e., the Soviet Union), a "defense consensus" which enabled massive increases in military budgets, several key Reagan administration national security directives that provided impetus for DOD, and the "top-down" emphasis of Secretary Weinberger

and a few key advisors which resulted in the 1985 DOD PSYOP Master Plan.

The Changing International and Domestic Environment

A comparison of these earlier conditions with the present environment provides some rather stark contrasts. The most dramatic change has occurred in the American public's perception of the threat.

An important stimulus for this change in attitude was the emergence of Mikhail Gorbachev as Soviet leader in 1985. His domestic political and economic reforms, the withdrawal of troops from Afghanistan, the cessation of "Voice of America" jamming, his announced intention to reduce Soviet military forces by 500,000 men and cut their budget by 14.2 percent, and the intermediate nuclear forces arms control agreement were just some of the actions that helped to lessen international tensions. Polling data of US public attitudes depicted a startling change in just over a two-year period; by July 1988, 94 percent of voters believed that US-USSR relations were stable or getting better. Mr Gorbachev's policies led Margaret Thatcher to conclude in November 1988 that the cold war had come to an end.

If onlookers thought Thatcher's conclusion a bit premature, they should consider that the subsequent years have been truly mind-boggling. The dissolution of the Warsaw Pact and the liberation of Eastern Europe, the reunification of Germany and its emergence as a major power, and the disintegration of the former Soviet Union have been revolutionary geopolitical changes that few could have foreseen. Russian Republic President Boris Yeltsin's signing of a historic strategic arms control agreement with President George Bush in June 1992 is only the most recent indicator that the cold war as we knew it has, in fact, ended.

During the same period that these momentous events have occurred in the international arena, Americans have become more preoccupied with domestic concerns. A lingering economic recession and high jobless rate, concerns over the burgeoning federal budget deficit, and deep-rooted problems of

the cities (as vividly seen in the Los Angeles riots) have taken their toll. In February 1992, the conference board's measure of consumer confidence registered its lowest level in 17 years; and in April, four-fifths of Americans surveyed said they believed the country was seriously on the wrong track.⁵ These domestic anxieties, coupled with the absence of a clearly discernible external threat, have led to growing pressures for steeper cuts in the defense budget and in foreign aid. The "defense consensus" of public and congressional support during the early Reagan administration has disappeared.

Thus, the context within which defense planning takes place is in transition, as William Hyland, editor of *Foreign Affairs*, reminds us:

This time the cliché is true: this is a new era, but we are only in the opening phases. It is fruitless to search for a politically correct concept of the national interest to justify American foreign policy. Debating in these categories is itself an intellectual hangover from the Cold War. . . . The US defense posture is only in the preliminary stages of the restructuring that will follow the end of the Soviet threat.⁶

Challenges for Future US Military Psychological Operations

The challenges for military psychological operations are formidable. To be sure, inclusion of PSYOP forces in USSOCOM provides some assistance in meeting these challenges: a four-star proponent (the commander, USSOCOM) and, ostensibly, full participation in the major force program (MFP-11) for SOF. The clout of an assistant secretary of defense (ASD/SOLIC) also should benefit psychological operations at the policy level.

Nevertheless, three broad areas must be addressed if the PSYOP community is to emerge from this period of transition to play a viable role in our nation's security: (1) education of senior civilian and military officials on the value of the psychological dimension; (2) planning for the use of military PSYOP in a changing world; and (3) continued modernization of the PSYOP force structure.

Planning should begin now to ensure that the psychological dimension receives appropriate attention by the new administration-and OASD/SOLIC should play a leading role.

Unfortunately, a loss of momentum has occurred in this area. The national security strategy statements of President Bush (March 1990 and August 1991) placed a much less explicit emphasis on the informational element of national power than did those of Ronald Reagan. The Reagan administration directives that created interagency public diplomacy mechanisms, and that played a vital role in revitalizing DOD's psychological operations, have lain dormant. The NSC has paid little attention to this area.

A review of our national security strategy suggests that OSD, OJCS, and USSOCOM must continue to coordinate their efforts to have psychological operations considered by the NSC. DOY must intensify its efforts to educate new players on the NSC staff and to build allies among the key agencies in order to resuscitate existing national security directives-or create new ones-that provide guidance to psychological operations and public diplomacy activities. To address a long-standing deficiency, DOD sorely needs a senior-level NSC mechanism to integrate and direct the information and psychological operations activities of the various agencies. Such a forum also would provide a vehicle to overcome the differences in operational terminology that have plagued past efforts to integrate interagency planning in these areas.

To meet its needs in a changing world, DOD should undertake once again to update its bilateral agreements with the United States Information Agency (USIA), the Board for International Broadcasting, and the Central Intelligence Agency (CIA). With diminishing budgets almost a certainty, it will behoove these agencies to pool their resources and accomplish common goals in the psychological dimension.

Another major task facing PSYOP advocates after every election is that of educating the new players in DOD. This process should begin after a major turnover of senior civilian officials has taken place. A good vehicle to accomplish this is the DOD PSYOP Master Plan. Inclusion of key advisors in the final staffing of the document would provide an opportunity for them to educate themselves on psychological operations. There is some symbolic value attached to having the secretary of defense sign the master plan: It provides visible evidence of top-down emphasis.

Similarly, a number of DOD directives affecting military psychological operations need to be modified and revalidated. Involving key civilian players in this process would provide an excellent opportunity to educate them about PSYOP. The same holds true for staffing the defense planning guidance and the national military strategy, both of which should follow publication of the president's national security strategy. Indeed, the current national military strategy, published in January 1992, contains no mention of the psychological dimension.

Renewed efforts must be made to indoctrinate the mainstream of the officer corps on psychological operations. High-level emphasis, continuously applied, will be necessary to remedy the long-standing absence of PSYOP instruction in most of PME. Until this is done, OSD, JCS, and USSOCOM should coordinate their efforts and provide annual presentations to the senior service schools and the command and staff colleges. Formation of a traveling team to provide instruction on PSYOP to major commands should be considered. Examples of the successful use of psychological operations in Grenada, Panama, and the Persian Gulf would enhance the learning experience for commanders and staff officers. PSYOP should be integrated into computer-assisted war games and simulations. High-quality articles on psychological operations in professional military journals would help to publicize the successful use of this valuable force-multiplier. Institutionalization of military PSYOP will take root only when commanders are convinced that it is indispensable to combat effectiveness.

This education process must continue with planning for the utilization of military psychological operations. This will be a critical task during a period in which there is no apparent clear consensus about either US national security interests or the military's post-cold-war missions. Consider these words of Paul Hammond:

Where strategy used to be something that we could think of as a plan to be executed, now it must be increasingly a set of capabilities for dealing with contingencies. Where strategy once was a matter of inventing the future, now it is increasingly a matter of adapting to it. ⁷

This, of course, is what our present National Security Strategy and National Military Strategy attempt to provide: a broad focus, regionally oriented, and a "base force" to deal with an uncertain and rapidly changing world.

Within this context, military PSYOP advocates must demonstrate the applicability of psychological operations in all environments: support of conventional forces, low-intensity conflict, and special operations forces. Similarly, military PSYOP can play a valuable supporting role in the peacetime activities of the CINCs and other government agencies, such as the USIA and CIA.

First priority, however, must go to planning military PSYOP that will assist the unified commands-the combatant commands-and the conventional forces assigned to support them for various contingencies. As the military services reduce in size and units are withdrawn from Europe, a major realignment of Army PSYOP forces to other unified commands will take place. The CAPSTONE program provides an excellent vehicle to link these forces to the combatant commands for planning and participation in exercises. As the unified commands identify their priorities for contingency planning-a process of "emerging missions" that is likely to go on for some time-the PSYOP community must be alert to offer their services early on. In many cases, existing regional analytical studies will require revision, or the development of new ones, to provide the foundation for detailed PSYOP planning. Finally, supporting PSYOP plans should anticipate the new contingency plans of the unified commands and their assigned forces.

In addition to planning for mid- or high-intensity conflicts, the PSYOP community must plan for, and be prepared to participate in, peacetime and low-intensity conflict requirements. These requirements may include humanitarian assistance, peacekeeping, disaster relief, counterdrug operations, civic action, unscheduled studies and assessments oriented to crisis areas, advisory mobile training teams for the military forces of friendly nations, staff assistance to unified commands, counterterrorism, foreign internal defense, and support for DOD and non-DOD agencies. PSYOP forces-indeed, all special operations forces-provide versatile capabilities for

the National Command Authority to consider in the uncertain future environment.\$

Closely related is this major challenge: to continue modernization of the PSYOP force structure in terms of both personnel and equipment. For the PSYOP community, the corollary to Army Chief of Staff Gordon Sullivan's oft-quoted "no more Task Force Smiths" is "no more Tactical Information Detachments" (the only operational psychological warfare troop unit in the US Army when the Korean War erupted in June 1950; it consisted of two officers and approximately 20 enlisted men). In the face of continued pressures to reduce even more the size of the military, strenuous efforts must be made to avoid the fate experienced by the PSYOP community after every major conflict in this century. As recently as the early 1980s, the 4th Psychological Operations Group consistently reported the lowest readiness ratings in both personnel and equipment-and many reserve component units lacked items vital to mission accomplishment, including loudspeakers. This oversight must not recur.

In particular, the modest-but crucial-gains in personnel strength by the 4th Group during the revitalization of the 1980s must be preserved; the bulk of requirements for support of peacetime activities and low-intensity conflict will necessarily fall upon the active component. Over the long term, the key to military PSYOP viability will be the health of the Army's functional area for psychological operations (FA 39B). Continued high-level emphasis is needed to attract quality officers for this specialty, to provide them with excellent training, and to offer sufficient field grade billets for their utilization and career advancement.

The modernization of PSYOP-unique equipment undertaken in the 1980s, while beneficial, still has not been completed. The replacement for the TRT-22 radio, in particular, needs to be fielded. New loudspeakers are needed. Modernization, however, should be an ongoing process; emphasis needs to be placed on developing more mobile equipment for the future.

Being assigned to USSOCOM should help the PSYOP community in its perennial battle to obtain a proportionate share of dwindling resources or, put another way, to ensure that they do not suffer a disproportionate share of reductions.

However, a speedy resolution of whether or not military PSYOP will fully participate in MFP-11 for special operations forces is needed.

At the same time, the PSYOP community must demonstrate a fiscally responsible attitude by making maximum use of existing resources. This usage includes not only continued reliance on the reserve component for mobilization in mid-and high-intensity conflicts, but also in investigating ways in which specially trained reservists can be used to augment active component units for peacetime and low-intensity conflict requirements. Establishment of redundant capabilities should be avoided. For example, in the absence of a joint PSYOP center in the Washington, D.C., area, the 4th Psychological Operations Group's regional analysts should provide maximum support to the JCS and OSD PSYOP offices in neither of which have area experts been assigned. The use of new technologies to enhance military psychological operations capabilities without increasing personnel requirements also must be pursued. Overall, the keys will be cost-effectiveness and the utility of military PSYOP in both peace and war.

Summary

US interest in military psychological operations during this century has been episodic, basically rising and falling during and after major conflicts. The Reagan administration interrupted this pattern by providing the impetus for a revitalization of US military PSYOP during peacetime. The international and domestic conditions that made this possible have changed significantly, however, and the PSYOP community faces formidable challenges in maintaining a viable capability for an uncertain future. To address these challenges, emphasis must be placed on educating senior civilian and military officials concerning the value of psychological operations, on aggressive planning to support the emerging contingency and peacetime missions of PSYOP within the unified commands, and on continued modernization of the PSYOP force structure.

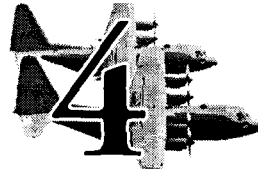
After having prevailed in the battle to gain control of military psychological operations forces and policy, the commander in chief, USSOCOM, and the assistant secretary of defense for

special operations and low-intensity conflict must play key roles in facing these challenges. For their part, the PSYOP community must demonstrate fiscal responsibility, maximum utilization of existing resources, and continued professionalism in accomplishing new missions. Working together, the goal of both the PSYOP community and its special operations leadership should be to ensure "no more Tactical Information Detachments" during this period of transition.

Notes

1. See Alfred H. Paddock, Jr., U.S. *Army Special Warfare: Its Origins* (Washington, D.C.: National Defense University Press, 1982), 12.
2. Ibid., 143.
3. Ibid.
4. Dennis P. Walko, "Psychological Operations in Panama (Just Cause and Promote Liberty)"; Frank L. Goldstein and Daniel W. Jacobowitz, "PSYOP in Desert Shield/Desert Storm," in US Special Operations Command unpublished manuscript *"Psychological Operations: Principles and Case Studies"* May 1992, 45.
5. Norman J. Ornstein, "Foreign Policy and the 1992 Election," *Foreign Affairs*, Summer 1992, 3f.
6. William J. Hyland, "The Case for Pragmatism," *Foreign Affairs*, American and the World, 1991-1992, 42f.
7. Paul Y. Hammond, "The Development of National Strategy in the Executive Branch: Overcoming Disincentives" in *Grand Strategy and the Decisionmaking Process*, ed. James C. Gaston (Washington, D.C.: National Defense University Press, 1992), 16.
8. For a more complete discussion of the versatility of SOF, see Carl W. Stiner, "U.S. Special Operations Forces: A Strategic Perspective," *Parameters*, Summer 1992, 2-13.

Blending Military and Civilian PSYOP Paradigms



Col Benjamin F. Findley, Jr., USAFR

This article compares and contrasts the concepts, philosophies, processes, strategies, and major elements of the civilian business marketing system (BMS) with the military PSYOP system. The purpose is to inform the reader of the many similarities and successful applications of proven BMS approaches, both macro and micro, and how they relate to strategic and tactical objectives in PSYOP scenarios. The goal is to improve the reader's understanding that integrating the effective practices of civilian marketing systems into the military PSYOP sector is very important. A related goal is to offer recommendations.

In a business firm, marketing generates revenues by persuading specific customers to do something. Whenever you try to persuade somebody to donate to the United Way, refrain from littering the highways, save energy, vote for your candidate, or buy your service, you are engaging in marketing. The challenge that faces the BMS is to generate those revenues and results by satisfying a targeted customer and making a profit in a socially responsible manner. Since every aspect of our lives is affected by business marketing practices, often in ways we do not even consider, we need to understand the basic principles and concepts of effective marketing. Then we need to apply them to PSYOP.

Business Marketing Philosophy

The American Marketing Association defines marketing as "the process of planning and executing the conception, pricing, promotion, and distribution of ideas, goods, and services to create exchanges that satisfy individual needs and

organizational objectives." Inherent in this definition is an exchange process where two or more parties give something of value to one another to satisfy felt needs. The marketing function, simple and direct in subsistence-level economies, is more complicated in industrial societies. Nevertheless, the basic concept of exchange is the same. To understand the BMS philosophy, we must distinguish between a sales orientation and a marketing orientation. A sales orientation assumes that customers will resist purchasing products and services not deemed essential and that the task of selling is to convince them to buy something even if they do not need it. It is a "push"; effort, focusing on selling after the product exists.

A marketing orientation is different-it begins with the customer and integrates marketing into each function of a business. Marketing will initially establish what the customer wants and needs; it should play a lead role in planning, coordinating, and directing the organization's activities. It certainly does involve selling, but only after the customer's need has been established. If the marketing job has been done well, the customer doesn't need much persuading.

Military Psychological Operations Philosophy

Military PSYOP is a specialized field of persuasive communications. It involves formulation, conceptualization, implementation, and evaluation of government-to-government and government-to-people persuasion. It is a planned use of human actions to influence the attitudes of populations that are important to national objectives. Lt Col Philip Katz, USA, Retired, emphasizes that the critical variable in military PSYOP is that of influencing the perceptions, and thereby the will, of foreign populations. PSYOP can modify the opinions, emotions, attitudes, and behaviors of a target audience. It can be directed at enemy forces to demoralize, disorient, and confuse them. It can induce defection, encourage dissident elements, and reduce combat effectiveness by adversely affecting the enemy's discipline and command and control functions. Directed toward neutral or friendly target audiences, it can be

used to unite them, boost their morale, and provide information designed to foster their understanding and cooperation.

To enhance the total opportunity for success, PSYOP must be integrated into, and considered in, all military decisions. Certainly, PSYOP planning should be concurrent with-and coordinated with-all operational planning. A few commentators imply that there is some nefarious objective and some element of deliberate misinformation involved in PSYOP. Therefore, it is important that the public understand the truth: the United States government does *not* engage in public disinformation activities!

Business Marketing Process

A company's complete marketing system consists of many processes and variables, some controllable and some uncontrollable. *Marketing mix* is the term that describes the combination of the four main controllable inputs that constitute the core of a company's marketing process: (1) the product or service, (2) the promotional activities, (3) the distribution system, and (4) the price structure. Each input has its own process, with key decisions to be made and activities to be accomplished.

The product mix involves policies, procedures, services, and activities related to the product lines to be offered, the markets to sell to, and the degree of product differentiation. The product mix also involves decisions about which product quantities to offer with which brands, in which packages, where, and when.

The promotion mix process begins with an analysis of the organization's overall mission, from which specific promotion objectives are determined. The promotion process consists of decisions and activities related to advertising, personal selling, publicity, and sales promotion. Activities include analyzing the promotion's target audience; selecting appropriate themes and symbols, following market segmentation strategies; deciding on the optimal blend of print, broadcast, and other media; setting sales quotas; conducting message pretests; and analyzing selected characteristics of the target market. Motivation, perception, attitudes, opinions, and stress are

considered. The promotion mix directly relates to the military PSYOP process and will be addressed later.

The distribution mix involves decisions about transportation, storage, and inventory. It also includes decisions about the type, quantity, and quality of wholesalers and retailers required.

The price mix includes methods for setting the right base price for a product. Discounts, allowances, markups, break-even points, and pricing strategy are elements of the price mix.

Aside from these four controllable elements in the marketing mix, the manager must be concerned with uncontrollable forces in the environment. Marketing is affected by cultural factors, laws, economic conditions, competition, technology, and demography, none of which are controllable; neither are the firm's microenvironment of suppliers, marketing intermediaries, and customers.

Military Psychological Operations Process

Psychological operations can be divided into three general categories: strategic, operational, and tactical. Strategic psychological operations are conducted to advance broad or long-term objectives designed to create a favorable global environment for military operations. Operational PSYOP seeks to achieve midterm objectives in support of regional campaigns and major theater operations. Tactical psychological operations are conducted to achieve short-term objectives against an enemy force, in direct support of tactical units. According to Field Manual 33-1, Psychological Operations, the mission of PSYOP forces is to support conventional as well as special operations forces at all levels of war and within all degrees of the conflict spectrum-low intensity, midintensity, and high intensity. Overlapping missions and objectives can blur the distinction between the categories of PSYOP.

Propaganda development for PSYOP involves a multistep process that is very similar to the promotion mix process for the BMS. Initially, the unit's mission must be analyzed so the military PSYOP mission can be derived. Information must be collected and the target must be analyzed. Just as in the business promotion process, the vulnerabilities and susceptibilities

of the target audience are key factors. Appropriate themes, symbols, and media are selected, and propaganda messages are developed and pretested. Campaign approvals are acquired, propaganda is disseminated, and the impact of the psychological objective is assessed according to specific indicators.

Just as there are strategic, operational, and tactical levels of military PSYOP, there are corresponding levels in marketing planning. Louis E. Boone and David L. Kurtz define strategic marketing planning as "the process of determining the primary (long-term) objectives of an organization and the adoption of courses of action and the allocation of resources necessary to achieve those objectives." Tactical planning in marketing focuses on the implementation of short-term plans that must be completed near-term to implement overall strategies. Boone and Kurtz emphasize the necessity of adequate resource allocation in tactical planning. Certainly, this necessity should be recognized by military PSYOP planners.

Cultural Differences

The marketing manager in business and the military PSYOP specialist must understand a variety of influences on the promotion and persuasion processes in trying to satisfy the needs and wants of the target audience. Culture is at once the most basic and the broadest environmental determinant of individual behavior. Culture is comprised of values, ideas, attitudes, and other symbols that shape human behavior. The influence of culture is difficult to define because so many crucial elements are hidden from the participants of the system itself. Cultural patterns often exist as unrecognized assumptions that are taken for granted. Culture affects how and why people live and behave as they do, which affects the target audience's susceptibility to promotional themes and their buying/ accepting behavior. America has many ethnic, religious, racial, and economic groups, each of which has its own cultural values. And each of these groups has sub-cultures with norms and values that are used to define meanings and to specify needs and wants. Thus, individuals respond uniquely to persuasive messages and appeals.

Persuasive messages in military PSYOP and in business marketing must use symbols and themes that are easily recognizable and meaningful to the culture they are trying to reach. A key persuasion guideline is that one should not substitute one's own judgment and cultural values for the values and cultural characteristics of the audience being targeted. No market has been more frustrating and difficult for American business marketers than the Japanese market. Japanese culture has produced marketing institutions and promotional relationships that differ from those found in the United States.

While leading some university students on an industrial tour of Japan in 1981, for example, I found that the food distribution system there was different from that in the United States. Japanese wholesalers, unlike their US counterparts, are specialized sellers. They do not carry a complete line of products for a select group of stores. Instead, they carry a select line of noncompetitive products that they supply to all supermarkets. Japanese wholesalers take great pride in supplying all retail stores with an exclusive but narrow product line. The goal of American wholesalers is total distribution of a complete product line to a captive set of stores; the goal of the Japanese wholesaler is distribution of a limited set of products to all retail outlets. Culture is a major influence on marketing and PSYOP.

Social Influences

The social groups to which people belong or aspire -to belong help explain why they buy certain types and brands of products, shop in one type of store and not another, accept and believe certain ideas and persuasive messages, and spend their money in certain ways. A person's social class is a major influence on his style of life and an important factor in determining his social and economic behavior. A social class is a group of people whose members are nearly alike in terms of a characteristic that is valued in their group and that clearly differentiates them from others.

PSYOP specialists and promotion managers must be aware of social class influences on the acceptance of ideas and the

willingness to behave a certain way. Different persuasive appeals, different copy, different art, and different media may be needed to promote the same product to different social classes. An upper-middle-class wife may want products, ideas, and brands that are clear symbols of her social status. She may be highly susceptible to preselling through mass media. Conversely, a lower-lower-class wife may buy largely on impulse and may be influenced by point-of-purchase promotion materials. She may not care to read much, and the broadcast media may be of great importance in communicating with her.

When social influences are combined with foreign culture influences, we see how difficult it is to understand needs and behaviors well enough to persuade an individual to accept a PSYOP message. One way to exert influence on a social class in a culture is to identify and target opinion leaders. They are chosen on the basis of expertise as well as social position. Exposure to mass media is significantly greater among opinion leaders than among nonleaders-and mass media directly influence opinion leaders. It is important to note that opinion leaders are far more effective in securing opinion changes among followers than are the mass media. Thus, it is important in PSYOP as well as in marketing to identify and aim persuasive messages directly at opinion leaders.

Family Influences

An individual is born into a family and inherits a certain social status. That status remains until he becomes an adult. Of all face-to-face groups, a person's family plays the strongest role in basic value and attitude formation.

Early family training is not cast off easily; it remains to affect one's individual values, ideas, and behaviors. Even as the adult individual strives to acquire the prestige symbols of another class, latent family influences remain to sway acceptance of ideas and products. Most buying decisions and idea acceptances are made within a framework of experience developed within the family.

Needs and Motives

Personal determinants of behavior include needs, wants, motives, and self-concepts. All of these variables combine with the previously presented interpersonal and group factors to influence one's acceptance of an idea or purchase of a product. People have a need when they lack something useful, required, or desired. When a few needs are fairly well satisfied, others emerge. Some say needs are insatiable, incapable of ever being fully satisfied; thus, PSYOP specialists and marketers do not have to satisfy one need before progressing on to other needs. Several needs at several levels can be present concurrently to influence an individual's behavior, but this approach complicates the prediction of behavior. Abraham H. Maslow proposed a hierarchy of needs that includes the most basic: physiological, safety, social, esteem; and the highest: self-actualization. Motives are inner states that direct people toward the goal of satisfying a felt need. Examples of motives include high quality, conformity, low price, performance, ease of use, long life, prestige, friendship, the opposite sex, and a desire to be different.

One's self-concept includes feelings, perceptions, and evaluations of oneself as a person. How one perceives and evaluates one's own status in relation to others in the same social class and reference groups-and to one's own levels of aspiration-are prime forces in shaping one's self-concept. The self-concept is learned; it emerges through experiences with the environment and through interactions with other people. By observing socially acceptable and unacceptable behavior and comparing one's own behavior to them, one lays the basis for one's own self-concept. The self-concept is useful in PSYOP and marketing because, through their actions and purchases of products, individuals let others know who they are and what they hope to be or to do. The purchase of goods and the expression of ideas serve as social symbols that communicate meaning. The behavior of an individual will be directed toward enhancing his self-concept through the consumption of goods and the expression of ideas as symbols, allowing a prediction of events.

Perceptions and Attitudes

Everything a person knows about the world and what it contains comes from perceptions. Perception is the reception of stimuli through the senses and the attachment of meaning to them. Sound, light, odor, taste, and pressure are received by one's sensory receptors-ears, eyes, nose, tongue, and skin. These sensations are translated into perceptions that are altered by previous learning, beliefs, values, and attitudes, and then organized into meaningful concepts. People perceive things that make sense within the context of their beliefs, values, attitudes, and experiences. Since we cannot possibly perceive all stimuli at any given time, our perceptions are highly selective and subjective; we see what we want to see and hear what we want to hear. Further, if we do not like what we perceive, we often distort or modify it.

Mass-marketing messages and PSYOP messages are based on selective perception. Because a large number of persuasive messages are directed at different target audiences, PSYOP specialists and marketers must carefully test the messages to be employed with representative targets. They must make every effort to ensure that the various target groups perceive the messages that were intended.

Attitudes are predispositions to respond in particular ways toward people, ideas, activities, or things. An attitude is not neutral; rather, it is for or against some person, object, or idea. An attitude is composed of three dimensions: cognitive (factual information), affective (feelings and emotions), and behavioral (tendencies to behave in a certain way). Attitudes affect both perception and behavior, and people resist changes in their attitudes. The more closely an attitude is related to one's self-concept, the greater will be one's resistance to changing it.

To change an attitude, a PSYOP specialist must (1) provide new information to enlarge and change the cognitive dimension; (2) attack the affective dimension of the attitude by associating the end-state of change with the desirable consequences that result; and/or (3) induce the person to engage in "attitude-discrepant" behavior (behavior that contradicts held preferences). Successful attitude-change approaches include using a trustworthy and credible source, drawing

conclusions for the target, repeating the message, and using both one-sided and two-sided messages.

Successful and Unsuccessful Business Marketing

Businesses spend several billions of dollars each year on marketing, a fact that indicates the importance they place on it. According to an *Advertising Age* article, the top 100 firms spent more than \$34 billion in 1989 for advertising. Advertising represents 'about 20 percent of total marketing expenditures. The top 10 advertisers spent more than \$10 billion for advertising alone in 1989. Those companies have been successful. Failures do occur, however. A 1988 *Advertising Age* report, for example, lists these \$100 million failures: Campbell's Red Kettle Soups, Ford's Edsel, DuPont's corfam, Hunt's flavored ketchups, and Gillette's Nine Flags Cologne.

Newspapers account for the largest annual advertising expenditure (\$31.2 million in 1988). Other 1988 expenditures: television (\$26.1), direct mail (\$21.2), radio (\$7.7), and magazines (\$6.1). Use of advertising, however, does not guarantee success even if it is planned and implemented well. A key reason is that most people do not systematically process the information they receive through the marketing message. We are largely emotional, influenced by testimonials and emotional appeals-we do not logically consider pertinent criteria when we purchase products. It seems we are more influenced by the skill, appearance, and character of the presenter than the content of the message. A 1988 *Advertising Age* survey mentioned three of the most powerful ads in US history: Volkswagen's "Lemon," Marlboro's "Country," and Coca-Cola's "Real Thing." Aside from getting commitments from dealers to carry the product, the Coca-Cola ad was successful because it capitalized on the affective domain and the unsystematic emotional responses of people. A critical conclusion for PSYOP specialists and marketers is that the ad created a psychological idea of a unique and better taste. It focused on image and emotional themes through heavy repeat advertising and readily identifiable names, symbols, and packages. It also

linked abstract, beneficial images to the physical product-the implied associations of Coca-Cola with youth and authenticity.

Business Marketing Models

Marketing lessons can be learned from business failures as well as from effective marketing models. Burger Chef did not realize that economic conditions are major factors, did not adapt to changing consumer preferences, and did not meet target market expectations. Coors did not recognize changes in the environment that necessitated adjustments in marketing strategies' and did not take the time to continue developing an image of quality and great desirability. The World Football League lost credibility by taking actions counter to prior promises and by not paying strict attention to environmental variables.

After analyzing five leading models of consumer behavior, I have blended optimal elements from each to suggest a marketing model for the buyer's decision process. The model focuses on systematic thinking and defining relevant elements for making a buying decision. It attempts to explain the progressive process that a consumer might experience in buying products or accepting ideas. PSYOP specialists and marketers can anticipate effective messages if they understand the process through which buyers can progress. They can then address those messages to bring about the desired change in behavior. My buyer decision model is like any scientific problem-solving model except that it focuses on buyer behavior. It consists of five stages: problem recognition, information gathering, alternative evaluation, the decision to buy, and postpurchase evaluation. Initially, the target consumer recognizes a problem because of inadequate supplies, changing needs, or other internal or external activities. This first stage forces buyers to succinctly state the problem based on specific unfilled needs. Then the second stage begins the planned search for specific, relevant, and identical information on all possible products. Buyers must weigh the pros and cons of the various products based on a set of criteria during this third stage. In the next stage, they make the decision that best meets their needs and wants, and that satisfies the

expectations of influencers in their social groups. The fifth and final stage is the evaluation of that decision; it should not be omitted.

Effective Objectives

Specific marketing and promotion-persuasion objectives, based on the organization's general goals, should be established. Clearly stated objectives should exist for each promotion tool so that results can be measured against them. Advertising, personal selling, publicity, and sales promotion functions should have specific expected objectives that are measurable. Print, broadcast, and audiovisual media should also have specific objectives. Marketing objectives should meet certain criteria and should be built on a solid foundation of research that reveals what the targets want to buy. The objectives should be stated in terms of target benefits-and in quantitatively measurable terms. They should help attain and reinforce the firm's overall objectives, and they should be reviewed periodically.

The Ethics of Persuading

Many critics of marketing contend that persuasion is really manipulation-or even control-of consumers, unethically coercing them into buying products they do not want. Is it immoral to arouse fears of inadequacy to sell an antiperspirant? Is it wrong to use reference-group concepts to make a product more appealing? Is it improper to design products and appeals that enhance a buyer's self-concept in order to gain a sale? Some observers argue that embellishment and distortion are legitimate and socially desirable activities and that illegitimacy enters the picture only if there is falsification with larcenous intent.

That argument notwithstanding, however, truth is the best persuasion approach; it should be the fundamental principle in both business marketing and military PSYOP. Truth, which is basic to strategic peacetime foreign policy, should be our fundamental guideline. The ultimate questions concern "What is the truth?" and "Can consumers really be convinced to buy something they do not want?"

Target Market Analysis

Target market analysis is performed every time a marketing or PSYOP campaign is developed. It includes selecting a target, determining conditions that affect the target, analyzing target vulnerabilities, specifying target susceptibilities, formulating the persuasive objective, determining target effectiveness, and assessing campaign impact indicators. Once the conditions and vulnerabilities of the Iraqi soldiers were identified in the Persian Gulf War, individual susceptibilities for each vulnerability were specified. Because the coalition's bombing campaign was effective, the Iraqis had needs for food, shelter, water, medical attention, and basic safety. They were, therefore, driven to respond in an expected way. Target market analysis is key to successful marketing and PSYOP.

Recommendations

My recommendations, which are based on my own analysis, are intended to serve as suggestions for improved business marketing and military psychological operations. They emphasize the transfer of proven marketing and promotion strategies, concepts, and techniques from the civilian business marketing system to the military PSYOP system.

- A primary recommendation is to accept the marketing orientation (as opposed to a sales orientation). The marketing orientation begins with the customer's needs and wants, then integrates marketing into each function of the business to design the desired product. (The sales orientation focuses on the product characteristics and attempts to sell the existing product.)**

Both PSYOP planning and marketing planning should be concurrent with, and coordinated with, all operational planning. Together, they should address the target audience's needs in any given situation. This relates to the function of PSYOP as a force multiplier in all types of military activity.

- Another recommendation is to ensure that marketing and PSYOP support all operations, to include production and finance in business or conventional and special operations in the military. This support should be for all levels of business**

operations and all levels of war-strategic, operational, and tactical; low intensity, midintensity, and high intensity.

- **A commensurate resource and budget commitment to support adequate PSYOP and marketing is required so that PSYOP and marketing can be integrated into all operational planning. It is an absolute necessity that military PSYOP and business marketing planners understand the level of resourcing necessary to conduct a successful campaign; under-capitalization may doom an otherwise promising organization to failure.**

- **The business community and the military services must accept culture as the most basic environmental determinant of individual behavior, and they must gather sufficient quantitative and qualitative information about it. Individual judgment and cultural values should not be substituted for those of your target audience.**

- **PSYOP specialists and marketing managers must be aware that social-class membership influences the acceptance of ideas, the willingness to behave a certain way, and the need to use different persuasive techniques and concepts.**

- **Persuasive messages should be aimed directly at opinion leaders; they are far more effective in securing changes among followers than are the mass media.**

- **It is important to make maximum utilization of family influence; research shows that it plays the strongest role in basic value and attitude formation.**

- **The PSYOP specialist and the business marketer must know the various needs of individuals and the corresponding specific persuasive appeals that can be employed to influence each need.**

- **Marketing and PSYOP professionals must recognize the dominant influence of the self-concept-and how consumption of goods and expression of ideas are directly based on that concept and on selective perception. They must understand the main behavioral dimensions of attitudes, so that appropriate techniques can be employed to change them.**

- **My final recommendation is an all-encompassing one. It refers to the need to educate our military and civilian leaders about marketing philosophy and psychological operations (as a unique weapons system). Also, managers and specialists**

already employed in the field need tactical training. The professional military education service school system should include courses designed to improve the awareness and understanding of PSYOP. The primary goal would be to enhance the understanding of strategic PSYOP and marketing, their benefits and long-term capabilities, and their applications in support of our national objectives.

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PART II

National Policy
and
PSYOP Planning

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Introduction

This section presents articles about recurrent psychological issues and roles in formulating and implementing our national policy, objectives, and strategy. The authors explain historical and contemporary elements of the national policy process in **PSYOP** and the framework within which national **PSYOP** policy is formulated, administered, and implemented.

Dr Carnes Lord explores the historical influences on developing effective US strategy, doctrine, and organizational structure for the conduct of psychological and political warfare. While accepting that a psychological-political component is inherent in every use of the diplomatic, economic, and military instruments of national power, he urges a rethinking of the role of political and psychological factors and a revitalization and integration of their capabilities into US national strategy. Dr Lord analyzes the influences of American cultural inhibitions and the media on psychological conflict.

Michael A. Morris reminds us that national policy objectives must be clearly defined so that military objectives and strategy can be precise. He emphasizes that clarification of political objectives is the responsibility of political leaders rather than military leaders. Morris concludes that propaganda advantages can be gained through clearly stated political objectives. He suggests guidelines for distinguishing clear political objectives from vague ones.

William F. Johnston focuses attention on psychological operations as a vital instrument in national liberation wars. He believes governments of countries threatened with insurgency should regard **PSYOP**, particularly face-to-face communications, as a first line of internal defense-the Vietnam lesson. He also wants more recognition of **PSYOP** as a major instrument of low-intensity conflict and the elevation of **PSYOP** planners to "first-team" status.

Lloyd A. Free examines the role of public opinion and the psychological dimension in international security affairs. He believes that while public opinion cannot be slavishly followed, psychological data should be collected and analyzed so that government can take this factor into account in planning.

Lt Col Philip K. Katz, USA, Retired, Ronald D. McLaurin, and Preston S. Abbott include a critical analysis of US PSYOP. They focus on the communications aspect of international relations and PSYOP, identify and assess the principles and critical developments in this field, and advance ideas for progress. They stress that intelligence is the most commonly overlooked prerequisite to effective PSYOP. Their focus on evaluating the effectiveness of PSYOP challenges the reader to systematically concentrate on results. This article is clearly a historical piece that sets the groundwork for producing effective PSYOP.

The Psychological Dimension in National Strategy

Dr Carves Lord



To recall the time when psychological-political warfare was widely, acknowledged by Americans as an important instrument of national strategy requires a certain effort of historical imagination. Such was indeed the case, however, from the early days of the Second World War until the mid-1960s. The experience of World War II convinced many American political and military leaders that the psychological dimension of conflict had become critical in the contemporary world.

Totalitarian regimes that employed modern communications technologies to specialize in ideology and subversion constituted a qualitatively new strategic problem for the West. The postwar years witnessed an outpouring of academic studies in this area, most of which took for granted the necessity and legitimacy of a vigorous American response to the emerging political-ideological threat posed by the Soviet Union and the international communist movement.'

The US government allowed its propaganda, and political warfare capabilities to wither in the years of rapid demobilization immediately following World War II. Creation of the Central Intelligence Agency (CIA) in 1947, however, provided a fresh impetus and an organizational vehicle for covert psychological operations and political action in peacetime. The deteriorating political situation in Western Europe in the late 1940s created urgent objectives for the CIA's covert action directorate.

The coming of the Korean War stimulated improvements in US overt capabilities as well. In 1950, President Harry S Truman created the Psychological Strategy Board in the White House to provide a high-level focus for government-wide

activities in this area. The new International Information Administration was established within the State Department; military psychological operations were given new life (the Army established the Psychological Warfare Center at Fort Bragg, North Carolina, in 1952); and the Psychological Operations Coordinating Committee attempted to provide operational coordination among the various involved agencies.² President Dwight D. Eisenhower moved to create the US Information Agency (USIA) as an autonomous agency reporting directly to the National Security Council.³

It can be questioned whether the US government as a whole was able, in the 1950s, to develop an effective doctrine and organizational structure for the conduct of psychological and political warfare. Sharp differences of opinion existed over fundamental questions of strategy toward the Soviet bloc and over the roles of key agencies such as CIA and USIA-and coordination among the agencies left much to be desired.⁴

It could perhaps be argued that militarization of the Vietnam War was the key factor underlying the progressive atrophy of US political warfare capabilities after the mid-1960s. However, it seems evident that larger issues of governmental organization and national style or culture also figured critically in this development. It should have been clear that the assignment of political warfare responsibilities to new agencies would not eliminate-and in certain respects would probably fortify-the sources of bureaucratic resistance to this new instrument of national power.⁵ Finally, mention must be made of the cultural revolution that took place in the United States beginning in the mid-1960s. The shattering of the foreign policy consensus of the postwar decades (a result of Vietnam) meant, in the first place, a questioning of American values and the legitimacy of a leading world role for the United States. Such attitudes could only spell trouble for any strategy that depended on the confident projection abroad of America's political identity and values.

Any attempt to rethink the role of political and psychological warfare in US strategy today must take account of these fundamental and persisting obstacles. Before turning to consider them more systematically, however, it is necessary to sketch briefly the basic features of political and psychological

warfare and their relationships to other instruments of national power.

One problem is the general tendency to use the terms psychological warfare and political warfare interchangeably, not to mention a variety of similar *terms-ideological* warfare, the war of ideas, political communication, psychological operations, and more. The uncertainty of reference derives partly from the fact that this sort of warfare is waged to a considerable extent with weapons that are not truly distinctive. There are indeed distinctive psychological instruments-radio broadcasting, publications of various kinds, and educational and cultural prpgrams-that are capable of communicating information and ideas. But because these capabilities are easier to conceptualize, and to handle bureaucratically, the tendency has been to give them undue weight when it comes to defining the overall phenomenon.

There is a psychological dimension to the employment of every instrument of national power, emphatically including military force at every level. Similarly, major increments of military and economic power necessarily generate political effects. In thinking about psychological and political warfare, the tendency has been to think about the conflict of ideas, ideologies, and opinions. Yet the concept is in fact seriously misleading. Psychological-political warfare is also about cultural and political symbols, perceptions and emotions, behavior of individuals and groups under stress, and cohesion of organizations and alliances.

Using the term warfare to describe US psychological-political strategy in its broadest sense is itself problematic. Psychological-political operations need not be directed only to adversaries; neutral, allied, and semiallied nations potentially constitute highly important targets because our enemies will target them in efforts to break those alliances.

The English language apparently does not include a good term for designating psychological-political operations in their broadest sense. In recent years, and especially since the arrival of the Reagan administration, the term public diplomacy has gained considerable currency in Washington. Public diplomacy appears to encompass three distinct though closely related functions: international information, international political

action (or what may be called overt political warfare), and public affairs. The inclusion of public affairs is a recognition that it is impossible in a modern democracy to separate sharply information communicated to domestic audiences from that communicated to international audiences, but the domestic function associated with public diplomacy differs from traditional public affairs by virtue of its strategic approach and its active effort to shape the domestic political agenda.⁶

The public diplomacy rubric serves a useful purpose, but it is not and was not intended to be comprehensive. Covert political warfare was excluded from its purview from the beginning. Nor does it have any clear relationship to military psychological operations, to educational and cultural affairs, or to the range of US government activities that may be grouped under the general label of international aid and humanitarian affairs.

I would propose, if only for the sake of clarity, the following anatomy of basic psychological-political warfare functions.

Political warfare is a general category of activities encompassing political action, coercive diplomacy, and covert political warfare. In general, the first of these functions is performed by diplomatic personnel, the second by military and diplomatic personnel, and the third by intelligence personnel. Political action refers to a range of activities, including certain kinds of multilateral diplomacy, support for foreign political parties or forces, and support for or work with international associations of various kinds.⁷ Coercive diplomacy refers to diplomacy presupposing the use or threatened use of military force to achieve political objectives.⁸ Covert political warfare corresponds roughly to the covert aspects of what the Soviets called active measures; it includes support for insurgencies, operations against enemy alliances, influence operations, and black propaganda.⁹

Psychological operations, once frequently used in a general sense to designate psychological-political operations as a whole, is probably best reserved for use as a term of art to designate military PSYOP.¹⁰ Military PSYOP can encompass both overt and covert activities in both peacetime and war, and its scope can vary from the tactical battlefield to the operational

and strategic levels of conflict. Historically, however, US military interest in PSYOP has focused heavily on tactical applications in wartime. Battlefield PSYOP is sometimes distinguished from consolidation PSYOP, which is geared to securing the loyalty and cooperation of civilian populations in combat areas and is closely related to civic action conducted by military forces in low-intensity conflict situations. Another related function is troop information or education, which serves among other things-much like public affairs in relation to public diplomacy-to counter the psychological operations of the enemy.

International communications encompasses international information and international educational and cultural affairs. **USIA performs this range of functions, though other organizations-in particular, "Radio Free Europe/Radio Liberty" but also the Departments of State and Defense-perform information functions of political or strategic importance as well.** 11

A further general category is *international aid and humanitarian affairs*. This category includes foreign economic and development aid, food aid, humanitarian assistance (rescue operations, disaster relief, famine relief, etc.), and technical assistance of various kinds. Many agencies involved in such activities, including the Defense Department, the Agency for International Development, and the Peace Corps, are organizations that have dedicated missions in this area. Although these functions are bureaucratically scattered and very largely autonomous, they have a very important psychological-political component. Whether intentionally or otherwise, they serve as significant instruments of US foreign policy and national strategy.

Finally, to repeat what was said earlier, a psychological-political component is inherent in every use of the diplomatic, economic, and military instruments of national power. The art of negotiation rests on an understanding of individual and group psychology and a sensitivity to cultural contexts. Similarly, the exercise of military command at all levels involves an assessment of the psychological strengths and vulnerabilities of the enemy commander and his forces; deception and surprise are key elements of the military art. A

nation's economic and military strength creates political weight that can be exploited in a variety of ways to advance the national interest.

The impetus for rethinking the role of political and psychological factors in US national strategy has come primarily from the renewed attention given these matters by the Reagan administration.¹² Since 1981, a major effort has been under way to modernize and expand US government capabilities in the area of international communications, particularly radio and television broadcasting.

It remains doubtful that the administration has succeeded in overcoming the obstacles, both internal and external, to a thorough revitalization of US psychological-political capabilities and their full integration into national strategy.¹³ In many respects, the cultural pressures working against such an effort are as strong as-or stronger than-ever. In addition to a kind of generic resistance to such activities on the part of Americans as Americans, there has been a wholesale loss of understanding and support of them among American elites in recent years. But perhaps equally troublesome is the resistance stemming from the national security bureaucracy itself and from the continuing weakness of integrated strategic planning and decision making at the national level.

Painful as it may be to face squarely the question of American cultural inhibitions in the area of psychological-political conflict, the effort is necessary-in order not only to develop intelligent approaches for dealing with them but also to achieve cultural self-consciousness, which is essential for effective participation in this kind of conflict. It is essential because Americans tend to assume that people everywhere are much like themselves, with similar fundamental motivations and views of the world. But blindness to differences in national characteristics is apt to be a fatal handicap for anyone attempting to affect the psychological orientation and political behavior of foreign audiences.

Perhaps the most severe single limitation in the American outlook is its tendency to discount the relevance of nonmaterial factors such as history, culture,, and ideas. Americans tend to assume that concrete interests such as economic well-being, personal freedom, and security of life and

limb are the critical determinants of political behavior everywhere. It is an interesting irony that such a view is so prevalent in a country as fundamentally idealistic as the United States while the importance the Soviets attributed to ideological factors stands in some tension with the materialistic basis of Marxism.

Connected with this emphasis on material considerations is the fact that Americans, unlike many peoples, are uncomfortable with personal confrontation and argument and do not customarily debate political and ideological questions in their private lives. Americans tend to look on the political realm as an arena not of conflict and struggle but of bargaining and consensus, where strongly held opinions and principled positions and disruptive of the process and to be discouraged. This tendency makes it extremely difficult for Americans to deal effectively in international settings where basic American values are under challenge. Furthermore, American notions of fair play and due process are subject to serious misinterpretation abroad. Americans' insistence on a presentation of both sides of any argument is frequently seen as reflecting a lack of self-confidence. In general, the openness and penchant for self-criticism in American society strike many foreigners as manifestations of weakness rather than strength.

Manifest or latent in the attitudes of many Americans toward the practice of psychological-political warfare is a distaste for any sort of psychological manipulation or deception. The idea that psychological-political warfare is a black art that can be morally justified only under the most extreme circumstances is a derivative of such attitudes. That such activities necessarily involve misrepresentation or deception is in any case far from the truth. (The conveying of purely factual information under certain circumstances can have powerful psychological effects.)

Military psychological operations, such as battlefield broadcasting, have as their primary purpose the saving of lives-enemy as well as friendly lives. Indeed, such activities make both moral and strategic sense. According to the Chinese strategist Sun Tzu, "what is of supreme importance in war is to attack the enemy's strategy. . . . Next best is to disrupt his alliances.... The next best is to attack his army....

The worst policy is to attack cities." As Sun Tzu puts it, "To subdue the enemy without fighting is the acme of skill." In other words, competence in the psychological-political sphere is the essence of a rational approach to war. ¹⁴ Failure to attain such competence within the limits of one's possibilities is a failure that is all too likely to be paid for in blood.

As important as the effect of these general cultural biases is the role of the American media. Developments in the culture and operating style of the prestige media in the United States in recent years have substantially complicated any effort by the US government to engage seriously in psychological-political conflict. Before the late 1960s, it may be argued, a satisfactory understanding existed between journalists on the one hand and American military and government officials on the other regarding the proper scope and limits of press coverage of national security and foreign policy matters. In particular, the press in wartime tended to adopt the national cause and to accept broad responsibility not only for protecting sensitive information but also for safeguarding the morale both of the troops at the front and of civilians at home

Since Vietnam, there has been a dramatic change. ¹⁵ In the general wreck of the national foreign policy consensus resulting from that experience, the media have adopted an increasingly skeptical attitude-not only toward the specific policies and actions of the incumbent administration but also toward many of the fundamental assumptions that had underpinned the global position and role of the United States since World War II. The legitimacy of the American defense and intelligence establishments in particular has been sharply questioned and subjected to scrutiny by the new style of investigative journalism inaugurated by the prestige press. Most significantly, the media ended their deference to and informal cooperation with an incumbent administration in favor of a posture of neutral observer or critic. One result of this shift has been a general refusal to take responsibility for the consequences of media coverage's effect on national security policy outcomes. ¹⁶

This change in media attitudes is worth dwelling on, since the role of the media on the battlefield of the future is likely to decide whether the United States will be capable of conducting

effective military psychological operations. In general, the media now acknowledge a responsibility to avoid jeopardizing the lives of American soldiers engaged in military operations. But they do not recognize an obligation to refrain from publicizing information that demoralizes American troops, reveals aspects of American intelligence or military planning, undermines American diplomatic initiatives, or gives psychological aid and comfort to the enemy. This obligation is denied even though the ultimate effect of such disclosure may be to prolong military operations and cost American lives, not to speak of more generally damaging the international position of the United States and its ability to avoid future conflicts. Nor do the media recognize any obligations with respect to the domestic audience.

Of particular importance in this connection is the wartime role of television. To argue (as media spokesmen regularly do) that television coverage is essential to informed debate on the merits of a particular military action is unconvincing, not to say disingenuous. The information content of TV pictures is typically low or nonexistent, and the emotions such pictures arouse are more likely to defeat than to promote rational discussion. The rapid juxtaposition of death and destruction images torn out of any intelligible context, so common in television coverage of war, inevitably encourages the feeling that the war is futile, immoral, or absurd.¹⁷

Equally harmful is the practice-pursued well beyond the point of abuse by the networks in Lebanon in 1983-of interviewing American GIs on their feelings and views about the situation they happen to be involved in. To portray soldiers (and if they are looked for they will be found) who are confused, inarticulate, naive, or bitter about the reasons why a war is being fought or the way it is being conducted serves no purpose. The immediate danger to morale and the effect on allied and enemy perceptions are only part of the costs of such behavior. As in the case of media obsession with the families of terrorist victims, the effect is to pander to private concerns and emotions and to mobilize them in a way that greatly complicates the pursuit of rational policies by the US government.

All of this suggests that serious thought needs to be given to restricting or even eliminating at least television's presence on

the battlefield of the future, with or without the cooperation of the media. Particularly difficult, of course, is the question of censorship or restraint of the media during limited contingencies or undeclared wars such as Vietnam, Lebanon, or Grenada. Because the stakes in such conflicts are relatively low, the pressures for preserving peacetime rules of media engagement are difficult to resist. Yet it is precisely these conflicts in which the political and psychological element in war is predominant. These conflicts are therefore most directly susceptible to influence by media reporting. Devising acceptable arrangements for limiting media coverage of such wars in the future may well be critical if the United States is ever to engage in them successfully.¹⁸

The American media have also affected the US government's international information programs. Despite the popular image of the "Voice of America" and "Radio Free Europe/Radio Liberty" as propaganda organs fully comparable to "Radio Moscow," they have been profoundly affected by the American media's evolution over the last two decades, as well as by the general cultural climate these media have reflected. Objectivity and balance as understood by the new journalism have become the standards for these radios as well. The point here is not that a balanced treatment of American or Soviet virtues and vices is not in some sense desirable, but rather that the domestic cultural context shapes-to an unhealthy degree-the aims and methods of the US international radios.

The effective conduct of psychological-political warfare by the United States is perhaps more immediately constrained by bureaucratic and organizational weaknesses within the US government itself. There is a connection between the inadequacy of US psychological-political warfare efforts in the past and the inadequacy of strategic planning and decision making at the national level. Precisely because the instruments of psychological-political conflict are not altogether distinctive, this arena requires fully integrated planning and coordinated operations throughout virtually the entire national security bureaucracy.

We need not dwell at length on the causes of the resistance to psychological-political warfare throughout the US diplomatic, military, and intelligence establishments; they are apparent to

most of those who have had direct experience in this field. The State Department continues to ply its trade very much in the spirit of the foreign ministries of nineteenth-century Europe, with only grudging accommodation to the role played by modern communications, public opinion, ideology, and political theater in contemporary international affairs.¹⁹ The military services-in their preoccupation with technology, major weapon systems, and the big war-tend to neglect low-cost approaches to enhancing operational effectiveness, especially at the lower end of the conflict spectrum; and they tend to regard psychological-political warfare as someone else's business.²⁰

The failure of both the State Department and the military to assume psychological-political responsibilities might seem to point to the intelligence community as the natural home for such activities. Yet the CIA has generally been unwilling or unable to allow the degree of coordination with other governmental entities that is essential for an integrated national strategy in this area. There is also a feeling at the agency that the era of CIA involvement in political or ideological struggles is essentially past-that an aggressive agency role can only jeopardize more important institutional equities.

What, then, would be involved in a revitalization of US psychological-political warfare capabilities? The foregoing discussion is not meant to suggest that fundamental change is a hopeless proposition-only that it is essential for us to be conscious of the obstacles to it. We must be particularly conscious of the less tangible obstacles that cannot be fixed by organizational rewiring or other short-term measures. At the same time, useful steps undoubtedly can be taken without creating a revolution in the way Americans behave or the US government conducts its business.

Perhaps the most promising area for change is in the field of military psychological operations. The fact that military psychological operations have generally been treated as a subspecialty of special operations is a good indication of the conceptual and operational limitations under which it has long labored.²¹ Of course, the very identification of PSYOP as a special forces mission has tended to isolate it from normal military activities and bring it under a certain suspicion,

which its black connotations have further strengthened. But PSYOP has perhaps suffered most from identification with the hardware and missions of the tactical battlefield—that is, leaflet delivery, loudspeakers, and radio broadcasting. As a result of all this, PSYOP has had very low priority in terms of personnel, equipment, training, exercising, and doctrine. In addition, it has suffered from low visibility at senior command levels within the military (particularly outside the Army, which owns most PSYOP assets), not to speak of other US government organizations.

This situation is now beginning to change as a result of renewed interest within the military as well as at the national level. The rethinking of PSYOP roles and missions is still at an early stage, however, and basic doctrinal and organizational questions remain to be worked out. The Air Force and Navy appear not yet fully persuaded that PSYOP can be a responsibility of all the services and of all higher command echelons. There is increasing recognition that PSYOP need not be limited to the hardware-supported missions of the tactical battlefield but can have important applications at the operational and theater levels, particularly in low-intensity conflict situations. But there is as yet little apparent consensus on the role of PSYOP at the strategic level or in peacetime.

The tendency to think of PSYOP in terms of direct verbal communication is a strong one, and it reflects the nature of tactical PSYOP as historically practiced by the United States. However, this is a tendency that must be resisted if the full potential of nontactical PSYOP is to be realized and if the services are to embrace the full range of PSYOP activities as legitimate and proper military missions. The uniformed military generally acknowledge that the overriding purpose of US military forces is not to fight wars but to deter them. But deterrence is a psychological phenomenon, not a simple reflection of the quantity and quality of military forces; and there is every reason to suppose that foreign perceptions of US military power can be shaped in various ways to strengthen its deterrent effect.²²

Even if one accepts that it would be difficult to shape Russian and Chinese perceptions of US power, a strong case can be made for the potentially high payoffs of efforts to shape

perceptions in third world countries. Within the third world, decision making is apt to be undisciplined, inadequately supplied with intelligence, lacking in orderly staff procedures, strongly influenced by the passing impressions and phobias of a small leadership element, and subject to sudden internal political challenge.

Much could be accomplished simply through deliberate exploitation of normal US military activities such as exercises, deployments, air and naval displays, and technology demonstrations. At a higher level of activity, with the movement of military forces dedicated specifically to a psychological-political mission, PSYOP measures shade into traditional coercive diplomacy. With activities such as naval port visits and presence, missions have generally not been understood as belonging within the PSYOP framework and do not appear to have been approached in a systematic or highly coordinated manner.

A characteristic weakness of America's approach to the use of force has been the tendency to draw sharp distinctions between wartime and peacetime. One result is the penalty exacted (in terms of organization, planning, and general readiness) in any transition from peace to war. Psychological-political warfare could compensate for temporary inadequacies in deployed US forces in severe crises or in the initial stages of war. In fact, this could be an important function for the United States. In general, a compelling case can be made for reviewing and enhancing the psychological-political component of US war planning and national-level crisis management operations.

The entire area of strategic war planning is of critical importance in this context, since it is the point at which the military, diplomatic, and psychological-political components of national strategy most closely converge. Efforts to enhance and better integrate strategic planning at the national level should focus on the difficult substantive and procedural issues involved in war planning. More generally recognized is the need for integrated interagency planning in crisis situations; but here as well the potential of psychological-political warfare seems not to have been fully realized.

The foregoing discussion highlights the part of this field that is the most neglected and at the same time the most

susceptible to immediate improvement. In low-intensity conflict theaters such as Central America, there is scope for application of, the full range of US psychological-political capabilities. The strategic importance of peacetime political warfare and international communications-with respect to the third world as well as the major powers-can hardly be overestimated. It seems clear that the best hope for diminution of political-military threats from major powers lies in the relentless exposure of their populations to information and ideas from the West. The opportunities for short-term gains should not be allowed to distract us from this fundamental strategic imperative.

Notes

1. See, for example, Paul Linebarger, *Psychological Warfare* (Washington, D.C.: Infantry Journal Press, 1948); Leonard Doob, *Public Opinion and Propaganda* (New York: Henry Holt and Co., 1948); Daniel Lerner, ed., *Propaganda in War and Crises* (New York: Stewart, 1950); William Daugherty and Morris Janowitz, eds., *A Psychological Warfare Casebook* (Baltimore: Johns Hopkins University Press, 1958); and W. Phillips Davison, *International Political Communications* (New York: Praeger, 1965).

2. On the early history of military psychological operations, see Alfred H. Paddock, Jr., U.S. *Army Special Warfare: Its Origins* (Washington, D.C.: National Defense University Press [NDUP], 1982).

3. The originally top secret report of the president's Committee on International Information Activities, headed by William H. Jackson, is now available in Department of State (DOS), *Foreign Relations of the United States*, 1952-1954, vol. 2, pt. 2 (Washington, D.C.: Government Printing Office [GPO], 1984), 1795-1867. Hereafter referred to as *Foreign Relations*.

4. Ibid., 1836-60. According to the Jackson committee report,

the national information program has suffered from the lack of effective central direction. In spite of the establishment of the Psychological Strategy Board, coordination has been lacking and the various agencies concerned have largely gone their separate ways. Opportunities have been missed to take the offensive in global propaganda campaigns.... The headquarters staffs of all agencies engaged in information work should concentrate more on the conception, planning, and coordination of global campaigns and less on detailed control and execution of day-to-day operations (1840).

For pertinent remarks on the confusion regarding the mission of US information agencies, see pages 1836-38; also of interest is this remark concerning the military role:

The contribution of the armed forces to political warfare has been limited by the lack of definition of the military role by higher authority, and by an inadequate understanding on the part of military authorities that they and their commands are full participants in the political aspects of the present struggle and must conduct themselves accordingly. Military commanders and planners tend to regard the allocation of military resources to current political operations as an unauthorized diversion from tasks for which the armed forces are explicitly responsible, (1860).

Eisenhower abolished the Psychological Strategy Board on the committee's recommendation, apparently on the grounds that psychological-political warfare was too closely bound up with US policy or strategy generally for such an arrangement to work effectively.

5. Consider, for example, John Franklin Campbell, *The Foreign Affairs Fudge Factory* (New York: Basic Books, 1971), 147-77.

6. A thoughtful discussion of the functioning of public diplomacy under the Reagan administration is provided by Gifford D. Malone, "Functioning of Diplomatic Organs," in Richard F. Staar, ed., *Public Diplomacy: USA versus USSR* (Stanford, Calif.: Hoover Institution Press, 1986), 124-41. See also Carves Lord, "In Defense of Public Diplomacy," *Commentary*, April 1984, 42-50.

7. The argument for a more political approach to multilateral diplomacy is cogently summarized by Richard S. Williamson, "U.S. Multilateral Diplomacy at the United Nations," *Washington Quarterly*, Summer 1986, 5-18. On the Soviet approach to political action, see, for example, James Atkinson, *The Politics of Struggle: The Communist Front and Political Warfare* (Chicago: Henry Regnery, 1966); and Roy Godson, *Labor in Soviet Global Strategy* (Washington, D.C.: National Strategy Information Center, 1984). On the promotion of democracy as an objective of US policy, see William A. Douglas, *Developing Democracy* (Washington, D.C.: Heldref Publications, 1972).

8. See, for example, James Cable, *Gunboat Diplomacy: Political Applications of Limited Naval Force* (New York: Praeger, 1971); and Barry M. Blechman and Stephen S. Kaplan, *Force Without War. U.S. Armed Forces as a Political Instrument* (Washington, D.C.: Brookings Institution, 1978).

9. See Richard H. Shultz and Roy Godson, *Dezinformatsia: Active Measures in Soviet Strategy* (Washington, D.C.: Pergamon-Brassey's, 1984). Soviet active measures (*aktivnyye meropriatia*) encompass what is here called political action as well as covert political warfare. For a general discussion, see Angelo Codevilla, "Covert Action and Foreign Policy, II," in Roy Godson, ed., *Intelligence Requirements for the 1980s: Covert Action* (Washington, D.C.: National Strategy Information Center, 1981), 79-104.

10. A collection of (generally older) materials on this subject is available in Ronald D. McLaurin, ed., *Military Propaganda: Psychological Warfare and Operations* (New York: Praeger, 1982).

11. A discussion of the history of US international broadcasting is available in James L. Tyson, U.S. *International Broadcasting and National Security* (New York: National Strategy Information Center, 1983). For an overview of current US activities in this area, see United States Advisory Commission on Public Diplomacy, 1986 *Report* (Washington, D.C.: GPO, 1986). Examples of public diplomacy materials produced by US government agencies are DOD, *Soviet Military Power* 1986 (Washington, D.C.: GPO, 1986) and DOS and DOD, *The Challenge to Democracy in Central America* (Washington, D.C.: GPO, 1986).

12. The role of information as an instrument of national strategy comparable to the diplomatic, economic, and military instruments was emphasized in an address of then National Security Advisor William P. Clark to the Center for Strategic and International Studies, Georgetown University, 21 May 1982. Administration studies of international information policy resulted in a presidential directive on this subject (NSDD 130) in March 1983. See "rune #Up for Term Two," *Chronicle of International Communication*, July-August 1984, 1.

13. For some critical reviews by recent participants, see the remarks of Alfred H. Paddock, Jr., and Gifford D. Malone in Staar, 297-99.

14. Sun Tzu, *The Art of War*, trans. Samuel B. Griffith (Oxford: Oxford University Press, 1971). 77-78.

15. Gen Dwight D. Eisenhower told a meeting of American newspaper editors in 1944: "I have always considered as quasi-staff officers, correspondents accredited to my headquarters." That reporters acquiesced in such treatment is scandalous for a contemporary journalist; see the discussion in Philip Knightly, *The First Casualty* (New York: Harcourt Brace Jovanovich, 1975), 315-17ff.

16. The gross abuses involved in media coverage of the Vietnam War have been well documented. See Peter Braestrup, *Big Story* (New Haven, Conn.: Yale University Press, 1978); Robert Elegant, *How to Lose a War: The Press and Viet Nam* (Washington, D.C.: Ethics and Public Policy Center, 1982; originally published in *Encounter*, August 1981).

17. An excellent brief analysis may be found in Mark Crispin Miller, "How TV Covers War." *The New Republic*, 29 November 1982, 26-33. Also of considerable interest is John Weisman, "Why TV Is Missing the Picture in Central America," *TV Guide*, 15 September 1984, 2-14.

18. The controversy arising from the exclusion of the press from the US action against Grenada in October 1982 led the Joint Chiefs of Staff to initiate a review of policy regarding media participation in contingency operations, in the form of a special commission of military and media representatives headed by Gen Winant Sidle. Although this commission reached informal agreement on the principle of press participation in all military operations to the maximum degree consistent with operational security, the DOD has since indicated some reservations on this score, and there is little evidence that any significant movement has occurred on the media side. As one retired admiral is reported to have said, "Operational

security is not the problem; the problem is that when you write about us, you make us look bad." See Fred Halloran, "The Pentagon and the Press: The War Goes On," *New York Times*, 29 January 1986; and "Material and the Media," *Essays on Strategy and Diplomacy 2* (Claremont, Calif.: Keck Center for International Strategic Studies, 1984).

19. Pertinent observations on the role of the State Department in the current administration's public diplomacy efforts are offered by Gifford Malone in Staar, 132-37.

20. Consider the complaints of Fred W. Walker, "PSYOP Is a Nasty Term-Too Bad," *Air University Review* 28 (September-October 1977), 71-76, as well as Edward N. Luttwak, "Notes on Low-Intensity Warfare," in William A. Buckingham, ed., *Defense Planning for the 1990s* (Washington, D.C.: NDUP, 1984), 197-209.

21. See the discussion in Alfred H. Paddock, Jr., "Psychological Operations, Special Operations, and US Strategy," in Frank R. Barnett, B. Hugh Tovar, and Richard H. Shultz, eds., *Special Operations in U.S. Strategy* (Washington, D.C.: NDUP, 1984), 231-51.

22. Of interest in this connection is Robert Jervis, Richard Ned Lebow, and Janis Gross Stein, *Psychology and Deterrence* (Baltimore: Johns Hopkins University Press, 1985).

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When Are Political Objectives Clearly Defined?

A Historical Perspective

Michael A. Moms



National policy objectives should be clearly defined. Whether the goals are strategic or tactical, they must be delineated and articulated to those responsible for implementing them.

Since the difference between clarity and vagueness in political objectives is only a matter of degree, incomplete conceptions of vague political objectives obviously leads to incomplete conceptions of clear political objectives. Nevertheless, a rough distinction can be made between vague and clear political objectives after the nature of their relative difference is understood. Most observers acknowledge that political objectives should determine the nature of military objectives and strategy-which cannot be precise unless political objectives are clearly defined.

Clarity in political objectives is the responsibility of political leaders rather than military authorities; therefore, the military services cannot be expected to impose limits on their operations if the political objectives are vague.¹ In turn, if military power is to be used efficiently and without risk of major war, political objectives must not underestimate or overestimate the military capabilities at their disposal.

Correct Generalizations

The attempts of many authors to define clear political objectives are less perceptive than their analyses of the evils that result from objectives that are vague. Most envisage clear political objectives derived from an overall objective that reflects our national purpose. They point out that limited objectives determine the nature and extent of US involvement in limited wars or interventions. Some authors add that clear

political objectives also need to be flexible so they can be adjusted to meet changing conditions.

These statements about clear political objectives are correct generalizations. Clear political objectives should be limited and should not be achieved at the price of inflexibility. Changing circumstances will always make the task of formulating clear political objectives difficult. However, attempts to go beyond generalities belie incomplete conceptualizations of vague political objectives.

A Paradox

Political objectives evince much superficial continuity and, hence, an aura of decisiveness, although they may actually encompass and conceal considerable drift and indecision. Thus, while flexibility is necessary for adapting to changing circumstances, flexibility can also become largely synonymous with drift and indecision.

Nevertheless, political objectives still may remain constant in meaning over a period of time although different strategies may be required to implement them. The difficulty is in distinguishing between political objectives that only have superficial continuity of meaning and those that really are continuous in meaning.

This paradoxical nature of vague political objectives suggests a definition of clear political objectives. A political objective is clear when it continues to represent concern for the preservation of the same specific vital interest or for the same kind of postwar peace. If the objectives are clear in this sense, they can provide adequate political direction for the choice of military objectives and strategy.

Drift occurs when political objectives are not continuous in meaning or when they are so vague as to permit several divergent strategies to appear to be adequate ways of attaining objectives. In either case, drift rather than political objectives largely determines the nature of strategy.

However, this definition applies only to those specific political objectives that guide military strategy in a specific limited war or intervention. General foreign policy objectives are, perforce, vague. For example, support of the United

Nations and interest in a world free of aggression are general foreign policy objectives that attract popular support through their vagueness.

This suggested definition of clear political objectives needs to be elaborated further by examining its relation to the concept of vital interests. Since clear political objectives must represent concern for the preservation of the same specific vital interest, it is then necessary that vital interests also be clear and specific.

Propaganda Advantages

Some propaganda advantages can be gained by grandiloquent political objectives such as the Truman doctrine's aspiration to support free peoples who are resisting attempted subjugation by armed minorities or outside pressures. However, even at that early date in the cold war, the rhetorical exaggerations involved touched off a debate charging that the United States was overcommitting itself.

The US strategy of support to Greece and Turkey against aggression refuted these criticisms; it was a clear and limited commitment. However, this clarity of strategy was due to the US policymakers' clarity of purpose and their clear grasp of US vital interests rather than to the clarity of publicly stated political objectives.

Occasionally, vital interests may be precisely formulated while political objectives are vague; for example, the Truman doctrine. Nevertheless, it is extremely difficult for political objectives to be clear when vital interests are abstract and vague.

The stark clarity of a direct Soviet confrontation with the West in the late 1940s made the determination of US vital interests relatively simple. The calculation of what were these vital interests became more complex and ambiguous as the communist threat became more diverse and subtle in the 1950s.

Abstract Vital Interests

As the paradox of abstract vital interests began to loom larger in US policy in the 1950s and 1960s, the need for clarity of political objectives continued and, perhaps, even increased as the nature of the threat changed and became more ambiguous. However, the precedent of vague political objectives set by the Truman doctrine's rhetoric continued to be the observed norm.

One of Robert E. Osgood's main themes in a 1968 paper illustrated the consequences of a heritage of vague political objectives and of increasingly vague and abstract vital interests. While the US postwar pursuit of policy objectives has shown much continuity, the US concept of its vital interests has been constantly expanding.

In Vietnam, where communist aggression was considered a threat to US security, the general requirements of containment led to an increasing US response with no question as to the precise relevance of the Vietnam War to US security. Osgood argued that the growth of multipolarity and the increasing complexity of the communist threat necessitated more precision in determining the extent to which our vital interests are involved in communist aggression.²

The paradox of abstract vital interests, then, reinforces the paradox of vague political objectives and vice versa. Together, they reinforce the indecision embedded in each vague paradox. This tends to result in policy drift and in inadequately considered, expanding commitments.

This vicious circle of vagueness and drift can be broken by efforts to relate vital interests more specifically to contemporary conditions and conflicts, and can be weakened by increasing the clarity of political objectives; that is, clarification of vital interests leads to clarification of political objectives and vice versa. More precise vital interests make it harder for political objectives to equivocate in claiming they are preserving the same specific vital interest.

On the other hand, greater clarity of political objectives would increase pressures on vital interests to be more precise. Greater clarity of political objectives would indicate the respective advantages and costs of implementing different

strategies and combinations of political objectives, which would in turn increase the chances that vague concepts of vital interests would be exposed. Such exposure would surely result in greater pressure for more precise definitions of vital interests.

Guidelines

The peculiar characteristics of vague political objectives suggest several guidelines for distinguishing clear political objectives from vague ones. Clarity of political objectives is being achieved when the following questions can be answered in the affirmative.

Is the nature of the paradox of vague political objectives understood and consciously guarded against in defining political objectives?

Do political objectives help undermine the paradox of abstract vital interests? By indicating the respective advantages and costs of implementing different strategies, do political objectives expose vague conceptions of vital interests that unwisely require prohibitive costs?

In choosing our military strategy, have we carefully considered the costs and benefits of attaining objectives that primarily demand military action versus the costs and benefits of attaining objectives that are more closely related to nation-building and internal security?

Are drift and indecision being reduced in our political objectives, our conception of our vital interests, and our choice of military strategy?

Notes

1. Robert J. Bower, "Military Objectives in the Nuclear Age," *Military Review*, May 1966, 91-97.
2. Dr Robert E. Osgood, "Perspective on American Commitments," paper presented at the Sixty-fourth Annual Meeting of the American Political Science Association, Washington, D.C., 5 September 1968, 11, 17-19.

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Some Thoughts on Psychological Operations



William F. Johnston

Governments of countries threatened with insurgency should regard PSYOP, particularly face-to face communications, as a first line of internal defense.

The intent of this article is not to proclaim PSYOP a panacea for "wars of liberation." The intent is to focus attention on psychological operations as a vital instrument in Ho/Mao-type wars of national liberation, especially the early stages where revolutions are hatched from grievances of the masses by communist incubation and kept at the right emotional temperature by thousands of native agitators.² Without this skillful and massive agitprop and organizational effort, which has been characterized as "half the revolutionary task," there could be no successful liberation wars.

Auxiliary or Primary?

Psychological operations should have more recognition as important instruments of low-intensity conflict.³ They have the capability to compete with the communists' conflict doctrine, which requires the integration of political, economic, psychological, and military factors of power. Aggressive nations can successfully use PSYOP on a case-by-case basis in subversive insurgency-threatened countries. PSYOP use, however, must be carefully calculated in policy and operations to reach the grassroots level. Whoever gets to the people first, with ideas that stimulate self-interest, gains a decisive lead ... and that is precisely what happened in Vietnam.⁴

Use of Media Discounted

Looking at the Vietnam War in retrospect, we see that the communists used all available media, from instigation through propaganda and guerrilla warfare to conventional military operations. Such sophisticated mass media as printed materials, leaflets, posters, pamphlets, and radio broadcasts were more obvious than the workhorse of the revolution: the agitprop cadre who operated on a face-to-face basis in the rural villages and hamlets. The US discounted the sophisticated media in the early days because it did not seem to play an important role.⁵ What no one understood at the time was that radio was being used to communicate the Communist party line to the agitprop cadres in the remote areas of South Vietnam. They, in turn, were translating the party line into action among the masses. Based on opportunities at the local level, the actions generally consisted of study sessions (learning how to read and write Vietcong propaganda), demonstrations, parades, rallies, and any other activities that would get the people involved-ostensibly in furtherance of the peoples' interests, but with the end objective of strengthening the Communist party and weakening the opposition. The US did not appreciate the magnitude of the agitprop cadres-their numbers, their effectiveness, or the extent to which they were able to get the people engaged in furthering communist propaganda.

Douglas Pike, a noted expert, claims that the various social organizations created by the Vietcong in South Vietnam and used by the agitprop cadres were developed as "self-contained, self-supporting channels of communication." In his view, these organizations were the "secret weapon" and the "heart and power of the National Liberation Front (NLF)."⁶

Pike also revealed that the Vietcong "spent enormous amounts of time, energy, manpower, and money ... explaining itself to itself, to the other side, and to the world at large." He said they were "obsessed" with doing this. Pike found that the more he studied the Vietcong, the more "it became evident that everything the NLF did was an act of communication."⁷ In other words, everything the Vietcong did was calculated to gain the optimum psychological effect.

Policymaker and Propagandist

In the communist world, psychological operations /warfare experts are represented at the highest levels of government and within the Communist party. One of their roles is to help make policy. PSYOP experts in the United States and most of the free world, however, (except for Nationalist China) appear to have little status and not much influence; several reasons are offered below.

1. Psychological operations /warfare, including propaganda, has a distasteful image. It is thought to deal in lies and variations of the truth, and is looked upon in general as a dirty business with which few wish to be associated.

2. Psychological operations cannot be scientifically evaluated as to effectiveness. PSYOP activities that cannot produce fast, measurable results are hard to sell. There are exceptions, of course; for example, when tactical PSYOP can be used to encourage a beaten enemy to surrender or in an amnesty campaign where the defectors can be counted.

3. There are very few professionally qualified and experienced PSYOP experts who also have sufficient acquaintance with the people of a specific foreign country. A major reason is that little status, low prestige, few rewards, and no high-level promotions are based on professionalism in psychological operations. There is no psychological operations career program; yet, attaining full qualification as a psychological operations expert on a specific foreign country is a lifetime job, not unlike the type of professionalism required of a psychoanalyst.

4. Insurgency-threatened countries do not give enough attention or importance to psychological operations. They often lack the know-how to start an effective psychological operations program, and they tend to place the same priority on PSYOP that the United States does in its support of that country. This priority is usually relatively low in proportion to the overall assistance provided by the US. While in the later stages of an insurgency the US may help with such sophisticated media as printed leaflets, radio, and TV, the US usually lacks expertise in the language and ways of the people. This expertise is necessary to provide advice on the content of the message to ensure that the message achieves the desired

effect. **The main burden of face-to-face education must be on the shoulders of the indigenous government and people.**

Another problem is that of convincing an insurgency-threatened government to establish an uncomplicated but credible amnesty program early in the insurgency. This program would provide, for insurgents who have changed their minds, a way out of the "victory or death" box that the guerrilla is usually in.

Chieu Hoi

The Chieu Hoi (Open Arms) Amnesty Program was one of South Vietnam's most successful programs. However, considerable time was required for the program to build up credibility and to achieve the desired results.⁹ Initially, Vietcong who wanted to defect believed, as the Vietcong indoctrination claimed, that they might be shot.

After the low point at the end of 1964, the Chieu Hoi program showed a steady increase in the number of Vietcong returnees. In 1966 there were over 20,000 defectors, double the number of the preceding year. Total defections of Vietcong returning under this program numbered more than 75,000.¹⁰ If we accept the ratio of 10 government soldiers needed for each insurgent guerrilla, this program saved the GVN and the US a troop strength of over 750,000 soldiers. From the dollars-saved angle, the total cost of the program, using a figure of \$127 to bring in a Vietcong defector, was around \$9.5 million. Since the cost to kill a Vietcong is estimated at \$300,000, killing this number of soldiers would have cost \$2.25 billion.

Indigenous Armed Forces

The United States can and should give a higher priority to encouraging insurgency-threatened governments to develop a professional psychological operations capability. This capability must include personnel, both American and indigenous, who can conduct face-to-face psychological operations. Indigenous PSYOP people must be able to

overwhelm communist-trained agitators in both quality and quantity of ideas related to peoples' desires and fears if they are to get the people motivated and committed to the government.

Indigenous military forces, paramilitary forces, or police forces would be good organizations to undertake increased PSYOP responsibilities in the rural areas. One reason is that these forces represent the best organized and most cohesive institutions in many developing countries, particularly in the rural areas. Also, better results will be achieved in the remote rural areas if the peasants know that an iron fist is underneath the velvet glove of the communists' friendly persuasion. (Changing the ways of peasants is a real challenge.)

Every member of those military and police forces that are in contact with rural people should be trained to talk to the people-and doing so should be required as part of their duties. This would include interpreting news and participating in educational activities. They must also be prepared to discuss persuasively what the government is doing for the local people.

The main focus should be on developing specialized PSYOP units in the rural areas. These units should consist of local natives. Very important, also, is the establishment of a two-way communication system to ensure that popular grievances and good ideas get to the PSYOP planners and decision makers at the top level-and that governmental PSYOP policy guidance gets down to the lowest PSYOP level. This policy guidance must be centralized and controlled at the top, but implementation of the policy must be decentralized at the grass roots.

Lower-level PSYOP people should spend about one-half of their time in investigating and preparing so as to tailor their talks and educational activities to fit the local needs. Once the real needs of the rural people are ascertained and transmitted to the top echelons, there is more reason to hope that the government will help the people help themselves. This would go a long way toward preventing the communist agitators from generating revolutions out of grievances, hatreds, and social injustices.

Conclusions

In conclusion, insurgency-threatened governments can be expected to heed US advice if it is in the form of lessons learned at great cost. Indigenous governments must put a high priority on psychological operations, particularly on face-to-face education and on countering communist agitators. These governments must recognize that a face-to-face psychological operations capability must be developed from the people, by the people, and for the people of each particular language group, tribe, clan, or area of the country-and this takes time. Developing a successful capability requires careful selection and training of candidates. This is not something that can be "made in the USA" and exported.

The US military can and should develop mature, fully qualified, professional PSYOP experts who are experienced in the language and the thinking of a foreign people. Such experts could help governments with PSYOP organization and management, as well as providing support with our more sophisticated mass media. Psychological operations planners, both US and indigenous, must be raised to the first-team level. This is crucial for success! PSYOP planners must have ready access to top authorities. Governments must translate top-level interest and support into meaningful terms for people at the grassroots level. Feedback from the people to the top level is equally important. This interest from government is essential to winning and maintaining the support and loyalty of the people. Such a psychological operations program would be one of the cheapest and best security investments the US could make in the developing world.

Notes

1. This article consists of excerpts from "Neglected Deterrent: Psychological Operations in 'Liberation Wars'," *Transition*, nos. 12 and 13 (January 1968): 58-65. Reprinted with the permission of the Foreign Affairs Executive Seminar, Foreign Service Institute, and its author. The communist psywar instrument was simply a means to an end-communist domination over everything that was not already under communist control.

2. Late in the China conflict, Gen George C. Marshall realized that the battle for the mind waged with ideas and propagated by mass communications media could be decisive in countering the liberation war in China. In

1947, upon return from his unsuccessful mission to China, Marshall said, "China might have been saved by the massive use of radio and motion pictures, on a scale hitherto unheard of." William Benton, "How Strong Is Russia? And How Weak?" *New York Times Magazine*, 10 June 1956, 70.

3. Robert Holt and Robert Van de Velde, *Strategic Psychological Operations* (Chicago: University of Chicago Press, 1960), 64. These authors state that the US has never fully understood the nature of the psychological instrument.

4. Stefan Possony in "Viet Cong Propaganda War," *Los Angeles Times*, 11 July 1967, gives a good analysis of international propaganda based on captured documents. He concludes that although Americans are not conscious of it, the US was the target of a well-orchestrated and skillful Vietcong propaganda offensive after 1961.

5. Radio Hanoi and Vietcong clandestine transmitters were important for getting the Communist party line and other instructions to the leadership and agitprop cadres in remote areas-information which otherwise would have been delayed for weeks. Broadcasts were made in all five major languages used in Vietnam. Beginning in 1960, there was an increase in the use of all types of media in an accelerated propaganda offensive against the government of Vietnam.

6. Douglas Pike, *Viet Cong: The Organization and Technique of the National Liberation Front of South Vietnam* (Cambridge, Mass.: MIT Press, 1967), 124.

7. *Ibid.*, ix.

8. See Slavko Bjelajac, "A Design for Psychological Operations in Vietnam," *Orbis*, Spring 1966. Bjelajac concludes that "psychological operations are indispensable" and in a Vietnam-type war "should be accorded a priority at least equal to any other weapon or technique in the Vietnamese protracted conflict."

9. The task of defecting a Vietcong in the Chieu Hot Program was primarily a psychological operations task. However, Aid for International Development (AID) Vietnam played an important role, since AID furnished the resources for most of the food, housing, and allowances given to the Chieu Hot.

10. Bob Considine, "Pacification Cadres," *Philadelphia Inquirer*, 19 September 1967.

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The Role of Public Opinion

Lloyd A. Free



Public opinion cannot be slavishly followed, but psychological data should be collected and analyzed so that government can take this factor into account in planning.

The following excerpts are from an exchange of letters that took place at about the time of the Vietnam moratorium in the fall of 1969. One writer was a Georgetown University sophomore with the unknown name of Randy Dicks, the other a president of the United States with the well-known name of Richard Milhous Nixon.

Randy wrote the president:

I think that your statement at your recent press conference that "under no circumstances" will you be affected by the impending antiwar protests in connection with the Vietnam moratorium is ill-considered, to say the least. It has been my impression that it is not unwise for the President of the United States to take note of the will of the people. After all, these people elected you. You are their President.

The president replied, in part:

There is a clear distinction between public opinion and public demonstrations. To listen to public opinion is one thing; to be swayed by public demonstration is another.... Whatever the issue, to allow Government policy to be made in the streets would destroy the democratic process. It would give the decision not to the majority and not to those with the strongest arguments, but to those with the loudest voices.

Introduction

What is the role-the actual and proper role-of public opinion in international security affairs? And how, if public opinion does and should count, is majority opinion to be determined?

The assumption that public opinion, both at home and abroad, is somehow important is borne out by the efforts of political leaders to woo it and by the practices of governments to influence it. All major governments in the world today, and many of the minor ones, spend varying amounts of time, money, and attention on attempts to influence the opinions of their own citizens and the citizens of other countries.

Yet, even in our recent history, when a sense of the importance of public opinion has become more self-conscious than it used to be, there have been unbelievers. Harry Truman, whom I nevertheless admire as one of our great presidents, was one of them. When Mr Truman faced a problem, he would find a principle involved, often a moral principle, and then make his decision accordingly. And he would stick to that decision come hell or high water. With this approach, public opinion and opinion polls are irrelevant, you simply do what you think is right.

The late, great John Foster Dulles adopted this same approach. He once said in my presence:

If I so much as took into account what people are thinking or feeling abroad, I would be derelict in my duty as Secretary of State.

Another of our great secretaries of state, Dean Acheson, claimed, disapprovingly, that Americans have a "Narcissus psychosis." "An American," he wrote, "is apt to stare like Narcissus at his image in the pool of what he believes to be world opinion." After making the point that the only honest answer people generally could give to questions about the specifics of foreign policy would be a "don't know," he made this observation:

World opinion simply does not exist on matters that concern us. Not because people do not know the facts-facts are not necessary to form opinions-but because they do not know the issues exist.

Thus, we are faced with some very basic questions: Does such a thing as world opinion exist? Do people in the United States and other parts of the world really have meaningful opinions of any significant scope in regard to international issues? If so, are these opinions of importance to foreign relations and international security affairs? Your own instinctive answer to these questions may be an unqualified

"yes" or an unqualified "no," but after years of experience in the public opinion field, my own answer is very equivocal-namely, it all depends.

Definitions and Assumptions

To start with, I must define some of the terms we will be discussing. An opinion, in my terminology, is simply an expressed attitude-an attitude that is communicated. An attitude, on the other hand, is really more of a perception-a way of looking at a given subject.

In the course of our lives, we build up all sorts of assumptions based on our experiences and these assumptions influence what we perceive as the world in which we live. In other words, we participate in creating our own realities and our attitudes spring from these "realities." They are the result of an interplay of our assumptions, as shaped and modified by experience. In a very real sense, if an individual has no assumptions concerning a given subject, or that are capable of being related to that subject, he can have no attitudes-and hence no opinions. And any opinions expressed by an individual will be meaningful only if he in some way relates the subject to his own purpose, no matter how narrow or broad it may be. The range of his sense of purpose is delimited by his "reality world."

Every individual has blind spots of greater or lesser scope-that is, subject matter areas about which he has no assumptions and, hence, no attitudes. It is difficult for many people to realize what a large proportion of the people of the United States, not to mention the underdeveloped areas of the world, have no assumptions, attitudes, or information about international affairs.

Let me cite from a study I did in this country a few years ago. One-quarter of the American public had never heard or read of NATO, only 58 percent knew that the United States is a member of NATO, and only 38 percent knew that the Soviet Union was not a member-facts which go to the very nature and fundamental purpose of our most important alliance! One-quarter of the adults in this country did not even know that the government of mainland China is communistic!

In short, at least two-fifths of even the American people are far too ignorant about international affairs to play intelligent roles as citizens of a nation that is the world's leader-and only about one-fourth are really adequately informed. The situation in most other countries of the world is far worse, particularly in underdeveloped areas. For pollsters to ask these uninformed people about specifics of foreign policy is obviously an exercise in futility. Looked at in this perspective, one can begin to see the validity of Dean Acheson's views and to question the common assumption that, if enough people at home and abroad are persuaded to adopt a given opinion, then the policy of their government will be affected-at least in democracies.

Opinion Leaders and the General Public

Before we write off the importance of public opinion in international security affairs, however, let us introduce some other aspects of the problem. First, we must recognize that when it comes to the "nitty-gritty" day-to-day decisions on specifics, public opinion usually has no effect. Either the public has no opinions on the matter or people do not know that decisions are being made. On a broad range of matters that are publicly known, there is usually an educated elite who do have meaningful opinions, in varying degrees of intensity, about international security matters.

This elite may be of greater or lesser size, depending upon which country is involved and which issue is in question. However, the fact that it may be small does not derogate its power. We can meaningfully define world opinion abroad or significant opinion at home in terms of the publics that count in the particular situation, whether limited or mass.

Beyond this, however, elements of the public can and often do get into the act, not only in the United States, but also in the underdeveloped areas. The people may lack meaningful opinions on a wide range of specifics about international matters, but their broader assumptions may come into play at certain times and places to make a given international issue a matter of public concern. Often this applies only to a minority of the greater public; frequently the people are whipped up and

organized for ulterior ends, whether by the communists or by local leaders-but react they do!

Publication

The action may be as peaceable as signing a petition or writing a letter to the local newspaper (both of which are apt to be relatively ineffective), or to writing a personal letter to the president (as Randy Dicks did), or writing to one's congressman. (The latter action may actually be of some influence; the attention paid by members of Congress to their mail is out of all proportion to its significance as a barometer of public opinion.)

But, increasingly, more extreme manifestations of public action-demonstrations, picketing, and rioting-reflect attitudes that are strongly held by at least some segments of the public. These forms of public action have become a phenomenon of worldwide scope. For example, rioting in Japan and Korea made it exceedingly difficult for the two governments to normalize their relations. Demonstrations in Panama were unquestionably instrumental in causing the US-after a decent interval, of course-to agree to revise the Panama Canal Treaty. Demonstrations and potential riots in the Middle East have made it difficult for the Arab governments to follow a policy of moderation in the Arab-Israeli conflict. Anticommunist violence in Indonesia strengthened the hand of the army against the Communist party in a struggle that has had profound international implications. Anti-Vietnam protests in the United States unquestionably affected the calculations of the North Vietnamese, not to mention those of our American leaders.

But the greater public also gets into the act in a more regular and generally more peaceable way in the form of periodic elections, not only in the democracies but also in some of the semidemocracies (if not the "guided democracies"). In such elections, international matters can and often do enter as central issues of the campaign.

But then, one does not have to search very far back in US history for other examples: Woodrow Wilson's campaign theme, "He kept us out of war," helped him win the election in 1916; and Gen Dwight D. Eisenhower's promise to go to Korea

increased his landslide victory in 1952. In fact, it is almost axiomatic that whenever war or peace seems to be at issue, the public in almost every country will exhibit deep concern in ways that have political meanings.

Global Public Opinion

More broadly, a close study of the matter has convinced me that there are widely shared attitudes on international matters, amounting in many instances to consensuses which governments simply must take into account. Sometimes these consensuses are global. With apologies to Dean Acheson, there are, on occasion, worldwide or virtually worldwide reactions on matters that concern us.

One occasion was the Suez affair in 1956. I have little doubt that the United Nations well-nigh universal condemnation of the Israeli-British-French invasion of Egypt was supported by what can only be called a consensus of world opinion-a consensus shared even by many people in both the United Kingdom and France.

A similar consensus of condemnation seems to have existed over the Soviet Union's occupation of Czechoslovakia-a consensus apparently shared even by a good many people who were communists themselves.

Another is the worldwide impact of Russia's launching the first two sputniks in 1957, followed by its subsequent achievements in space. These developments led to reevaluations of the relative standings of the two superpowers, extending not only through official circles and elites but to general publics as well. In fact, data show that people throughout the world ranked the Soviet Union and the United States just about equally in terms of power and importance in those days, an enormous contrast from the days before 1957.

This perceived equality contributed, along with other developments, to the idea that a stalemate existed-a notion that affected the foreign policies of most of the world's nations.

Regional and National Attitudes

Short of these global consensuses, some basic attitudes are so widely held in certain regions or areas that they must be taken into account, both by the governments which rule there and by others dealing with them. The phobia in Latin America against American intervention is one example. Similarly, in almost all of Africa and Asia, basic attitude patterns opposed to imperialism and neocolonialism are deeply rooted. Other examples are the anti-Israeli "set" of the Arab world and, fortunately for us, the anti-Chinese bias in much of Southeast Asia.

In addition, there are many situations where there is a meaningful consensus of public opinion in particular countries. One example is the almost universal aspiration that the West Germans held for Germany's reunification. Other examples are the fear and hatred of Germans that were held by most Russians and Poles, and the Japanese public's opposition to full-scale rearmament.

The American people, too, have certain fixed ideas. One is opposition to foreign aid: Six out of 10 Americans favor either reducing economic aid to foreign countries or ending it altogether. Another is the very high degree of concern to keep our military defense strong at the same time that more than one-half of the public thinks we are spending too much on defense. In a related vein, almost six out of 10 Americans think the US "should take all necessary steps to prevent the spread of communism to any other parts of the free world, no matter where." Anticommunism is, in fact, clearly one of the strongest factors in Americans' ideas about US international security policies.

Policies and Opinions

In any particular country at any given time, there are programs and policies for which no government or leader can engender public endorsement. In other words, the climate of opinion imposes limits-sometimes very broad, sometimes very narrow-on each government's area of maneuver. In the extreme, certain things are virtually taboo; in other cases, they

are merely impolitic; in still others, particularly where public opinion is either in agreement, nonexistent, divided, or lacking in intensity, anything is acceptable. Although policymakers sometimes appear blind to the fact, the achievement of many-if not most-of the international security objectives adopted by the United States presupposes certain perceptions, attitudes, beliefs, and behaviors on the part of various persons in this and other countries.

Usually, on day-to-day matters, the opinions of key members of Congress and/or officials of foreign governments are important for the accomplishment of particular US objectives. On more important matters, the list of people who have influential opinions may include members of elite groups that have power or influence in our own or other societies. Often, the educated elements of the general public may also have a bearing on the success or failure of US policies. Frequently, the opinions of peoples as groups are important, either because popular support or cooperation is necessary or because the people show their concern by way of protests, demonstrations, or elections.

Often, psychological factors are critical to the success of US policies. If these factors are absent, it is futile to adhere to a policy which presupposes them. Taking into account, for instance, the feelings of the majority of the Chinese people toward the Chiang Kai-shek regime in 1949, no amount of effort or determination on the part of the United States could have prevented a communist takeover of mainland China. As another example, consider that the US supported French rule in Algeria for years, despite the fact that the psychology of the Algerians-not to mention the French-made this goal impossible.

In another aspect of French international security affairs, it was public opinion, more than anything else, that forced the French military to fight the Indo-Chinese war with one hand tied behind its back; victory was impossible. The French people would not condone the necessary national effort, so the government found it impolitic to send draftees to fight in Indochina. The current malaise in the European community and the disarray in NATO are prime examples of the limits that psychological factors can place on national objectives.

Public Opinion, Political Pressure, and Prophecy

Finally, to prove what a valid prophet I can be on occasion-and, of course, I like to forget those instances where my judgment proved faulty-let me quote from a lecture I delivered when the trends of American opinion about the war in Vietnam were still pretty obscure.

Our own Government will undoubtedly now have to face up to the fact that the American people are sick and tired of the war. It is my considered judgment as a so-called "expert" that we are in the early stages of an inexorable tide in favor of pulling out of Vietnam. There may be riptidA from time to time which will temporarily obscure the direction of the current, but it is my belief that however you and I may feel about the matter, the movement down below will continue ever more strongly in favor of disengagement.)

Of course, as usual when I stick my neck out, I had some data to rely on. In the aftermath of the Tet offensive, studies conducted in this country showed that in mid-February 1968, immediately after the offensive, the majority of Americans remained hawks. In fact, hawkish sentiment increased in the immediate sense after the Tet offensive, favoring further escalation of the war. One-quarter of the American people advocated gradual escalation and no less than 28 percent opted for "an all-out crash effort in the hope of winning the war quickly, even at the risk of China or Russia entering the war."

By June of the same year-1968-the picture had changed materially. One-half of the public had shifted to the "dove" side, with 7 percent favoring a cutback in the American military effort and 42 percent wanting us to discontinue the struggle and start pulling out of Vietnam-this latter figure being almost double what it had been just four months earlier.

By June of 1970, Gallup had found that the proportion of people thinking that the US had "made a mistake in sending troops to fight in Vietnam" had risen from 25 percent (in March of 1966) to 56 percent. About one-half of the people now favored withdrawal, either immediately or at least by July 1971.

Policymakers and Public Opinion

There is a real question about the sensitivity of our policy-makers to psychological factors that have a bearing on the success or failure of our international security objectives. There is also a question about those policymakers' receptivity to the results of public opinion polls and other forms of policy-oriented psychological research. I can only speak on the basis of my own experience and that of my late associate, Hadley Cantril, plus years of personal observation of the government process. And from these points of view, I would say that the record is spotty at best. However, recent presidents have shown an awareness of the importance of psychological factors.

Oddly enough, the supreme example of sensitivity to public opinion-and of consummate ability to influence it-came in the earliest days of scientifically conducted polling. The man of the hour was Franklin D. Roosevelt. Tommy Corcoran once credited Roosevelt with having said, in effect, that he was the captain of the ship but that events and public opinion limited his power while providing instrumentalities for exerting power.

Particularly after the adverse reactions to his famous "quarantine" speech, Roosevelt was determined not to get too far out in front of public opinion in connection with the war in Europe-nor to stay any farther behind than he thought he had to. In this connection, he followed the polls with great interest-particularly charts of American public opinion specially prepared for him by Mr Cantril, who had conducted surveys throughout this period.

President Eisenhower

President Dwight D. ("Ike") Eisenhower was less consciously interested in domestic public opinion polls than Roosevelt had been. This was probably in part because Ike was so popular and his administration so relatively noncontroversial. But I know from my own experience that he was deeply interested in the opinions of people in other countries. While working with Nelson Rockefeller, who was a consultant to the president in

1955, I started a series of periodic reports on the psychological situation abroad.

The president read these reports carefully and followed them with great interest. (The common notion that he did not read documents is ridiculous; every single report I submitted to him through Rockefeller was read-and annotated-by the following morning. And this goes even for a 67-page document, single-spaced, which I know he read in full because he corrected a typographical error in his own hand on the next-to-last page!)

On more than one occasion, after John Foster Dulles had given one of his masterful briefings to the National Security Council (NC), the president was heard to say, "But, Foster, you forget the human side," as he pulled out one of my reports and read from it. As a result of that, I was the second most hated man (by Dulles) in Washington, Rockefeller being the first!

By 1955, my reports to President Eisenhower had shown a sharp increase in skepticism abroad about America's peaceful intentions. This skepticism helped to create receptivity to an idea that Rockefeller had advanced and which had been cold-shouldered-namely, the "Open Skies" inspection proposal. When Eisenhower finally propounded Open Skies, it had as great a psychological impact as any one-shot propaganda move since World War II.

President Kennedy

Jerome Wisener says that John Fitzgerald Kennedy knew clearly that he could exercise his power only if he had the consensus of the people and the Congress behind him. As a result, Kennedy was a fervent believer in polling. He depended heavily on the findings of special surveys conducted for him by Lou Harris on domestic opinion, including international issues. He also followed closely the United States Information Agency (USIA) data on opinion abroad. On a number of occasions, he personally requested that certain surveys be made-especially in Latin America.

In the aftermath of the Bay of Pigs, USIA found that Fidel Castro was little known in Latin America and was generally viewed by the public with considerable allergy. Subsequently,

the Kennedy administration adopted a relatively low-keyed approach to Castro and Castroism.

President Johnson

In the early days of his administration, Lyndon Baines Johnson regularly used Oliver Quayle's polls, including those on international issues. President Johnson kept a loose-leaf notebook, not only of the latest surveys taken in the United States by Quayle, Gallup, and Harris, but also of polls conducted abroad.

Following the American intervention in the Dominican Republic, I sent to the White House a report I had prepared in June of 1962, *Attitudes, Hopes and Fears of the Dominican People*. It showed that the Dominicans, as of then at least, were the most pro-American, anticommunist, anti-Castro people we had found in any part of the world. Not only did President Johnson read the report; the White House had it duplicated and distributed at the highest level and said that it had proved "very helpful." I have little doubt that this report was one of many factors that influenced the Johnson administration to shift from supporting the military junta to working toward a coalition solution.

Against such "successes" as these, however, must be set some glaring "failures," where research findings were ignored in framing US policies. The most cataclysmic of these had to do with the Bay of Pigs invasion. A year before, I had managed "by the skin of my teeth" to get a public opinion study done in Cuba. It showed that Castro was overwhelmingly popular with the Cuban people. There was a small opposition, but it was confined almost entirely to the city of Havana. Thus, whatever the expectations of those who planned the invasion, it came as no surprise to many that there was no popular uprising to assist the Bay of Pigs invaders.

The study had been made available to the government as well as to the public, and had actually been sent up to the White House. However, between the time the report was issued and the attempted invasion, there had been a change of administration-Kennedy had come into the White House. And our findings were not called to the attention of the new

president or anyone on his staff when they were considering the question of invading Cuba.

Although called a "success" when submitted to President Johnson after the Dominican intervention in 1965, a Dominican study conducted after the fall of Trujillo found that the invasion had been a "failure" when the results were originally made available to the government in 1962. The report included the following flat statement:

An extremely serious situation of popular discontent and frustration, fraught with a dangerous potential for upheaval, exists in the Dominican Republic. Never have we seen the danger signals so unmistakably clear.

Yet, despite this urgent warning, the US government devised well-merited but long-range solutions to Dominican problems and neglected short-term emergency programs which might have avoided later problems.

The neglect of such research findings demonstrates a fact which has become crystal clear to me from my years of experience within the State Department and my subsequent observations as a researcher and government consultant. A considerable proportion of our government, with particular reference to the State Department and the Foreign Service, tends to be insensitive to the importance of psychological factors in international affairs. Within our US government there is no systematic collection of such data and, despite the interest of the White House, no systematic marshalling of whatever material may be available. (It is not without significance that the special polling of American public opinion that was inaugurated by the State Department after World War II and was conducted under the very distinguished and able direction of Schuyler Foster, whom some of you probably know, was discontinued in the latter half of the 1950s.)

As to psychological factors abroad, more than one ambassador has echoed the words of one of their colleagues: 'To hell with public opinion! I'm here to deal with the government, not with the public!' He said this, incidentally, while serving in a country which later went into an acute crisis because of public turbulence.

It is against this multifaceted background that I said the record of our policymakers is spotty when it comes to paying

attention to "the psychological." Some policymakers (particularly at the highest level) have paid attention; some have not.

Conclusion

In closing, let's put this whole matter into broader perspective. No responsible critic maintains that our government should slavishly follow public opinion or that US foreign policy should be based exclusively, or even primarily, upon courting momentary popularity at home or abroad. Often, governments that deserve the adjective "responsible" will have to fly squarely in the face of domestic opinion while attempting to change it.

Bill Moyers once told a story that is pertinent in this respect: During a period of crisis, President Johnson and his advisors were meeting in the cabinet room to discuss alternative courses of action. At a particularly exasperating moment, when no option appeared likely to succeed, one of the men exclaimed wearily: "If we only knew what the people of this country really want us to do!" The president studied his melancholy advisor for 39 seconds, then answered: "If we knew what they wanted us to do, how could we be sure that we should do it?"

Any government worthy of its name has to do what it thinks necessary for the good of the country, but its course can be greatly eased if it has public opinion on its side. Decision making demands a knowledge of how the people are thinking and feeling-and why.

Even more often, governments must fly in the face of opinion abroad. This is especially true of the United States as it pursues its role of world leadership: if we aid India to rearm against the Chinese threat, we are bound to incur the wrath of Pakistan; we cannot assist Israel without provoking an anti-American outburst from the Arab world; fighting the war in Vietnam enraged the "doves" in many parts of the world. It is clear, then, that a certain price must be paid in at least psychological terms-and it should be incurred knowingly, after both a careful assessment of the benefits and risks and a calculated attempt to devise ways to minimize unfavorable impacts and maximize favorable ones.

After the Tet offensive, Gen William C. Westmoreland said that the results were psychological, not real. Well, he and his colleagues had better learn that when it comes to accomplishing US objectives, psychological factors can be just as "real" as guns, ships, planes, or nuclear weapons. This is because human beings are always the ultimate movers and shakers, and humans are psychological animals.

In short, psychological data needs to be systematically collected and cranked into the intelligence appraisals of given situations. And these data, both domestic and foreign, should be taken into account in framing foreign policies and enunciating international positions. The psychological requirements for achieving US objectives need to be carefully calculated from the start, and every effort must be made, through leadership, persuasion, and public diplomacy, to secure their fulfillment.

Simply put, psychological data is essential if the United States is to be an effective leader in today's world. And its employment is imperative if the president of the United States is going to lead a unified American people into the future.

Notes

1. Lloyd A. Free, "The Role of Public Opinion," *The Forum*, Spring 1971, 55; lecture, National War College, Fort Lesley McNair, Washington, D.C. Reprinted with the concurrence of the National War College and the courtesy of the author.

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A Critical Analysis of US PSYOP



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In an era during which it has become very fashionable to discuss the psychological aspects of international relations and during which the study of that field has been greatly influenced by psychological theories and research, particularly in America, little attention has been focused on the communications aspect of international relations; that is, psychological operations. In this essay, we identify and assess the principles of-and some developments in-this field. We also advance several modest proposals for further progress in analysis.

Introduction

Psychological operations is that specialized field of communications that deals with formulating, conceptualizing, and programming goals, and with evaluating government-to-government and government-to-people persuasion techniques. Properly defined, PSYOP is the planned or programmed use of human actions to influence the attitudes and actions of friendly, neutral, and enemy populations that are important to national objectives.) The critical variable is, then, the perceptions of foreign populations.² Propaganda is only the most obvious example of a persuasive communication. Because psychological operations are designed to influence actions or attitudes, the parameters of the field can be seen in terms of Harold D. Lasswell's classic communications model:

*Who Says What
In Which Channel
To Whom
With What Effect.*³

We know that a government spokesman is saying something in some channel to foreign populations with a view to influencing them. The specific operation is then defined on the basis of what, in which channel, and with what effect. Psychological operations, then, is a truly interdisciplinary phenomenon, lying in the interstices of psychology, sociology, communication, and political and military sciences.^{4,5} PSYOP is communication that "embraces the study of persuasiveness, on the one hand, and persuadability on the other. It also involves the study of attitudes-how they are formed and how they can be changed."⁶ In practice, however, psychological operations requires inputs from linguists, ethnologists, historians, cultural anthropologists, and area specialists, along with others from the humanities, natural sciences, and social sciences.

Historical Review

Leaders have used persuasive appeals as far back as recorded history allows us to search; Americans, authors of the Declaration of Independence and other brilliant psychological operations, were far from unfamiliar with this tradition. The process of psychological operations remains essentially what it was when Gideon defeated the Midianites but, like many other human enterprises, it has become infinitely more complex. The development of mass communication-broadcasting, worldwide wire news services, mobile printing presses, motion pictures-provides instruments of psychological operations previously undreamed of, as may be seen from the scale on which they were used in World War II as compared with previous wars.

No one who lived through or read about the collapse of France in 1940 will ever forget Goebbels's development and use of psychological operations as major political and military weapons of attack. The Nazis orchestrated the use of radio, the press, demonstrations, group meetings abroad, agents, displays, fifth-column terrorism, and, once the attack started,

screaming dive bombers (the memory of which is terrifying to many). The Nazis gave the first full-dress demonstration of what psychological operations can accomplish with the new tools of mass communication and the new weapons of military warfare. And once the meaning of what they had done came to be understood, all the major combatants who had not already done so were compelled to institutionalize psychological operations in their own plans and concepts of modern war. Nevertheless, while there were many programs, no systematic, centralized planning was undertaken in the United States until World War II^{9,10}—and the organization and resources developed during the war were quickly reduced following its conclusion. There was some effort to study the lessons learned from PSYOP programs, but the analyses were disseminated unevenly in the government and military services. The civilian Office of War Information (OWI) was disestablished and the propaganda function was passed to the Department of State.

During the 1950s, however, American psychological operations received renewed attention. The highly ideological character of the cold war rivalry and the political nature of the Korean War led to an emphasis on the psychological aspects of conflict. Courses of instruction were developed and "PSYOP" was rationalized within the services. In the civilian government structure, PSYOP was rationalized within the United States Information Agency (USIA). During this period, which was characterized by a political more than a military conflict, channels such as "Radio Free Europe," "Radio Liberation" (later "Radio Liberty"), "Radio in the American Sector" (RIAS), and the "Voice of America" (VOA) were primary PSYOP agents. They communicated news, ideas, and opinions across political boundaries—not infrequently with significant effects.

Unquestionably, the largest American effort in psychological operations since the second World War occurred during the Vietnam War. From the 1950s until the early 1970s, the US government placed substantial emphasis on psychological aspects of its world role, first in its rivalry with the Soviet Union, second in its assumption of global leadership, and finally in Vietnam and other local conflicts. However, the growth of detente and the apparent failure of PSYOP in Vietnam contributed to a continuation of the pattern whereby persuasive

communications resources are drastically reduced when there is no longer a perceived immediate need for them.

General Principles

Effective psychological operations requires several basic ingredients: adequate intelligence, coherent organization, sound planning, and a systematic evaluation of feedback. Intelligence is the most commonly overlooked prerequisite to an effective PSYOP program. From a PSYOP perspective, intelligence is the basis for understanding the communications, emotions, attitudes, and behavior of individuals and groups.

Basic to the understanding of persuasive communications is the fact that audience factors are the principal constraint on communication effects. Although studies have been conducted on source attractiveness, trustworthiness, and background, it is the audience's perceptions of credibility that count. ¹¹ Explorations of the phrasing, ordering, and other presentation factors continue to show that the critical variables in determining communication effects are audience factors—education, exposure to opposing views (previous or subsequent to the message), extant opinions, and culture. ¹² In addition, such wholly audience considerations as target composition and persuadability are clearly beyond the influence of any communicator. ¹³

Since the target population in effect sets the parameters of persuasion, intelligence must provide sufficient accurate data to support the development of programs and messages to optimally affect the audience in all its diversity. ¹⁴ Information must be timely, thorough, and systematic.

Organization is important because it must unify the diverse parts of the complex process of intercultural communications. Without sound organization, no single aspect of the process can contribute efficiently to the system. Breakdowns will occur within as well as between program responsibilities. Examples are given below.

Planning is essential at all levels, from tactical operations to long-range, strategic activities. The psychological plan, the basic instrument for integrated and concerted operations, must be designed to exploit all of the source advantages possible. The plan should use intelligence to determine the

media, messages, and compositions most likely to support the attainment of national objectives.

To implement PSYOP plans, the program must extend beyond words to actions-and actions must be an extension of words. An effective program of persuasive communications draws on real action attributes and elaborates a realistic and concrete future course. Political and military actions are critical elements in psychological operations.

In order to continue to improve the effectiveness of the program, a system to collect, analyze, and exploit feedback on past operations must be established. Because of the weakness of traditional measures of PSYOP effects, this requirement has too often been neglected.

Organization

It is perhaps a truism to say that an organization should be so constituted that it is capable of effectively carrying out the functions assigned to it. In this section, we emphasize the essential functions of psychological operations and explain how these functions are currently managed in the United States.

An institutionalized structure is essential for the effective implementation of psychological programs. There must be a defined organizational structure with clear lines of authority and responsibility for the development and implementation of policy, plans, and operations. Whether strategic or tactical in scope, the psychological operations mission requires the staff and personnel necessary to develop and implement policy, develop and execute plans, collect intelligence, evaluate programs, and conduct operations.

Policy

A first requirement for conducting meaningful psychological operations is the national-level development and implementation of clearly articulated PSYOP policy in support of political, social, economic, or military goals. The government must establish realistic policy goals to ensure consistent and credible operations. Credibility of policy objectives is the core

element in effective psychological programs. False or inconsistent national policy can destroy the best plans and programs.

One example of a poor policy and a lack of understanding was Hitler's attitude toward the Vlasov movement in which he failed to exploit the psychological aspects of Russian Nationalism in 1943.^{15, 16} Based on policy, appropriate psychological objectives to support operations can be articulated. Programs designed to implement objectives should not be academic-they must be credible and an integral part of the operational environment. For example, if the psychological objective is to induce enemy defection and/or surrender, appropriate actions must be taken by military commanders to ensure that friendly forces clearly understand the surrender policy, will honor safe-conduct leaflets, and will establish appropriate policy concerning the good treatment of enemy prisoners in POW camps. In an insurgency or political environment, the government must develop and implement a credible amnesty policy regarding the insurgents and their supporters.

In the United States, the development and implementation of psychological policy is the responsibility of the executive branch of government. The National Security Council, Department of State (DOS), USIA, and other appropriate departments and agencies form a joint working group or task force to develop psychological policy for an international crisis, event, or a US overseas program. This is an ad hoc group, and policy is determined by consensus.

In peacetime, the US ambassador is responsible for implementing PSYOP policy overseas. In the case of Vietnam, policy was directed from Washington to the US Embassy in Saigon. It was implemented by the Joint United States Public Affairs Office (JUSPAO). More than 60 policy guidance directives were issued by JUSPAO on such diverse topics as 'The Use of Prisoners of War in PSYOP Output,' 'PSYOP Support of Pacification,' and 'PSYOP Aspects of the Refugee Program.' US officials made every effort to develop and promulgate policy directives in conjunction with the Vietnamese government, but such coordination was the exception rather than the rule.

Planning

By definition, a psychological operation is the planned and programmed use of communication media and/or other actions to influence emotions, attitudes, and behaviors of selected target audiences. Planning is the key to psychological operations (random and isolated actions cannot produce consistent results). Planning is essential for psychological operations at all levels-from the strategic and long-range national plan to the PSYOP annex for tactical operations at the battalion command level.

When implemented, the plan becomes the basic instrument and authority for the conduct of psychological operations. One key element in conducting a psychological offensive is the integration of all available assets and their concentration on significant objectives and target groups based on the reality of military, political, or economic operations. The PSYOP plan is the crucial ingredient for integrated and concerted operations. Generally, psychological plans should consist of (1) concept of operations, (2) definition of target groups, (3) clear definition of objectives, (4) general thematic guidance for each objective, (5) injunctions or prohibitions in respect to themes, (6) timetable or schedule to ensure staged and fully orchestrated multimedia operations, and (7) definitive instructions for PSYOP units and assets.

Currently within the US government, there is no central mechanism for the planning of psychological operations. The USIA issues program guidances to its overseas services and divisions. In turn, the United States Information Service (USIS) (overseas) develops country plans which are annual information/cultural programs tailored for a particular country. The Department of Defense (DOD) is responsible for developing psychological plans in support of military contingency operations. Military plans are informally coordinated with the DOS, USIA, and other appropriate agencies.

United States PSYOP planning during the Vietnam period was the primary responsibility of the US Embassy, Saigon. In JUSPAO, the Office of Plans, Policy, and Research was responsible for those plans relating to political, economic, and social programs as well as Republic of Vietnam psychological

operations in support of Chieu Hoi (open arms), pacification, and other programs.¹⁷ On the other hand, the US Military Assistance Command, Vietnam (MACV, developed and implemented plans in support of military operations and selected programs directed to target groups in North Vietnam. Generally, PSYOP plans were coordinated with the Republic of Vietnam through its Ministry of Information and/or the Vietnamese Joint Military Command.

Intelligence

Intelligence is the basis for understanding communications, emotions, attitudes, and behaviors of individuals and groups. Y. Tanaka has proposed a three-step strategy of cross-cultural communication that involves quantitative and qualitative analyses of attitude components within a target population, systematic use of a multichannel and multistep flow of communication, and a strategy in which communication is by deed and words.¹⁸ It is significant that the first step in his strategy is the collection of PSYOP intelligence-the one critical step that is often neglected by the political or military planner.

There are three basic requirements for collecting, collating, and analyzing PSYOP data. First, it is essential that managers and media personnel have a thorough understanding of the psychological aspects of the target audience. Anyone engaged in communication and propaganda programs must have certain information about the audience-background, literacy, preferred languages and dialects, art forms and symbols, and key emotional symbols. In addition, PSYOP personnel should have a thorough understanding of the social, political, religious, economic, and military attitudes that are prevalent in significant population groups. With such knowledge, communication programs can be developed to restructure hostile or negative attitudes, reinforce friendly or favorable attitudes, or reinforce /change neutral attitudes, when appropriate.

The second requirement is for timely and systematic operational feedback. Specifically, information is needed regarding the effort being made to support PSYOP objectives, tasks, and themes aimed at definitive target groups. These

data are essential for analyzing the success or failure of PSYOP programs and strategy.

The third requirement is for timely and systematic feedback from the target audience when a PSYOP campaign is in progress-a substantial task when the full range of communication media is used. A careful and candid analysis is necessary in order to determine which messages and channels of communication worked well and why, what the mistakes were, and what can be done to avoid future errors and failures.

In 1966, a senior foreign service officer of the USIA listed a number of factors that were inhibiting the effectiveness and measurement of PSYOP programs in Vietnam.

- 1. We "fly by the seat of our pants" both in setting goals and measuring our success.**
- 2. Our assessment is superficial because we are not experts and because reporting requirements tend to emphasize deeds and statistics and not attitude, opinion, and behavior change.**
- 3. USIA is oriented more to media than to audience.**
- 4. We deal too frequently with accidents rather than essences, which leads to confusion of ends and means.**
- 5. There is a basic lack of research data.**
- 6. We attempt to change rationally attitudes that are basically emotional.**
- 7. We are often confused by changing goals in the field versus our long-range basic mandate.**
- 8. We lack orientation toward communications as a whole and communications research in particular.**
- 9. There is a communications gap between Washington and the field, between media product and field need.** ¹⁹

Weaknesses in measuring the effect of USIA programs were stated by another senior officer.

- 1. The system is too simple in theory and too unclear in practice.**
- 2. Our objectives are very broad, our specific knowledge very narrow. While we can never have all the knowledge we need, we can narrow the gap in some respects.**
- 3. Much basic data on which to base evaluations is missing; e.g., the extent to which messages are directed to**

target audiences, whether the messages are received, and whether they are understood.

4. There is at present too little operational research directed at the question of results.

5. Too much evaluation is being done by operators themselves. The evaluation is therefore subjective.

6. In the rush of day-to-day business, the hard questions are often postponed indefinitely.²⁰

No single government agency is responsible for the systematic collection of PSYOP intelligence. The Office of Research in the USIA sponsors ad hoc research and conducts some overseas field surveys in order to evaluate selected media output. Intelligence specialists in the Bureau of Intelligence and Research (Department of State) are primarily interested in political information. In a similar vein, the Defense Intelligence Agency is principally interested in the collection and analysis of "hard" military intelligence such as order of battle and weapon systems data. US Army PSYOP intelligence teams generally do not possess the resources or the scope of knowledge required to evaluate the psychological environment of potential target groups around the world.

In Vietnam, as during the Korean War, an attempt was made to overcome PSYOP deficiencies in intelligence by sponsoring ad hoc studies and surveys. However, PSYOP intelligence requirements do not lend themselves to ad hoc or temporary measures: The problem is operational, it is dynamic, and it requires constant attention by professionals who are a permanent part of the team.

A computer-oriented system is being developed by the US military to correct some of the inadequacies in PSYOP intelligence, especially in appraising the success or failure of propaganda programs. This system, known as the PSYOP Automated Management Information System (PAMIS), will be discussed in subsequent sections of this essay.

Operations

Within the US government, the USIA is responsible for educational, cultural, and informational programs and

operations overseas. Its operations in Washington (for overseas audiences) include a broadcast service (primarily the "Voice of America"); information center services that support overseas exhibits and information centers; a motion picture and television service that prepares films and audio tapes for release overseas; and a press and publication service that prepares and distributes magazines and other printed matter to overseas posts. Most of USIA's day-to-day operations are the responsibility of the USIS,²¹ which is a part of the US overseas mission. The organization and activities of the USIS are dependent on various protocols and agreements between Washington and the host nation.

The US military services have their own PSYOP units and, when authorized by the president, can support USIA operations overseas. Military PSYOP units are composed of various teams that can be put together to accomplish specific missions and functions. US Army PSYOP responsibilities include propaganda development, audio visual production, research and analysis, graphics production, printing, radio operations from mobile studios and transmitters, and loudspeaker operations.

In Vietnam, US military PSYOP favored an organizational arrangement that heavily involved the USIA. JUSPAO was established in Saigon in May 1965, a result of the National Security Council directive. JUSPAO was a PSYOP command supported by USIA, DOD, and USAID (US Agency for International Development). The director of JUSPAO (minister/councillor to the ambassador) issued policy directives (to both military and civilian agencies) and conducted the full range of strategic and tactical operations. At its peak JUSPAO was composed of about 250 US officers, more than half from USIA, and about 600 Vietnamese employees. Within the staff of MAC V was the Psychological Operations Directorate, a separate staff section that was later put under the operations chief, the J-3. The military also had operational control of a large PSYOP field unit-the Fourth PSYOP Group. Additional support was available from the Seventh PSYOP Group, which was located on the island of Okinawa.

Programs and Operations

While it is true that Vietnam represented the largest post-World War II American venture into psychological operations, the magnitude and breadth of the US effort there makes Southeast Asia an atypical example of American communications programs-even if a rich source of perspectives.

The major continuing US effort in this field is that of USIA, including the VOA.²² Through periods of attention to and neglect of military PSYOP, USIA has been the principal²³ channel of American communications to foreign audiences.²⁴ The USIA was significantly affected by the detente in US-Soviet relations; for example, its once- anticommunist rhetoric has become anachronistic. Its other functions in information dissemination and cultural exchange have withstood the passage of time far better. This is hardly surprising, since persuasive communications have marginal value as opinion changers but are much more effective in attitude reinforcement.²⁵

Pre-Vietnam

Specific efforts mounted by US psychological operations before Vietnam include, most prominently, campaigns in Lebanon (1958,²⁶ 1962²⁷) and the Dominican Republic (1965²⁸), and American efforts concerning Africa also grew after about 1960. Throughout the entire period, "Radio Free Europe,"²⁹ "Radio Liberty,"³⁰ "Radio in the American Sector" (Berlin),³¹ and other propaganda outlets were directed toward the USSR and Soviet-dominated areas.

The evolution of the postwar world left the United States, notwithstanding its early history and national values, in the position of the world's most important status quo power.³² American international communications were therefore generally antirevolutionary, frequently supporting unpopular regimes in the name of stability.³³ In some cases (e.g., Lebanon) the programs were reasonably effective, but psychological effort success is difficult to separate from the nature and success of the overall political or military activity.

Vietnam

The importance and priority that the North Vietnamese and Vietcong (VC) put on psychological operations are well known, as in the slogans "Political activities are more important than military activities," and "Fighting is less important than propaganda." Vo Nguyen Giap in his *People's War, People's Army* quotes as one of Ho Chi Minh's cardinal principles of political warfare, "Do not attempt to overthrow the enemy but try to win over and make use of him."

As noted above, in 1965 JUSPAO was established to coordinate the US policies and personnel involved in psychological operations. A major portion of the new US PSYOP effort was to be devoted to the Chieu Hoi returnee program (an attempt to win over and make use of the VC). There was to be optimum coordination and integration of both US and Vietnamese operations at all levels, with overall supervision from JUSPAO and the Republic of Vietnam Ministry of Information (MOI) through the Vietnam Information Services vested in a combined US-Vietnamese coordinating committee at the national level with representation from MACV, JUSPAO, General Political Warfare Directorate (GPWD), and MOI.

"Guidelines to Chieu Hoi Psychological Operations: The Chieu Hoi Inducement Program" was prepared in April 1966 by JUSPAO. It centralized policy planning and decentralized operational planning. Execution was assigned to the local level. Development and mass production of PSYOP materials were done by JUSPAO in accordance with tactical needs determined by the field. In addition to JUSPAO, MACV (the 4th US Army PSYOP Group) operated an extensive program, much of which was devoted to the Chieu Hoi inducement program.^{34, 35}

Content of PSYOP material, targeted on the potential rallier, was focused on his grievances, emotions, and aspirations-not on ideological commitment (except in the case of hard-core VC). The insurgent was encouraged to return to his home by the creation of trust in the government as just and generous. Former insurgents were used in preparation of the material to the maximum extent possible-they, rather than the Americans, knew the modus operandi of the enemy and were a part of the indigenous culture.

The leaflet-distributed from aircraft and by hand-proved to be the most practical means of disseminating the Chieu Hoi message. The ubiquitous "safe conduct pass," which literally blanketed South Vietnam, was probably the most effective message. Though there were thousands of other leaflets stressing many other themes,³⁶ the safe conduct pass was most often described by ralliers during interrogation as the one most seen and the one most conducive to rallying. After one battle, 90 percent of those VC who could be searched-the dead, wounded, and captured-had the safe conduct leaflet.³⁷ By the spring of 1971, JUSPAO had distributed nearly four billion leaflets in the campaign to persuade "men to rally to the GVN [Government of the Republic of Vietnam] under its amnesty program."³⁸

No discussion of the factors motivating defection is complete without mention of the carefully structured program of rewards given to those who rallied and indeed even to those who influenced a VC to rally. The Chieu Hoi weapons reward program paid a returnee for weapons he turned in or for weapons that he was able to recover after he rallied. This program was successful in locating large weapons caches. The weapons reward system was established by official decree of the Chieu Hoi Ministry of the GVN.

The Vietcong military forces neutralized through the Chieu Hoi program were equal to about one-fifth of the total of all their forces killed or captured by military action. More than 4,000 men from the government of the Republic of Vietnam or its allies would have been required to effect the same result through military action.³⁹

Besides the safe conduct leaflet and rewards program, testimonials from Hoi Chanh (former VC) proved to be effective in the total psychological process of attitude change. It was determined that the Hoi Chanh testimonial should contain four essential elements: a photograph and complete individual description of the Hoi Chanh; an indication of why he rallied; discussion of the good treatment he received; and an appeal to his former comrades to rally. Experience in the field showed that when a PSYOP person wrote a testimonial message for a Hoi Chanh, it was usually recognized as propaganda. The best approach was for the Hoi Chanh to address his message

specifically to his former unit and address some of his former comrades by name. He should tell enough about himself to convince the recipients of the message that he is in fact alive and well. The operative word in all Hoi Chanh testimonials was credibility. Themes were suggested to the returnee, but the language was his own. In many instances, audio tapes were prepared of Hoi Chanh testimonials for broadcast by air-to-ground loudspeaker systems and radio.

Poetry, music, and art were effective PSYOP media directed to hostile as well as friendly target groups. The messages were emotional in tone and concerned such time-tested themes as love, family, religion, home, holidays, and national heroes.⁴⁰

It became apparent as a result of operational experience that direct psychological operations, aimed at modifying attitudes and behavior, must be preceded by propaganda that is indirect in character, slow and general in nature. It should seek to create an atmosphere of favorable preliminary attitudes. No direct psychological operations can be effective without a proper foundation. Safe conduct passes and testimonials are one type of foundation; that is, they inform the enemy soldier that if and when he decides to surrender, certain protocol will be observed. The best psychological operations involve face-to-face persuasion. The following example of PSYOP messages being reinforced by face-to-face persuasion was provided by a former deputy leader of a VC surgical team who was also a Communist party member.

The Chieu Hoi leaflets were dropped by airplanes very often. I read some of them . . . At that time I didn't really believe in the leaflets because I was told by the cadres that the government wanted to cheat Front people by its Chieu Hoi program. Although I didn't believe what the leaflets said, I had something in my mind about leaving the Front. When my friend, Mr. Thiet, came to tell me about the government's treatment toward the ralliers, I believed him. I believed that I wouldn't be beaten up by the GVN as the cadres had said, because my friend was one of the ralliers, and he wasn't beaten up or punched down into the sea. [This refers to VC claims that GVN troops took the Hoi Chanh up in a helicopter and then threw them into the ocean.] On the contrary, he was well-treated by the government. He was given a job, and he was free to visit his family when he wanted.⁴¹

Another type of foundation used in an insurgency environment was a magazine disseminated in Vietnam called *Long Me*.

The primary target audience for the magazine was the families, friends, and sympathizers of the VC. The 62-page, full-color magazine was distributed bimonthly to villages and districts known to be sympathetic to the VC. It was distributed by priests, merchants, school teachers, bus drivers, fortune tellers, armed propaganda teams, and others. Long *Me* was also distributed through direct mail. It contained feature stories, poems, short novels, cartoons, and art. The feature stories were factual, and they emphasized the positive features of the new life offered to former VC. Long *Me's* indirect approach worked well. The staff of Long *Me*, with the exception of one American (Philip Katz), was composed of former communist propagandists.

Not all propagandists in Vietnam believed in the slow and indirect approach. Many messages were harsh, explicit, and direct; for example, this leaflet was prepared and disseminated by an American military unit:

The sky soldiers of the US 173d Airborne Brigade are here to destroy you. We have killed hundreds of your comrades with our powerful bombs and artillery and invincible ground troops. You will die a senseless death and be buried in an unmarked grave in an unknown jungle. Rally now before it is too late.

Propaganda must be continuous and lasting-continuous in that it must not leave any gaps in logic and continuity of themes, lasting in that it must function over a period of time. The principle of repetition plays an important role in persuasive communication.

PSYOP is not magic; effective communication is based on slow and constant impregnation. PSYOP is not a stimulus that disappears quickly; it consists of successive messages and actions aimed at various emotions or thoughts through many instruments of communication. Effective psychological actions should be continuous; as soon as the effect of one message is weakened, it should be reinforced by another.

Post-Vietnam

After the conflict in Southeast Asia, the United States once again moved away from systematic, coordinated psychological operations on a government-wide scale. As in the past, military

human resources for PSYOP were reassigned or neglected. The USIA had no intensive focus, and USIA efforts were only marginally coordinated with other US persuasion programs. The lessons of the past concerning the potential value of PSYOP, the importance of coordinated, systematic planning, and the value of continuous communications as facilitator (even during periods of strategic security) were once again ignored.⁴²

Effectiveness

Probably the most elusive single area in the analysis of psychological operations is the evaluation of PSYOP effectiveness. How can effectiveness be measured? Polling dominates much of our political life, and market research is considered fundamental to sound business practices; yet PSYOP operates in an anachronistic world where direct audience analysis is often impossible.

Effectiveness of persuasive communications is generally viewed in terms of the degree to which attitudes are changed or reinforced. However, studies have conclusively demonstrated that PSYOP directed at denied or hostile areas should aspire to modify peripheral attitudes only, not fundamental ones.⁴³ Our government's persuasive communications to foreign audiences enjoy very limited parameters of only potential effect.⁴⁴

The relatively small range of impact and the difficulty of measurement are primary constraints in the evaluation of effectiveness. The fundamental question is, how successful are the communications in terms of the limited objectives? Sometimes, however, practitioners have been forced into a secondary question: Assuming the general principles we have identified to be optimum, to what degree are the communications congruent with them?

Another major impediment to effectiveness assessment is the nonpersuasive nature of psychological operations. One is inclined to think in terms of the critical message directed at the critical audience at the critical moment. In fact, the vast majority of propaganda and other instruments of PSYOP consist of what L. John Martin has called facilitative com-

munication (*not* persuasive communication).⁴⁵ That is, PSYOP is designed to keep the lines open-maintain the channel and its credibility-in *preparation* for the critical movement, message, and audience. Since the purpose of the messages sent in facilitative communication is *not* persuasive, how do we measure their effectiveness? To what extent should the two types of communication, which are purposively related but conceptually discrete, be evaluated by a single measure?

If we could select our audience on the basis of certain idiocratic factors-objective physical and personal characteristics peculiar to an individual, such as age, sex, race, education-we might increase by a statistically significant fraction the proportion of those influenced by a message. But we would have no control over such factors as personality and susceptibility to persuasion, existing values, beliefs and opinions or attitudes toward the objects, subjects and situations involved in the persuasive message. We can choose our communicator but not determine his image. We can select the vehicle of transmission but not the channel of reception of the target of our communication. We could maximize the effect of all these factors for a single individual, especially if we were able to subject him to intensive precommunication analysis. But there is no way that this can be done for the diverse assortment of individuals who normally make up the audience of the mass media, the vehicles most commonly used in international propaganda.⁴⁶

For lack of a criterion,⁴⁷ as well as for the inability to secure direct access to the audience and the recognition of the inherent limits of persuasive communications, the most common evaluations of effectiveness have been output measures, despite their notorious limitations.⁴⁸ A second approach has been to focus on reception, in general, this area has not attracted much attention. The final type of analysis-effects measures-may be both direct and indirect.

Direct measures of effects can involve the use of polling or survey data. In peacetime, such information can be gathered in interviews with traveling foreign nationals,⁴⁹ direct mail questionnaires, and polling in the audience's country. In war, or when relations between the sender (source) and receiver (audience) countries are strained, only some-or none-of these may be practicable. In these cases, refugees⁵⁰ and prisoners of war⁵¹ have been used to gather effects data. However, such groups often have inherent disadvantages as a population-they may not be a representative sample, and

identification of the role of any individual message in their decision to defect is usually elusive.

Indirect measures include the content analysis of intercepted mail, mail drops,⁵² captured documents, broadcasts and telecasts, and target area public media.⁵³

Trends

In an effort to institutionalize PSYOP intelligence, the US military designed and developed a computer-oriented system called PAMIS. This information system was designed to fulfill several objectives: (1) to provide the spectrum of information needed to support PSYOP organizational elements for the planning, implementation, and evaluation of PSYOP programs; (2) to encourage (indeed, to enforce) methodologies to support information-gathering programs; and (3) to provide an appropriate automatic data-processing system for the storage, analysis, and utilization of the gathered data.

PAMIS encompasses these three systems:

Foreign Media Analysis (FMA) System,⁵⁴
 PSYOP Foreign Area Data System (PFAD),⁵⁵ and
 PSYOP Effects Analysis System (PEAS).⁵⁶

The primary objective of FMA is to provide statistical data obtained from publications and radio broadcasts of selected foreign countries. The data collected includes information about their propaganda objectives and strategy; propaganda themes used to support these objectives; propaganda trends; the tone and intensity of media coverage related to domestic themes, foreign governments, international organizations or political movements; and propaganda techniques and tactics. Another FMA objective is to provide clear-text abstracts on important events, subjects, and persons as they are treated in the public media of the selected countries.

The objective of PFAD is to provide the US military PSYOP community with uniform methods and procedures for the collection, storage, and rapid retrieval of data needed for planning and operations. The PFAD was designed to accomplish the following tasks:

- define parameters for the collection of PSYOP-relevant data;
- provide uniform procedures and methods for collecting and reporting such data;
- provide a retrieval system that has a centralized data bank, the core of which is a set of over 1,600 foreign area data descriptors, and that permits retrieval of two types of reports: annotated bibliographic material and narrative summaries of subject data; and
- provide for continuous and rapid updating of PSYOP foreign area information.

The computer system provides the PSYOP community with social, cultural, economic, political, communication, and other information that is needed to make decisions on aspects of PSYOP policy, planning, allocation, and deployment of resources and operations.

PEAS was designed to collect, store, and process data from a sample of a target audience in order to measure the success or failure of PSYOP messages and programs. The system also stores and processes data about friendly and hostile PSYOP activities and actions. Timely, accurate reporting on the purpose (objectives and tasks) of friendly PSYOP programs is essential, as are facts about the distribution and intensity of efforts expended on specific target audiences. Although hostile PSYOP activities and actions usually do not directly affect friendly messages, systematic monitoring of hostile propaganda and other actions provides analysts with many clues about how enemy elites react to our PSYOP programs. In fact, when respondents from the target population (such as prisoners, defectors, and refugees) are not available, the content analysis of hostile media can be the most valuable source of feedback concerning the impact of friendly programs.

A significant objective of PEAS is to institutionalize methods and procedures for analyzing PSYOP programs and strategies so that the successes and failures of strategic and tactical programs can be measured. PEAS was therefore designed to provide the following:

- **uniform (institutionalized) procedures and methods for reporting and describing all PSYOP activities in a theater of operations;**
- **rapid retrieval of command and control data to determine how effort and cost relate to objectives and tasks;**
- **the data necessary for analysts to correlate operational data with specific military target groups and segments of the civilian population;**
- **data for a continuous evaluation of the initial impact of PSYOP messages (audio and print) directed to general or particular target groups;**
- **uniform procedures and methods for reporting and analyzing hostile propaganda and action directed to friendly military and civilian populations; and**
- **data needed for an independent audit and assessment of military PSYOP by the joint or other appropriate command.**

To accomplish the above, PEAS was designed to accept, store, and process data inputs into three computer files.

The ACTH file of PEAS was designed to institutionalize the reporting of military psychological activities at each command level. This reporting system provides commanders with systematically collected data for command and control of the full range of PSYOP activities. Specifically, the ACTIV file provides information about the quantity of effort being directed in support of specific programs or campaigns, in support of PSYOP objectives, tasks, and themes, and toward definitive target groups. In addition, this file provides information about the amount of effort allocated to each channel of communication (such as print, radio, and loudspeaker). Also available is information about psychological actions such as show of force, exploitation of new weapons, and supply drops.

Much basic data is needed for making evaluations: To what extent are our messages directed to specific target audiences? What are our objectives? Are our messages received and understood? PEAS will provide many answers to these questions.

The IMPACT file of PEAS was designed to institutionalize the collection of data about the effect of specified propaganda messages, activities, and programs. The data collection format

was designed to be manageable for prisoner of war or other interrogations at any level of command. Each IMPACT computer record pertains to a respondent's (such as POW) reaction to an electronic or printed message or action. In the first step (of the interrogation process), the respondent is required to select from a catalogue of PSYOP messages that he has seen or heard. The IMPACT data record is then completed for those messages identified by the respondent.

It is beyond the scope of this essay to present the details for the multitude of inputs and outputs of the ACTIV file of PEAS, but both quantitative (statistical) and qualitative (textual) reports are available to analysts and other users of the system. These reports provide gross information related to four indicators of PSYOP impact.

- **Understanding:** Did the audience understand the language and symbolism used in the message?
- **Credibility:** Was the content credible, or did the audience view the message as obvious propaganda?
- **Influence:** Did the message influence the respondent to act in a way favorable to the sponsor of the message?
- *Irritation:* Did the language, symbolism, or other aspect of the message irritate the audience?

Statistical analysis of such data should reveal the specific themes and messages that were successful; it should also reveal those messages that failed. In addition, PEAS should provide analysts with a generous number of textual responses, in the respondent's own words, that explain the reasons for both success and failure.

PEAS will provide military commanders with the range of information needed to evaluate the impact of psychological operations. No longer will number of leaflets produced or hours of broadcast time be the only-or even the basic-criteria for evaluating PSYOP programs.

The POLWAR file of PEAS provides uniform procedures and methods for reporting and analyzing hostile propaganda and action directed to US military-and other friendly-populations. Data from this file allow for the continuous monitoring of hostile POLWAR activities at the tactical command level. It is this file of the PEAS that interfaces with the FMA system. The

POLWAR file is concerned with those communications, propaganda, and actions that take place in a combat environment and are directed at friendly military and civilian audiences. This contrasts with the **FMA** system, which is concerned primarily with strategic objectives and which deals with data obtained from newspapers, magazines, and radio broadcasts directed to their own domestic audiences.

Conclusions

Tanaka's concept of cross-cultural communication, noted above, emphasized the systematic use of multichannel, multistep flow* of communication, and a strategy in which communication is by both deed and word.

Propaganda must be total. A modern psychological operation must utilize all of the technical means at its disposal-the press, radio, TV, movies, posters, meetings, and face-to-face persuasion. There is no psychological operation when meetings and lectures are sporadic, a few slogans are splashed on walls, radio and television presentations are uncoordinated, and news articles are random. Each communication medium has its own particular mode of influence-alone, it cannot attack individuals, break down their resistance, or make their decisions for them. A film does not play on the same motives, does not produce the same feelings, does not provoke the same reactions as a leaflet. The very fact that the effectiveness of each medium is limited to one particular area clearly shows the necessity of complementing it with other media. A word spoken on the radio is not the same as the identical word spoken in private conversation or in a public speech. Nor does a word appearing in print produce the same effect as the same word when it is spoken. To draw the individual into the net of persuasion, each technique must be utilized in its own specific way, directed toward producing the optimum effect, and orchestrated with all the other media. Each medium reaches the individual in a specific fashion and makes him react anew to the same theme-in the same direction, but differently. Thus, no part of the intellectual or emotional personality is left alone.

Effective totalitarian regimes have a clear understanding of the psychological aspects of military actions. These regimes

employ propaganda for psychological impact every day, and propaganda is fully institutionalized within the political and military structure of these states. Furthermore, these regimes are sensitive to the psychological environment of their target audiences and are able to orchestrate the various instruments of communication to promote unity in their own ranks and unity with their own people while promoting divisiveness in enemy forces.

As a democracy, the United States has tried to renounce domestic propaganda; as a nation in a highly competitive political world, America must use psychological operations. As yet, however, the formula that would support both these aims without their working at cross-purposes has not been found—a fact made quite evident by the awkwardness that characterizes US PSYOP efforts at home and abroad.

Psychological operations can be among the most suitable and effective weapons in pursuit of US national objectives in this unstable and sometimes threatening world. PSYOP exploits military readiness already required for other purposes without requiring the use of military force. It draws power from the strength of Western democracy and the universals of civilization. It can encourage masses of people to develop untapped natural resources and to oppose totalitarian regimes.

The requirements for effective psychological operations are considerable. Modern persuasive communication is not a haphazard, hit-or-miss activity but a well-coordinated, sustained effort. It demands a broad and thorough knowledge of a wide variety of psychological, sociological, and cultural factors. It also requires planning well in advance of events. It must, at all times, serve under an appropriate form of centralized direction with trained personnel and dedicated resources. Contemporary psychological operations is not an amateur's game.

Notes

1. This definition is adapted from Joint Pub 1-02, *Department of Defense Dictionary of Military and Associated Terms*, 1974. *Psychological operations* is a broader term than *psychological warfare* in that it deals with friendly and neutral, as well as hostile, audiences.

2. See R. J. Barret, "PSYOP: What Is It?" *Military Review* 42 (1972): 57-72. For an excellent study of the dynamics of international perception, see Robert A. Jervis, *Perception and Misperception in International Politics* (Princeton, N.J.: Princeton University Press, 1976).

3. Harold D. Lasswell, "The Structure and Function of Communication in Society," in L. Bryson, ed., *The Communication of Ideas* (New York: Harper and Row, 1948).

4. Indeed, the four principal figures in the establishment of communications research-the fundamental PSYOP root-were two psychologists (Paul Lazarsfeld and Carl Horland), a sociologist (Kurt Lewin), and a political scientist (Harold Lasswell).

5. Wilbur Schramm, "Communication Research in the United States," in idem, ed., *The Science of Human Communication* (New York: Basic Books, 1963), 1-16.

6. Y. Tanaka, "Psychological Factors in International Persuasion," *The Annals of the American Academy of Political and Social Science* 398 (1971): 50-54.

7. Historical literature dealing with US PSYOP is far from rich. It includes the following: W. E. Daugherty and Morris Janowitz, eds. *A Psychological Warfare Casebook* (Baltimore, Md.: Johns Hopkins University Press, 1958); M. Dyer, *The Weapon on the Wall* (Baltimore, Md.: Johns Hopkins University Press, 1959); Harold D. Lasswell, *Propaganda Technique in World War I* (Cambridge, Mass.: MIT Press, 1971); D. Lerner, *Sykewar* (New York: George W. Stewart, 1951); and P. M. A. Linebarger, *Psychological Warfare* (Washington, D.C.: Combat Forces Press, 1954).

8. H. Butterfield, "Psychological Warfare in 1776: The Jefferson-Franklin Plan to Cause Hessian Desertions," *Proceedings of the American Philosophical Society* 94 (1950): 233-41.

9. Relatively little has been written in recent years about the so-called Creel Committee, the Committee on Public Information, created by United States President Woodrow Wilson after the United States entered World War I. Substantial writing on the committee appeared in the interwar period. Even about the Second World War it could be said that "U.S. propaganda agencies created during [the war] were more the result of trial and error planning and ad hoc improvisations than of careful blueprinting."

10. Daugherty and Janowitz, 126.

11. C. I. Hovland, I. L. Janis, and H. H. Kelley, *Communication and Persuasion* (New Haven, Conn.: Yale University Press, 1953); C. W. Sherif, M. Sherif, and R. E. Nebergall, *Attitude and Attitude Change* (Philadelphia, Pa.: W. B. Saunders, 1965); C. I. Hovland and I. L. Janis, *Personality and Persuasibility* (New Haven, Conn.: Yale University Press, 1959); R. L. Rosnow and E. J. Robinson, eds., *Experiments in Persuasion* (New York: Academic Press, 1967).

12. C. I. Hovland, *The Order of Presentation in Persuasion* (New Haven, Conn.: Yale University Press, 1957).

13. Hovland and Janis.

14. Tanaka, 50-54.
15. In the summer of 1942 Russian Lt Gen Andrei A. Vlasov was captured by the Germans. The Germans soon learned that Vlasov wanted to lead a Russian national army of liberation into the Soviet Union. General Vlasov (a Russian military hero) was willing to collaborate with the Germans for the sake of Russian national independence. Hitler, however, saw Vlasov at most as a tactical propaganda tool to weaken the Soviet forces: "promises might be given to him and deserters who came over to join him (the Vlasov movement), but on no account should these promises be kept."
16. R. Gehlen, *The Service: The Memoirs of General Reinhard Gehlen* (New York: The World Publishing Company, 1972), 84.
17. The Chieu Hot program was the campaign to encourage "ralliers" (Hot Chanh) to come over to the Republic of Vietnam side. Only South Vietnamese NO were eligible. Substantial publicity was given to the act of "rallying"—to the motivations and aspirations of the Hot Chanh, the benefits of rallying, and the like.
18. Tanaka.
19. US Information Agency, *Proceedings of the Seminar on Effectiveness*, R-121-66 (Washington, D.C.: Office of Policy and Research, 1966).
20. Ibid.
21. The agency responsible for programs and operations is USIA; the overseas posts are USIS posts, and they form an integral part of the US country team headed in each country by the chief of mission, usually an ambassador.
22. There have been many proposals over the years to sever VOA from USIA, but for the present the tie remains.
23. Other US institutions principally involved on a continuing basis include the National Security Council, the DOS, the Agency for International Development, and the DOD.
24. A major source on USIA is J. Henderson, *The United States Information Agency* (New York: Praeger, 1969); M. G. Lawson et al., *The United States Information Agency during the Administration of Lyndon B. Johnson, November 1963-January 1969* (Washington, D.C.: Government Printing Office [GPO], 1968) is an administration history of some value in understanding USIA. T. Sorenson, *The Word War* (New York: Harper & Brothers, 1968) gives an excellent overview of the problems and competing principles with which such an agency must deal. A more critical, briefer, but equally stimulating presentation is K. R. Sparks, "Selling Uncle Sam in the Seventies," *The Annals of the American Academy of Political and Social Science* 398 (1971): 113-23.
25. I. T. Mapper, *The Effects of Mass Communication* (Glencoe, Ill.: Free Press, 1960).
26. B. H. Cooper, Jr., "The Undenounced Intervention," in Ralph D. McLaurin et al., ed., *The Art and Science of Psychological Operations* (Washington, D.C.: GPO, 1976), 241-46; Idem, "Accentuating the Positive," in *ibid.*, 280-86.

27. R. Nathan, "Cuba: Strategic Dilemma," in *ibid.*, 259-61; B. H. Cooper, Jr., "Effective Diplomacy: An Exit from Armageddon," in *ibid.*, 386-91.
28. B. H. Cooper, Jr., "Teamwork in Santo Domingo," in *ibid.*, 229-32; *Idem*, "Divided Counsels," in *ibid.*, 262-66.
29. R. T. Holt, *Radio Free Europe* (Minneapolis: University of Minnesota Press, 1958); A. A. Mitchie, *Voices through the Iron Curtain: The Radio Free Europe Story* (New York: Dodd, Mead, and Company, 1963); and J. R. Price, *Radio Free Europe -A Survey and Analysis* (Washington, D.C.: Congressional Research Services, 1971).
30. J. C. Whelan, *Radio Liberty-A Study of Its Origins, Structure, Policy, Programming, and Effectiveness* (Washington, D.C.: Congressional Research Services, 1972).
31. E. Taylor, "RIAS: The Voice East Germany Believes," *The Reporter*, 10 November 1953, 28-32.
32. R. L. Heilbroner, "Counterrevolutionary America," *Commentary* 43 (1967): 31-38.
33. G. V. Allen, "What the U.S. Information Program Cannot Do," in J. B. Whitton, ed., *Propaganda and the Cold War* (Washington, D.C.: Public Affairs Press, 1963).
34. The Chieu Hoi inducement program was a campaign to reward Hot Chanh who turned over weapons. (The reward was money.)
35. J. A. Koch, *The Chieu Hoi Program in South Vietnam (1963-71)* (Washington, D.C.: DOD, Advanced Research Projects Agency, R-1172-ARPA, January 1973).
36. See Philip P. Katz, *Communicating with the Vietnamese through Leaflets* (Saigon: Joint US Public Affairs Office, 1968).
37. *Ibid.*, 66.
38. *Ibid.*, 68.
39. *Ibid.*
40. Philip P. Katz, *A Systematic Approach to PSYOP Information* (Kensington, Md.: American Institutes for Research, 1970).
41. Joint US Public Affairs Office, *PSYOP in Vietnam: Indications of Effectiveness* (Saigon: JUSPAO Planning Office, 1967), 120-21.
42. See L. A. Free, VOA Language Priority Study, Washington, D.C., US Information Agency, 1969.
43. D. Lerner, "Is International Persuasion Sociologically Feasible?" *The Annals of the American Academy of Political and Social Science* 398 (1971): 41-49.
44. D. D. Smith, "Some Effects of Radio Moscow's North American Broadcasts," *Public Opinion Quarterly* 34 (1970-71): 539-51.
45. L. John Martin, "Effectiveness of International Propaganda," *The Annals of the American Academy of Political and Social Science* 398 (1971): 61-70.
46. *Ibid.*

47. D. D. Robinson, *A Brief Review Study of the Problems of Criteria in Psychological Warfare* (Columbus, Ohio: Battelle Memorial Institute. Remote Area Conflict Information Center, 1967).
48. Daugherty and Janowitz, 681-84.
49. L. B. Szalay, "Audience Analysis," *Congressional Record* 148 (6 March 1972): 53426-28.
50. Whelan.
51. Philip P. Katz. "A Survey of PSYOP Intelligence," in Ronald D. McLaurin et al., ed., *The Art and Science of Psychological Operations*, 478-94.
52. Mail drops for these purposes are addresses purportedly for give-aways or other contacts. All mail arriving at these addresses is then analyzed for background data-location, age, and sex of correspondent.
53. McLaurin, chaps. 8 and 9.
54. Philip P. Katz, *PSYOP Automated Management Information System (PAMIS): Foreign Media Analysis* (Kensington, Md.: American Institutes for Research, 1972).
55. Philip P. Katz, *PSYOP Automated Management Information System (PAMIS): Foreign Area Data Subsystem (PFADS)* (Kensington. Md.: American Institutes for Research, 1973).
56. Philip P. Katz, *PSYOP Automated Management Information System (PAMIS): PSYOP Effects Analysis System* (Kensington, Md.: American Institutes for Research, 1976).

PART III

Strategic, Tactical,
and Operational PSYOP

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Introduction

This section deals with the objectives and activities of strategic, tactical, operational, and other types of PSYOP. In all forms, PSYOP primarily supports the attainment of national policy and objectives. The key to all US PSYOP is credibility of the message. Evaluation is based on changing perceptions, attitudes, and behaviors.

Certainly, the ideology of a government plays a role in its PSYOP methodology and its international communications. The authors offer articles about Soviet PSYOP campaigns and activities with a credibility/ disinformation perspective.

DeWitt S. Copp discusses Soviet active propaganda measures, including forgery, agents of influence, and disinformation. His discussion serves as a historical summary of Soviet campaigns and ideology.

James Melnich emphasizes mirror imaging in Soviet propaganda. His essay is useful in understanding the overall Soviet PSYOP threat and possible related weaknesses.

Lev Yudovich reveals the significant threat and impact of the Soviet military doctrine of cultivating hate in their soldiers. This doctrine was designed to make Soviet soldiers psychologically prepared to act in dangerous situations and to believe in victory.

Dr Joseph S. Gordon focuses on research, target analysis, pretesting and effects analysis, and propaganda analysis. He concludes that intelligence activities are critical to PSYOP.

George V. Allen, former director of USIA, states that we must be realists and understand that a combination of political, economic, psychological, and military efforts are necessary. He believes that propaganda alone in the short run can do little to solve problems. Allen advocates an honest, objective, and truthful information program that faithfully relies on the individual to make right decisions.

Lt Col John Ozaki, USA, addresses the planning and coordination of successful defector programs as another form of combat power. He emphasizes the characteristics and techniques of a sound program to defeat insurgency movements.

Ronald D. McLaurin emphasizes that PSYOP at the tactical level can contribute to the major strategic objectives of a government and a reacquisition of the loyalty and support of the population.

Benjamin F. Findley, Jr., reviews and analyzes selected US and Vietcong PSYOP in the Vietnam War.

Soviet Active Measures

DeWitt S. Copp



Although Vladimir I. Lenin did not coin the term *active measures* (*laktivnee meropriyatia*), he originated and set in motion all its component parts. Those parts included the International Department (ID) of the Central Committee of the Communist Party of the Soviet Union (CPSU), Section A of the first chief directorate of the KGB, and the propaganda department (PD) of the Central Committee.

The ID is the coordinating center for Soviet active measures. Its lineage can be traced directly to Lenin's formation of the Comintern in 1919. Lenin's purpose for the Comintern, or Third International, was to advance the cause of global revolution by forming communist parties in noncommunist countries and creating conditions for revolt through propaganda and agitation. The approach was adaptable to political realities.

The International Department, formed in 1957, was a sophisticated apparatus at the summit of Soviet power. It carried the view of the leadership, bringing influence to bear on any area-political, military, or economic-that would aid or abet Soviet policy. At the same time, it sought to denigrate and undermine the policies of the noncommunist world, particularly those of the United States. More politically realistic than its Leninist ancestor, the ID's purpose was to manipulate public opinion and gain the acceptance of Soviet ends. The ID's secretary was Anatolii F. Dobrynin, who had served as Soviet ambassador to the United States for 24 years. He was appointed to his post by Soviet General Secretary Mikhail S. Gorbachev in June 1986, several months after the important Twenty-Seventh Congress of the CPSU.

The ID worked closely with the propaganda department, headed by Party Secretary Aleksander N. Yakovlev, who had served for 10 years as Soviet ambassador to Canada.

The propaganda department employed dual courses of action. It orchestrated the line of the party, utilizing Soviet and bloc media, and overtly replayed disinformation generated by the active measures apparatus. Since the PD embodied the former international information department of the Central Committee of the CPSU, it covered both the Soviet home front and the foreign scene.

One of Lenin's first acts on seizing power was to establish the Cheka, dr secret police. He knew that without such an instrument of fear, his movement could not expect to survive. That circumstance did not change, but the Cheka became the KGB-and its activities were worldwide!

Section A of the KGB's first chief directorate worked in liaison with the ID in carrying out covert Soviet active measures. These efforts included disinformation operations, the placement of forgeries, and the managing and directing of knowing and unknowing agents of influence-professionals in sensitive positions, both private and public-whose activities were frequently of great value in the Politburo's plan to gain acceptance of its position on major issues.

Together, the ID, the KGB, and the PD were the architects and planners of Soviet active measures. With an estimated annual budget of \$4 billion, their combined efforts were a major force in the mechanics of Soviet foreign policy.

Stanislav Levchenko, a former major in the KGB, was acting director of line PR of the Soviet active measures group in Tokyo when he defected to the United States in 1979. In his 13-14 July 1982 testimony at the Hearings before the Permanent Select Committee on Intelligence, House of Representatives, he gave the following appraisal.

The size of the overt and covert active measures is massive ... I can tell you from an insider's vantage point that the ID and the KGB receive all the resources and personnel needed to carry out this massive effort. There are never any shortages. Of course, this is not a recent development. An examination of the history of the CPSU will demonstrate the importance of such tactics . . . all active measures operations are assessed against a set of standards. Success is a vital

ingredient. The growth of the Soviet active measures effort over the last five to ten years is due to progress in the field.

Forgeries

Soviet active measures were carried out within a spectrum of white (overt), gray (semicovert), and black (covert) operations. It was in this last area that the crafting and placement of forgeries was conducted by section A of the first chief directorate of KGB. KGB's management of forgeries was global, and was linked to the use of Soviet assets in whatever locale the particular forgery was to be surfaced. The KGB's purpose in placing forgeries was to undermine US relations with allies and nonaligned governments and to influence public opinion against US policies concerning sensitive issues. An additional purpose was to convince those affected by the impact of the forgery that decisions announced by the United States cannot be believed because underlying them were secret plans that were harmful in their implication and intent.

For example, an obscure French-language weekly newspaper in Madagascar-Carrefour (Crossroads)-carried on its front page (summer 1985) a purported letter from a US Army medical doctor at Walter Reed Research Institute written to a supposed superior at the Pentagon. The substance of the forgery indicated that US and South African scientists were secretly working on psychotropic chemical weapons and so-called ethnic weapons that would kill only black-skinned people.

The forgery contained numerous technical errors, and its falsity was quickly exposed by the United States Information Agency (USIA). However, this did not stop Tass (the Soviet official news agency) at year's end from running the forgery as a true account. Tass lifted it from Krasnaya Zvezda (Red Star), the official publication of the Soviet Ministry of Defense, under the headline "Sinister Plans."

The purpose of the forgery was to instill and spread the belief that the US government is vicious, racist, and scientifically willing to pursue inhuman ends. That KGB effort to arouse black Africa failed-the forgery was not picked up by other African newspapers and outlets. However, one of the basic

consistencies of the active measures apparatus was that of repetition. A lie once told is never discarded, no matter how thoroughly exposed. In June 1987, in a meeting with USIA Director Charles Wick, who was in Moscow for the opening of a USIA cultural exhibit, the director of Novosti repeated the ethnic weapon lie. Wick walked out of the meeting. Novosti, a supposedly independent Soviet news agency, is heavily staffed by the KGB.

The KGB made a practice of attacking US scientific and medical activities on a broad scale, employing not only forgeries but also disinformation by clandestine radio stations. One such KGB effort was mounted through "Radio Halgan," operated by a communist-front group of Somali dissidents in Addis Ababa, Ethiopia. The station reported that the president of Somalia was negotiating with the US commander of Central Command to lease Somali territory near the border of Kenya to bury US nuclear waste in exchange for a large aid program (\$400 million). This completely false broadcast was quickly reported (as straight news) by newspapers in Kenya as well as by the AP and other wire services, which replayed the message as far away as Rome and Vienna.

In spite of US proof that no such meeting ever took place (the president of Somalia was out of the country at the time) and the fact that the US does not bury nuclear waste anywhere outside its own borders, the account took on a distorted life of its own. The false story, which was reprinted in numerous publications throughout Africa, produced this headline: "Africa a Global Dustbin for Nuclear Waste."

Soviet active measures operations, using forgery and disinformation, ran the gamut from clumsy and crude to sophisticated and clever. One example of the latter bore the unique distinction of being a double forgery.

The point of attack was Cyprus. The intent was twofold: to damage US-Greek Cypriot relations and to instill fear in the minds of the European public regarding US and NATO plans.

The KGB target was the Greek Cypriot newspaper *Simerini*. A document came into its possession, supposedly forwarded by a Cypriot official who, in turn, had purportedly received it from a British MP, Sir Frederic Bennett. His letter to an unnamed official was a forgery: "Your Excellency, I have received a letter

which contained [sic] information about your country. Since I am not an expert on the problem of the area in which your country is located, I have decided to write to you and enclose the attached letter." The attached letter appeared on the front page of *Simerini*. It, too, was a forgery. Its author was supposedly the US Air Force vice chief of staff, who was allegedly writing to US Secretary of Defense Caspar W. Weinberger, on an urgent matter. The matter concerned the US use of bases in northern Cyprus under Turkish occupation for intended operations in the Middle East. Also, and most importantly, it concerned the evacuation of US soldiers and their families and other US citizens in case of nuclear war in Europe. The forgery elaborated on the deployment of US nuclear weapons in Europe and their possible use in support of the president's strategic schemes.

Swift action on the part of USIA P/G, USIS Nicosia, and Sir Bennett exposed the double forgery for what it was. Its publication and *Simerini's* failure to write a retraction undoubtedly had a very negative effect upon Greek Cypriots who accepted the forgery as valid, but it did not gain European press attention.

To the KGB, a forgery's failure to attain the full effect in no way impeded the continuing attack. Was the forgery's purpose to convince Latin Americans that the US was plotting with Chile to inject Chilean troops and weapons into Central America? Was the purpose to disrupt the first legitimate elections in Guatemala in 30 years by indicating US manipulation and control of the election's outcome? Was its purpose to sway the Indian public into believing that the CIA was responsible for the assassination of Prime Minister Indira Gandhi? Or was its purpose to "get away with" the murder of 269 KAL passengers by claiming that the civilian airliner was on an espionage mission?

Perhaps the forgery's purpose was all of these; in any event, the work of Section A of the KGB's first chief directorate continued without letup. Its endeavors apparently were not moderated in any form by the new spirit of Geneva or by glasnost.

Agents of Influence

Of all Soviet active measures, the most effective and the most difficult to expose was the KGB's utilization of agents of influence. Agents of influence were individuals who, either knowingly or unknowingly, sought to implant Soviet policy positions into decisions made by international organizations (such as the UN) and governmental departments. They also sought to influence congressional actions, public beliefs, and national attitudes concerning world affairs. A case in point is the former senior Norwegian government official, Arne Trehold, who frequently represented his government in negotiations with the Soviets. In June 1985, Trehold was convicted of espionage; he had been a known KGB agent of influence from 1974 to 1983.

Obviously, exposing such agents was a difficult task. At times, there were 700 Soviet diplomats assigned to West European posts. Additionally, 570 Soviets were attached to UN organizations in Europe and 1,200 Soviet bloc diplomats were serving overtly in similar capacities. Finally, and perhaps of greatest significance, there were more than 200 Soviet journalists in Western Europe. The CIA estimated that at least one-third of the nearly 2,500 Soviet and Soviet bloc diplomats and representatives (trade and commercial) were either KGB or GRU (Soviet military) agents.

An unknown percentage were engaged in political espionage, enlisting and utilizing agents of influence. Through the testimony of Soviet and bloc defectors, who were previously involved in active measures, we know that journalistic cover was a KGB priority. It gave the agent an opportunity to legitimately meet a wide range of potential contacts.

Such a person may have been an unwitting agent, a dupe of KGB subtle persuasion and psychological manipulation. Not infrequently, that person was also a journalist. Caught on the hook of his own ego by a KGB operative, who appeared to be anything but, the unwitting agent was slowly and gently played through flattery and praise. He was given a chance to contribute an article to a select group of Soviet intellectuals, after which more articles were accepted and he received payment. Inside information was exchanged for inside

information until the unwitting agent began writing or broadcasting information that favored a particular Soviet line. The line could be political, military, scientific-anything that contributed to influence. In some cases the end result was blackmail, in others it was not. In all cases, however, the KGB's aim was served. There were no figures on agents of influence-only the knowledge that they were in our midst.

The term communications warfare sums up the totality of Soviet active measures-the use of words as weapons in all forms of media. Participants in this strategy were Soviet international fronts: propaganda organizations that conducted their activities under the semicovert direction and control of the ID. Lenin referred to the concept of fronts-groups that denied their Soviet connection while pushing the Soviet line-as transmission belts. Soviet fronts were in the vanguard of preaching, publishing, and fostering Moscow's aims.

Soviet International Fronts

The Soviets had 13 major international fronts and numerous smaller offshoots and satellites. Together they formed an interlocking network that specialized in advancing the Soviet propaganda line within noncommunist countries and the UN, and in emphasizing peace and disarmament as viewed from the Kremlin.

Months before General Secretary Gorbachev accepted President Reagan's invitation to meet in Geneva in November 1985, the fronts had received their marching orders from the ID. Meeting in Helsinki in April of that year, the leader of the 13 fronts drafted plans to launch an all-out campaign against the strategic defense initiative (SDI). The Helsinki gathering was hosted by Romesh Chandra, President of the World Peace Council (WPC, the largest and best known of the Soviet fronts). Chandra was also a member of the Politburo of the Indian Communist Party. Several weeks prior to the conference, the WPC had launched a global appeal against Washington's "space madness," proclaiming "No!" to Star Wars.

After that, the Soviet campaign to attack SDI and generate fear about it was unceasing. Through their publications, demonstrations, and forums, the fronts churned out a stream

of disinformation on SDI-never pointing out, of course, that SDI is a nonnuclear system whose purpose is to destroy missiles, not people.

A broad-gauged view of the campaign occurred in Prague in July 1985 when the Christian Peace Conference (CPC) held its sixth All-Christian Peace Assembly. The CPC had been a Soviet international front since its formation in Prague in 1958; its purpose was to encourage noncommunist clergymen and their congregations to support Soviet policy, including the invasion of Afghanistan. Nearly 800 participants from 97 countries attended the assembly. At the weeklong sessions, staged to address the social and economic ills of the world, a single message overrode all else: SDI meant the militarization of space. SDI was the promotion of an aggressive policy, a web of deception. SDI was a frightening expression of human hubris.

The Soviet propaganda efforts did not succeed in changing President Reagan's strategic policy at the Geneva Summit or, nearly a year later, at Reykjavik. This lack of success, however, did not halt the ongoing Soviet effort against SDI.

Soviet international fronts never admitted defeat on any issue, and they claimed victory in President Carter's 1977 decision to forego stockpiling the neutron bomb in NATO arsenals. In following ID instructions, their emphasis could shift from the neutron bomb to INF, to chemical-biological warfare (CBW), to SDI. All Soviet policy issues played continuing roles in the fronts' propaganda.

To conceal the obviousness of their real purpose, some fronts (such as the WPC), formed additional fronts and satellites. The Vienna-based International Institute for Peace (IIP) is one example; its hierarchy was made up of high-ranking officers of the WPC. The IIP sought to attract noncommunist academics and professionals who were willing to accept the false notion that the institute was a place where scientists from East and West could frankly exchange research results on all aspects of the peace issue.

Another WPC offspring was the International Liaison Forum of Peace Forces (ILF), which was formed at WPC headquarters in Helsinki in 1973. Like the IIP, the ILF was heavily staffed by WPC officers. The ILF held a series of dialogues on peace

issues; for example, opposing SDI and NATO's INF deployment. Mostly, these conferences were held in Vienna, their WPC connection carefully obscured. The ILF was turned on and off as the Soviet International Department required.

Another Soviet front that was created through WPC organizational efforts was Generals for Peace and Disarmament (GPD). Its membership comprised 13 retired senior NATO officers. Foremost among them was Italian Gen Nino Pasti, who had once served as NATO deputy commander. He and four of his fellow members were closely associated with the WPC. Unlike other Soviet fronts, the GPD held no conferences on its own. Some of its members either attended, or sent frequent statements of support to, the major front peace congresses. The members also wrote books and pamphlets that attacked NATO policies and that tacitly-sometimes vigorously-supported the Soviet line. Based in London and chaired by retired Brig Michael Harbottle, the GPD was found by the British Foreign Office to have collective views that were contrary to those of the British government and its allies. Brigadier Harbottle and some others did a considerable amount of traveling, seeking media interviews and public forums from which to speak against allied military strategy. Harbottle took credit for arranging four meetings with retired Warsaw Pact generals in which there was unanimous agreement that the United States was a threat to world peace.

The propaganda drive of the Soviet fronts for 1986 was a coordinated campaign to dominate the UN-proclaimed International Year of Peace (IYP). As nongovernmental organizations (NGO) were granted consultative status with UN economic and social departments and agencies, the fronts positioned themselves to lead the IYP celebration. (The IYP chairman, Viacheslav A. Ustinov, was under secretary general for UN political and security council affairs.)

In all, there were more than 800 NGOs, only seven of which were Soviet-directed fronts. Yet, when the 250-member Conference on Non-Governmental Organizations (CONGO) elected a 20-member board to direct operations, five of the board members were representatives of the seven Soviet fronts. In January 1986, the CONGO met again in Geneva to hold conferences under the slogan "Together for Peace." Of the

18-member executive committee chosen to organize and direct the congress, six of the delegates were representatives of Soviet international fronts-and the WPC was separately selected to coordinate CONGO activities with the UN governing body.

Throughout 1986, these particular fronts, calling themselves closely cooperating NGOs, preached the Soviet propaganda line on disarmament and peace. They collectively moved toward a climactic assembly held in October 1986 in Copenhagen under the rubric of a World Peace Congress. An attempt was made to indicate that the congress organizers had been drawn from a broad political spectrum. Such was not the case, however: The WPC-at roughly three-year intervals-was the planner, organizer, and director. The last world peace congress was held in Prague in 1983. The WPC sought to conceal its role in the Copenhagen Congress, but Denmark's Social Democratic Party (SDP) exposed it and declared that this widely heralded peace gathering was nothing more than a Soviet front operation. The Danish press reported accordingly. This exposure did not stop the event, but the SDP spokesman issued this statement: "The members of the Congress Preparatory Committee do not represent a broad selection of political affiliations. We have checked the names of the people on the organizing committee and the vast majority are Communist."

Nevertheless, some 2,000 delegates and peace activists from around the world assembled to attack US policies, support the Soviet Union, and damn SDI. It seemed appropriate that the five-day peace congress ended in a wild melee when protesters against Soviet human rights violations attempted to make their point. After that, the Soviet international fronts were less vocal and more restrained, and Soviet propaganda was promulgated more directly by Soviet entities; for example, the Soviet Friendship Society.

The Gorbachev Era

When President Reagan met with General Secretary Gorbachev in Geneva in 1985, their views of disarmament revealed major differences. There was one area, however, in which all

participants at the summit appeared to be in agreement: the need to have a greater degree of cultural and personal exchange and a lesser degree of suspicion, animosity, and cold-war propaganda.

Perhaps it was a new beginning. The media proclaimed it the spirit of Geneva; Gorbachev called it glasnost (openness). It does not appear, however, that this spirit trickled down to the purveyors of Soviet active measures. Consider, for example, the following:

- The Tass disinformation report on US scientists developing ethnic weapons to be used against South African blacks was repeated as 'recently as June 1987.
- Post-Geneva Soviet and surrogate propaganda implied that the CIA was behind the assassination of Swedish Prime Minister Olof Palme.
- Post-Geneva Tass claimed that the US Air Force had bombed Honduran peasants with poisonous substances at night. (The charge was completely refuted by Honduran health officials.)
- Lies emanating from Moscow and carried by Soviet surrogates (e.g., the New Delhi *Patriot*) maintained that the CIA was involved in the assassination of Prime Minister Indira Gandhi, the Air India crash, and rebellion among the Sikhs.
- The Soviet press alleged that the United States continued to create biological warfare weapons when, in fact, the United States was in full compliance with the 1972 treaty that banned the production of biological and toxic weapons.
- Soviet sources alleged that the CIA perpetrated the 1978 Jonestown massacre in Guyana (a US congressman and 918 cult members were killed). The story appeared first in *Izvestiya* on 30 January 1987 and again in the Leningrad Komsomol (communist youth organization) newspaper on 10 April 1987. A particularly gruesome account, containing photographs from Jonestown, appeared in the 2-8 March issue of *Nedelya*, a Sunday supplement of *Izvestiya*. Soviet media accounts were based on the book, *The Murder of Jonestown A CIA Crime*, published by a Soviet Ministry of Justice publishing house.

The Soviet AIDS Campaign

A recent campaign on acquired immunodeficiency syndrome (AIDS) provides insight into the methods used by the Soviets to spread a totally false story; that is, that the AIDS virus was scientifically engineered in a US laboratory at Fort Detrick, Maryland, and released into the mainstream by criminals and homosexuals who had volunteered to be guinea pigs. In October 1985, *Literaturnaya Gazeta*, attempted to launch such a campaign through the New Delhi *Patriot*, but there was only sporadic pickup by the foreign press. In May 1986, the *Litgaz* newspaper of the Soviet writer's union tried again; again, there was little outside response.

During these scattered Soviet attempts to sell the idea that AIDS was a made-in-the-USA product, US Ambassador Arthur Hartman wrote letters of protest to the editors of the publications involved, but the letters were not published. The ambassador later made the letters public, pointing out that the accusations were false and that the scientific claims were ridiculous.

The Harare Nonaligned Summit (NAM) became the launch pad for another Soviet-directed AIDS disinformation campaign that was to have far more success than the previous attempts to sell the lie. For several months prior to the NAM, Soviet and pro-Soviet media had claimed that the US government (CIA) was out to wreck the NAM, but no mention was made of the US being responsible for AIDS.

The opening attack came just prior to the summit with articles in the *Harare Sunday Mail* and the *United News of India*, reporting the distribution of a scientific tract to the delegates titled *AIDS U.S. Homemade Evil, Not Made in Africa*. (Its actual title was *AIDS-Its Nature and Its Origin*, but it sought to sell the aforementioned thesis.) The false claims of the document failed to take hold at the conference, due in part to a swift retraction by the *Harare Sunday Mail*, which carried an interview with an American virologist on the faculty of the University of Zimbabwe. The virologist found the document to be totally without scientific merit.

There was no further mention of AIDS until Novosti, the Soviet news agency, reported from Moscow that two French

scientists had confirmed that AIDS was the result of bacterial warfare testing in the United States. That same day in Damascus, *Al Thawra* ran the Novosti account on its front page. Two days later, "Radio Prague" broadcast the same story in its English language Afro-Asian service program. Tass then repeated the disinformation that AIDS had been developed at Pentagon laboratories at Fort Detrick, Maryland. This story was also reported in Kampala in the leftist magazine *Weekly Topic*.

Later, the London *Sunday Express*, certainly no part of the Soviet active measures apparatus, ran an interview story with Professor Jacob Segal and his wife, Lilli, principal authors of the Harare Summit AIDS document. The *Express* reported that Segal, and to a lesser degree his specialist colleagues (Dr John Seale of London and Dr Robert Strecker of Glendale), contended that the killer AIDS virus was artificially created by American scientists during laboratory experiments which went disastrously wrong and that a massive cover-up has kept the secret from the world until today. This totally erroneous front-page claim had the effect the Soviets sought. Coming from London in a conservative publication, the disinformation caught hold.

In the week that followed, 14 USIS posts reported reprintings of the *Express* story. By end of the month, the total approached 30. Publications in Africa, Latin America, the Middle East, India, and Western Europe carried the disinformation. In Wellington, New Zealand, The *Dominion* ran the story on its front page under the heading, *Bizarre Theory on AIDS Origin*. In Helsinki, although a tabloid carried the piece, it also carried this quote from a noted Finnish AIDS expert, Dr Jukka Suni: "I know of Doctor Segal and of his reputation. He is a 'prophet of doom' who has been getting worse year after year."

In Eastern Europe, only in Poland was the *Express* article replayed. It was featured in the Polish government daily, which made a connection with the *Literaturnaya Gazeta* account of October 1985. Several days later, the Soviet press weighed in through Tass and *Pravda*. The Soviet official news agency used reports from its New York correspondent, who had cited out of context a National Academy of Science report on AIDS. Tass attempted to link factual scientific information with Segal's

Fort Detrick disinformation. Segal was again referred to inaccurately as a French scientist.

Pravda went a vicious step further, running an editorial cartoon that showed a man in medical dress handing a beaker full of swastikas suspended in liquid to a second man wearing a US military officer's uniform. The officer is handing the doctor a wad of dollars. The beaker is labeled "AIDS virus." A number of corpses lie on the floor. Ambassador Hartman again wrote letters of protest, this time to the editors of Tass and *Pravda*. As before, he received no response.

Result of USIA/State Response

Although the disinformation campaign was initially successful, rebuttals from USIA and State Department INR quickly helped to reverse original media acceptance of the Soviet effort. Adding to this was the stabilizing effect of two widely attended AIDS conferences in Brazzaville and Berlin. In Brazzaville, where representatives of 37 countries gathered under the chairmanship of Dr Johnathan Mann, AIDS director of the World Health Organization, no mention was made of the campaign. In Berlin, it was dismissed as being unworthy of comment.

As a result, many of the publications that had carried the *Sunday Express* story printed retractions (which included a modified backdown by the *Express* itself). In a stinging editorial, the *Hindustan Times* declared that not a single reputable scientific journal had supported the thesis that AIDS was man-made. Almost every Western specialist is convinced that the AIDS virus mutated naturally and spontaneously from an animal virus.

In Brazil, *O Estado de S. Paulo* observed that AIDS and *disinformatza* are very similar in their corrosive action: One infects and destroys the body while the other succeeds in shaking and disorienting the soul. There are two basic questions at the root of this Soviet active measures campaign: Where did the claim originate? Who are the scientists who have attempted to spread them?

In July 1983, the New Delhi *Patriot* published a letter from an unnamed "well-known American scientist and anthropologist

who wished to remain anonymous." The letter was a lengthy undocumented account of how the AIDS virus was developed by the CIA and the Pentagon. Fort Detrick, Maryland, was reported by the writer to be the place where the disease was created. He added just as incorrectly that a similar US laboratory in Lahore had bred super mosquitoes and other insects that could spread dangerous diseases such as yellow fever, dengue, and encephalitis. The only source the unknown writer gave for any of this information was the totally unreliable cult organization, the Church of Scientology.

Literaturnaya Gazeta used this rambling piece of gobbledygook as its source in its October 1985 story. So did the Segals in their document presented at Harare. Jacob Segal was born in Leningrad and was a longtime resident of the Soviet Union before moving to East Berlin. He is a 75-year-old retired biologist and self-announced AIDS specialist who failed to attend the mid-November Berlin conference on AIDS. He maintained that AIDS was first tied to Fort Detrick by a British researcher who published an article in a New Zealand journal. Segal's wife, Lilli, however, offered a different source-the East German Urania Press. Urania's prime function was to disseminate Soviet propaganda.

Lilli Segal is a retired researcher and professor of epidemiology. She survived Auschwitz and has been a resident of the GDR since 1953. She and her husband worked as biology instructors in Cuba for several years. Both have been retired from Humboldt University since 1983. Their AIDS thesis was absurd, according to world renowned AIDS specialists. It had no bearing on serious scientific knowledge of the virus. It was on a par with the Segals' attempt to link the surfacing of the disease in New York City with its proximity to Fort Detrick. Their report stated that criminals who had engaged in homosexual practices during the long time of their imprisonment "obviously" concentrated in the nearest big city after their release and it was therefore logical that the first AIDS cases should have been registered in New York. In fact, however, New York is 250 miles from Fort Detrick while Baltimore is only 45 miles and Washington, D.C., 50 miles from that installation. Further, President Richard M. Nixon called a halt to all offensive biological warfare experimentation

in 1969. In its place, a vaccine program was instituted at the US Army Medical Research Institute of Infectious Diseases. The laboratory's work was focused on finding vaccines against biological warfare.

Fort Detrick is not used entirely for military purposes. Of the 25 tenants on the installation, one is the Frederick Cancer Research Facility. It operates under the direction of Health and Human Services with a department devoted to AIDS research. It has never been a military component. Other research is conducted by the Department of Agriculture in both foreign and domestic crop diseases. Fort Detrick's *raison d'être* is to cure, not to inflict; to prevent, not to infect.

It should be added that neither Dr John Seale, London venereologist, nor Dr Robert Strecker, California gastroenterologist, both of whom were quoted in the Sunday Express, subscribed to the disinformation regarding Fort Detrick.

Conclusion

The twisted course of the Soviet active measures AIDS campaign can be traced back to a Soviet-aligned Indian newspaper. It quoted an unnamed individual whose line of lies took root in the Soviet press and briefly flourished via a Soviet-bloc document that was completely lacking in scientific credibility. Later, a new piece of AIDS disinformation emerged from India. It attempted to link the disease to a Union Carbide pesticide. Still later, a Communist party member in the Indian parliament sought to press the AIDS-made-in-the-US line. Nevertheless, the disinformation boomeranged on the Soviets; many publications around the globe have come to recognize and understand the nature of this Soviet active measure.

Appendix A

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Weinberger Forgery

A few years ago, a forged document purporting to be a speech by US Secretary of Defense Caspar W. Weinberger surfaced in the Federal Republic of Germany. The document is dated 25 November 1983. No such speech was ever made, and Secretary Weinberger never made the remarks attributed to him. The document was a complete fabrication. Its aim was to convince Europeans that the US purpose in developing the Strategic Defense Initiative (SDI) was not only to gain US military superiority over the USSR but also to dominate its NATO allies. Both goals were supposedly to be accomplished largely by US control of space through SDI, which was described in the forgery as an offensive system.

The concepts used in the document did not reflect US government thinking, but were, in fact, what the Soviets wanted West Europeans to believe about US views. Although for the most part the forgery was written in acceptable English, several mistakes in word usage indicated that the drafter's first language was not English. For example, it asserted that the United States sought "prevalence" over the Soviet Union at all (military) levels. The forger(s) confused *prevalence* with *superiority*.

A major point made in the forgery was that the United States would suffer a disastrous depression without SDI. However, the key and distinctive error had the secretary of defense commenting that the Soviets have not been engaged in an SDI program of their own. In fact, Secretary Weinberger, the president, and other leading US defense spokesmen had pointed out repeatedly that Soviet scientists had been at work on a similar project since 1968.

The Weinberger forgery is one of several addressed in this report. All sought to undermine US policies and intentions.

Disinformation Hits Home

Soviet disinformation attempted to "hit home" with a forged letter purportedly written by Herbert Romerstein, United States Information Agency (USIA) Soviet active measures coordinator to US news organizations. The Washington Post

approached USIA with the forged letter, which Mr Romerstein had supposedly sent to Senator-Select David Durenberger (R.-Minn.), chairman of the Senate Select Committee on Intelligence. The forgery was cleverly conceived but poorly executed. Its purpose was to smear USIA by making it appear that the agency was proposing that the United States should make false claims about the Chernobyl nuclear accident.

The forgery alleged that Mr Romerstein proposed to Senator Durenberger that USIA disseminate rumors about the accident. The forgery suggested that "our associates in European information media" spread reports that would include the following details:

- the "number of victims should be alleged to be somewhere between 2,000 and 3,000";
- a "mass evacuation of population from the 100-mile zone" around Chernobyl should be alleged to have occurred; and
- "transport problems, shortage of various goods, chaos, and panic should also be given publicity."

The forgery also recommends that "our allies should be influenced so as to make a request for compensation for contamination of their territory." The document takes advantage of the insights offered by hindsight. It is backdated to 29 April 1986, the day after the Chernobyl accident was first reported by the Soviets and just before rumors (of exactly this nature) began to appear.

Had the forgery been accepted by the press, it would have given currency to the notion that rumors about Chernobyl had been generated by USIA rather than by the Soviets' refusal to release sufficient data about the events surrounding Chernobyl. At the same time, USIA would have been cast as a manipulative, rumor-mongering propaganda apparatus free to dictate to senators and unnamed "associates" in the European media.

Poor execution, however, ruined the Soviet attempt. The forgery was not composed correctly and it contained an incorrect address for Durenberger. Its falsity was easily ascertained by journalists who telephoned the USIA and Senator Durenberger's office.

Ironically, Romerstein's forged signature was taken from a letter he had previously sent to Lt Gen Robert L. Schweitzer,

head of the Inter-American Defense Board, informing General Schweitzer about a forgery purportedly written by him. Even more obvious, the word copy in Romerstein's handwriting at the top of the Chernobyl forgery is identical to a notation made on copies of the letter to General Schweitzer.

The forgery had all the hallmarks of a Soviet active measure, although its sloppiness probably indicated an operation executed by personnel in the United States rather than those in the Moscow Center, who could be expected to produce a more professional product. In analyzing forgeries, one key is to determine who benefits. Certainly, Soviet purposes would have been served if the USIA had been blamed for the bad press that was actually caused by Soviet intransigence and stonewalling over Chernobyl.

Levchenko on Dobrynin

At a USIA briefing on 20 August 1986, at Washington's Foreign Press Center, former KGB major and active measures specialist Stanislav Levchenko made some observations about Anatolii Fedorovich Dobrynin, former Soviet Ambassador to the US who later headed the Soviet Communist Party Central Committee's International Department.

Mr Dobrynin's appointment to the International Department post had been the subject of much speculation in the American press. As a former staff member of the International Department, Levchenko's perspective on this issue was instructive.

Basically, Levchenko discounted the theory that Dobrynin's appointment was "positive for the future development of healthy relations between the Soviet Union and the United States."

I dare to disagree with this point because if Mr Gorbachev really wanted him to do that kind of job, he could have made him, let's say, first deputy foreign minister in charge of bilateral relations with the United States, and he could spend all his days and nights working in that field. Instead, Anatolii Dobrynin becomes chief of the International Department, which, in another parlance, is the largest subversive mechanism in the world. The purpose of that department is not enhancement or deepening of bilateral or multilateral relations at all. It's just the contrary. It is the department which, among many other

functions, is disseminating disinformation in the interests of the politburo and running all sorts of operations in that field.

Levchenko believed that Dobrynin would reinvigorate the active measures operations of the International Department and use his knowledge of the United States to bring a new professionalism to its activities.

He, of course, knows about some flaws which the active measures machine had during the last couple of years when his predecessor, Boris Ponomarev, was really getting old. I personally have no doubt that Mr Dobrynin will try, within a rather short period of time, probably within this year, to restructure the mechanism in such a way that it will work better, on a much more professional basis, that sloppiness will probably disappear, and that the scale of operations against primarily the United States and NATO countries on a global basis will definitely be enhanced. That's my projection.

Levchenko's final assessment on Dobrynin: "He is the person who has close to perfect knowledge of the United States. He's probably one of the best specialists in the Soviet Union on the United States, who is generally considered to be a very talented, bright person who is, of course, a devoted Communist and quite a devoted person to the cause of the politburo."

National Security Council Forgery

A very well-done and ambitious forgery surfaced in Lagos, Nigeria. It bears the title, "US Strategy in Foreign Policy 1985-1988" and falsely claims to be a "copy of a summary paper on US foreign policy approved by the (United States) National Security Council (NSC) in February 1985." A section of the forgery dealing with purported US policy in Africa was published in Lagos in the weekly magazine Africa Guardian. Its broad scope and relative professionalism increase the chances that it may reappear in other areas.

The forgery was a 10-page, single-spaced document lacking any identifying symbols and classification markings. It was divided into eight topical sections dealing with US policy toward important regions. It was cleverly crafted, skillfully weaving together US policy with phony assertions that would outrage foreign as well as domestic audiences. For example, the United States was falsely portrayed as believing that "a

preemptive strike potential, together with guidance, communications and intelligence systems of high sophistication, would guarantee our security to a degree which would permit us to exert severe pressure on the Soviet Union to the point of issuing an ultimatum if necessary."

Other false assertions were that:

- The United States was seeking "the establishment of an effective first-strike (nuclear) capability by the year 1995."
- "Strategic superiority" was the goal of US policy, and advances in military technology might "suggest" or "even demand a preemptive strike."
- NATO allies should be pressured "to conform to US policies."
- The US problem with the Greek leadership was that it had an "independent attitude."
- The United States is opposed to curbs on nuclear and chemical weapons.
- In Nicaragua, "US military intervention cannot be ruled out, keeping in mind the lesson of Grenada."
- The Organization of American States "should be made to accord with our national interests."
- A negotiated settlement between Vietnam and an ASEAN bloc over Cambodia "in no way corresponds with US interests."
- Japan must agree to a stronger US military presence in that country and to increase its military strength through the purchase of US arms.
- The United States will "seek to hold China to policies corresponding with US global interests."
- The United States feels that China has an "unpredictable political future" and an "absence of stable power succession procedures."
- The United States opposes the successful implementation of China's modernization program because it "might lead to rivalry or even confrontation with the United States."
- "Nothing short of Qadhafi's assassination will bring any significant change in Libyan policies of support for international terrorism."
- Israel is referred to as "the Jerusalem government," implying recognition of Jerusalem as the capital.

- The United States is planning to use the rapid deployment force for "preemptive operations" if a "threat to our interests" arises.
- The Soviet presence in Afghanistan is seen as a "propaganda bonus" which can be utilized to increase US military and political power in the Persian Gulf region, perhaps even leading to "the restoration of American influence in Iran."
- The main lines of US policy in Africa are to exploit the area as a necessary source of raw materials and to control African affairs in conjunction with South Africa.

Many other themes and subthemes were planted in this lengthy forgery. As with the other forgeries mentioned above, this one appears to be a product of the Soviet Union or one of its surrogates. The themes cited reflect Soviet claims about US policy.

The Assassinations of Olof Palme and Indira Gandhi

If one were asked to name the major similarity between the gunning down of Swedish Prime Minister Olof Palme and the gunning down of Indian Prime Minister Indira Gandhi, the answer would be that the Soviet Union, by innuendo, falsely accused the Central Intelligence Agency (CIA) of committing both crimes and repeated the lie through its propaganda outlets.

On 31 October 1984, Prime Minister Indira Gandhi of India was assassinated by Sikh members of her bodyguard. Several hours after the murder, "Radio Moscow" declared the assassins had "received their ideological inspirations" from the CIA. "Radio Moscow" broadcast a familiar litany of disinformation, accusing the CIA of guilt in the assassination of world leaders over a 25-year period.

Pro-Soviet Indian publications were quick to pick up the Moscow line. They added their own embellishments, some directly accusing the United States of having murdered Mrs Ghandi. These claims were replayed by the Soviet press. Responsible Indian newspapers would have none of it, however. A *Hindustan Times* editorial summed up public

reaction: "The Soviet media saw in the grim event a golden opportunity to mount cold war propaganda against the United States.... Cold War propaganda on such a tragic occasion by the Soviet Union is uncalled for and most unfortunate." President Reagan called the Soviet allegation, "the world's biggest cheap shot in a long, long time."

The Soviet lie became a double lie when Secretary of State Shultz confronted Soviet Prime Minister Tikhonov at Mrs Ghandi's funeral and Tikhonov denied that his country was making such claims. The Indian government, in a determined investigation of the assassination, found no trace of any US involvement.

These events occurred about a year before President Reagan met with General Secretary Gorbachev in Geneva and some 15 months before the murder of Swedish Prime Minister Palme. It was hoped that the Geneva meeting would bring a change in the kind of outrageous disinformation that had been spewing out of Moscow day in and day out.

Prime Minister Palme was killed on a Friday night. The next day, Tass published a commentary on Palme's death. The commentary was written by Anatoly Krasikov, deputy director of Tass. Krasikov's commentary, according to the Swedish daily *Aftenpost*, "indicated that CIA is behind the murder." This commentary employed exactly the same kind of slippery innuendo "Radio Moscow" had used in implying that the CIA was responsible for Indira Ghandi's assassination.

The next day (Sunday, 2 March), *Pravda*, the official Communist Party newspaper, added its commentary. The writer, Chingiz Aytmatov, academician of the Soviet Academy of Sciences and delegate to the 27th Congress of the CPSU, raised a basic question and then answered it. Who was, or who were, the assassin(s)? We do not yet know, but it is clear even now that the terrorist crime was committed by forces that are interested in shifting whole countries and regions to the right and in intimidating the public, which heeds the voice of an honest individual.

Response from the Swedish newspaper *Morgenbladet* was swift. In an editorial titled "Grotesque," it attacked Gorbachev's 'mouthpiece' in choosing to exploit the situation at a "tragic moment." It went on to say, "the real question is what Gorbachev

means with his fine words about detente and peace when he allows such gross propaganda. There is brutal contradiction between the hopes he has expressed for a relaxation of internal tension and his continued hammering on public opinion with anti-American propaganda."

On Monday, the New Delhi Hindi daily *Navbharat* carried a Moscow dateline report: "The official agency Tass has alleged that the assassination of Swedish Prime Minister Olof Palme was the handiwork of the CIA." Other Indian publications, particularly those that were pro-Soviet, repeated the accusation and parallels were drawn between the political viewpoints of Mrs Ghandi and Mr Palme.

In the course of the next few days, the Tass-Prauda effort was replayed in a number of locales-Ghana, Malta, Australia, Uruguay, Peru. In the latter two countries, the publications were Communist Party weeklies. In Australia, the conservative daily *Australian* concluded an account by its Moscow correspondent with a quote from former Swedish Prime Minister Falldin: "I refuse to believe it is a political assassination.... This must be the work of a lunatic."

Elsewhere around the globe, the Soviet accusation was ignored; but that was not the end of it. Seventeen days after the murder, Aytmatov, the writer of the Prauda commentary, was interviewed by the Swedish newspaper *Dagens Nyheter*. "Aytmatov was now clearly alarmed that his words would be interpreted" to suggest the CIA had committed the crime. But the Prauda writer's retraction was something less than unequivocal: "The people who murdered Olof Palme do not need to come from the United States or the CIA-even though it does seem to be the case of reactionary forces."

The Soviet academician was simply following the standard Leninist technique of hedging his Prauda commentary with obfuscation. However, just as the Soviet-oriented accusations of CIA guilt in the assassination of Indira Ghandi continued to surface, so, too, did those about Olof Palme. His name was added to the long list of assassinated leaders that Soviet disinformation organs recited on a regular basis as victims of CIA operations.

Yellow Rain Again

Certain characteristics in Soviet active measures operations followed a consistent pattern. One was to try and reverse blame for Soviet Military actions by accusing the United States and its allies of carrying out exactly the same acts. This was done not only by describing the Soviet techniques originally followed, but also by employing the same terminology; for example, *yellow rain*.

In March and November 1982, the US State Department presented to the United Nations reports of "Soviet involvement in provision and use of toxin weapons." The reports offered "information, evidence and an analysis of results the United States had obtained on the use of toxin and other chemical war agents by the Soviets in Afghanistan, and by the Lao and Vietnamese under Soviet supervision in Laos and Kampuchea." The victims referred to chemical agents that had been sprayed and dropped on their villages by plane, helicopter, and artillery shell as yellow rain. Between August 1983 and February 1984, further evidence of yellow rain attacks in Southeast Asia were submitted by the United States to the UN. These charges were angrily denied by the Soviets, who submitted their own scientific paper. It maintained that Agent Orange, the defoliant used by the US to clear jungle areas during the Vietnam War, had contaminated the elephant grass. Its infected spores, the Soviet government claimed, had been carried by prevailing winds into Laos and Kampuchea where they had tainted the environment and brought illness and death to those affected. Scientifically, this explanation was recognized as hogwash.

By the end of 1985, reports of yellow rain in the aforementioned areas had "diminished in number." But on 7 February 1986, yellow rain was suddenly in the news again. This time, the area was Honduras and the culprit was the US Army. The newspaper *Tiempo*, reporting from San Pedro Sula, quoted a leftist trade union publication which maintained that the US Army was spraying lethal chemicals on civilians in northern municipalities for experimental purposes. The chemicals, it reported, caused fainting and convulsions. Further, it said that strange sores appeared on the bodies of

children. The report said that the affected communities had requested investigations by health authorities.

In the first published accounts of the reported problem, no mention was made of yellow rain. On 22 February, Tass quoted *Red Star*, the official Soviet Ministry of Defense newspaper: "The United States is carrying out criminal experiments with chemical weapons in Honduras. . . . U.S. aircraft have been scattering yellow toxin in the air similar in its characteristics to the highly toxin 'Agent Orange.' . . . Eyewitnesses to the secret flights by the US aircraft say that 'yellow rain' falls every time the aircraft appear."

That same day, "Radio Moscow" offered a commentary, repeating the same accusations and using the same terms. But the accusation went even further. The commentator said the Pentagon was preparing to launch chemical and biological warfare against Nicaragua and was responsible for an epidemic of dengue that had hit that country earlier. Some of these charges were picked up by the Panamanian press, which added that the yellow rain story had been born of a theory "between groups of the Honduran Left."

Previously, the US Embassy in Tegucigalpa had denied that US forces were testing chemical weapons anywhere in Honduras, "least of all against the civilian population." Not only had a US medical team investigated the charges, but so had the US military and a Honduran congressional group. Under the heading "Congressmen find downpour of calamities instead of yellow rain," the newspaper *La Prensa*, along with other Honduran publications, including *Tiempo* (which had broken the original story), cited the cause of the problem as an epidemic of mange stimulated by a lack of hygiene; the germ had spread through physical contact.

The daily *El Haraldo* carried an interview with Honduran Army Chief of Staff General Humberto Regalado Hernandez, who said that a military investigation coincided with state and private reports. The disease, he said, had been known since biblical times as scabies and was not the result of chemical gases dropped from unidentified aircraft on evening flights. The only flying in the area had been done by Honduran crop dusters who were spraying sugar cane.

The general added that he believed the purpose of the stories was to discredit US military detachments that were training in Honduras. Another possibility, he said, "is that the USSR, via Cuba and Nicaragua, is using sophisticated methods.... The presence of 'yellow rain' in our homeland was ruled out, but there is evidence that the local fifth column is carrying out disinformation campaigns ordered by the Soviet connection in Tegucigalpa." This Soviet yellow rain story was turned off by the combined actions of the Honduran government and the press.

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Appendix B

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Former Soviet International Front Organizations

Afro-Asian People's Solidarity Organization (AAPSO)
Christian Peace Conference (CPC)
International Association of Democratic Lawyers (IADL)
International Federation of Resistance Fighters (IFIR)
International Institute for Peace (IIP)
International Organization of Journalists (IOJ)
International Radio and Television Organization (OIRT)
International Union of Students (IUS)
Women's International Democratic Federation (WIDF)
World Federation of Democratic Youth (WFDY)
World Federation of Scientific Workers (WFSW)
World Federation of Trade Unions (WFTU)
World Peace Council (WPC)

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Appendix C

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Generals for Peace and Disarmament

British Guiana

Generalmajor Gert Bastain

Canada

Major General Leonard V. Johnson

Federal Republic of Germany (West Germany)

Generalmajor Gunter Vollmer

France

Admiral Antoine Sanguinetti

Greece

General Georgios Koumanakos

Admiral Miltiades Papathanassiou

Brigadier Michalis Tombopoulos

Italy

General Nino **Pasti**

Netherlands

General-major Michiel H. von Meyenfeldt, Chairman

Norway

General Johan Christie

Portugal

Marshal Francisco da Costa Gomes

General Rangel de Lima

United Kingdom

Brigadier Michael Harbottle OBE

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What Soviet PSFOP Mirror Imaging Can Tell Us



James Melnich

Soviet psyoperators were sometimes ignorant of significant nuances concerning the societies they targeted for propaganda development. Though time and experience tended to improve certain technical aspects of Soviet PSYOP, Soviet psyoperators sometimes continued to reach down into their own limited Soviet experiences for examples and themes that they projected onto the Western societies they were attacking in their propaganda. Study of this mirror-imaging process can be very revealing and may point out important weaknesses. This is true even though some segments of the Soviet PSYOP hierarchy appeared to have gained in sophistication. Identifying some of these tell-tale characteristics will help us to assess the overall Soviet PSYOP threat.

Glasnost, Gorbachev, and Disinformation

The campaign of glasnost in the Soviet Union under Mikhail S. Gorbachev, with its emphasis on a more open Soviet press, by no means signaled an end to Soviet disinformation. On the contrary, since the press in the USSR began writing on many topics previously considered taboo, there were more opportunities for mirror-imaging disinformation to present itself—perhaps with some new twists.

For example, we can examine one of Gorbachev's perceptual blunders concerning the United States and see how it relates to the concept of mirror imaging. In early 1987, Gorbachev met with several US congressmen in Moscow. In the course of their discussions, he suggested that America create separate states for blacks, Puerto Ricans, and citizens of Polish background.¹ Apart from this being a ludicrous and insulting

recommendation, it provides some insights into the Soviet system. To begin with, it demonstrates Gorbachev's ignorance of the internal policies of the United States. Further, it assumes that we have a Polish problem that must be dealt with. From the standpoint of mirror imaging, it suggests that the Soviets dealt with many of their minority problems by sending minorities to autonomous regions somewhere in the Soviet Union.

The Soviets had serious minority problems, especially with their Central Asian Muslims. There have been riots in Kazakhstan, demonstrations in the Baltic states, demands by Crimean Tatars for their rights, and pressures for greater Jewish emigration. Demographic analysis of the Soviet population suggests that the Great Russian nationality itself was becoming a minority in its own country as Central Asian birthrates skyrocketed.

As Soviet policymakers sought answers to these problems, Soviet propagandists were producing disinformation about an alleged Western ethnic bomb supposedly targeted against US minorities. This propaganda is an excellent example of mirror imaging. What some in the Soviet Union undoubtedly wished they themselves had, they projected as a policy practiced by their ideological enemy. This disinformation example shows us both the Soviet propagandists' intense prejudice and how limited their worldview really was. It is an example that is repeated over and over in a variety of contexts, whether one is considering AIDS, baby parts, or chemical weapons.

One might add that, although the Soviet Union did have its share of extremely sophisticated propagandists, such as Georgii Arbatov of the Institute of the USA and Canada, Politburo member Aleksandr Yakovlev, and Vladimir Posner of Radio Moscow, the fact that Gorbachev himself could make such an error should tell us something about the attitudes of rank-and-file Soviet propagandists.

Ultimate Enemy Projections

Soviet propaganda was rife with allusions to the ultimate enemy, whether that enemy be world imperialism, Nazi storm troopers, supporters of SDI, Zionism, or religious activists in

the Soviet Union. The ultimate enemy was usually portrayed as being antihuman and opposed to everything the Soviet Union stood for. For example, Zionism was defined as a "deadly enemy of the Soviet State from its very beginning."² There was usually a plurality of Soviet ultimate enemies, depending on the international situation. An ultimate enemy in Soviet propaganda was first dehumanized, then made part of an anti-Soviet worldwide conspiratorial network (i.e., Afghan freedom fighters became bandits fighting as agents of US imperialism; unofficial religious groups in the Soviet Union were linked with dark forces from abroad).

In attempting to describe the ultimate enemy, whoever and whatever that might have been at a given time, Soviet propagandists sometimes drew from actual Soviet acts of barbarism. Thus their disinformation, as a form of mirror imaging, reflected back into the pool of Soviet reality. For one example, I will draw from personal experience.

In the early 1980s, I met a Soviet emigre woman who was convinced that evangelical Christians in the Ukraine sacrificed babies by rolling them in barrels with spikes as part of some religious ritual. She, of course, had never witnessed such a thing, but said that she had heard about those people when she lived in the Soviet Union. Obviously, she was the victim of very gross Soviet disinformation-and there were other Soviet campaigns in which other religious groups were under attack by the state. One can find numerous articles accusing Soviet Baptists of drowning children or performing other dark and perfidious acts-the whole purpose being to defame the targeted group and further isolate them from the general population.

Nevertheless, the matter of the spikes continued to bother me: why such a particular disinformation image? Where did it come from? Did a propagandist simply make it up out of thin air, or did it spring from some other source? I have no final answer to this question, but a year or so later, when I was reading Michael Voslensky's work, *Nomenklatura: The Soviet Ruling Class*, a particular passage leapt out at me. Voslensky, in quoting a 1920s account about the Cheka (the earliest forerunner of the KGB), recounted various Cheka methods of torture and execution of their victims. One such method was

reported this way: "at Voronezh they put their victims naked in barrels spiked on the inside and rolled them."³ This account and recent Soviet disinformation against religious groups are separated by more than one-half century. Are they somehow related, or did later Soviet propagandists simply make up the recent vicious accusation out of thin air? One cannot be certain, of course, but I would posit this as a possible example of a mirror image projected out of the past.

Zionism and Nazism

In examining the concept of ultimate enemy in Soviet propaganda, we might also consider Soviet disinformation that compared and linked Zionists with Nazis. One would be hard-pressed to find a more vicious lie, but such comparisons fit Soviet concepts of the ultimate enemy very well. They also furthered Soviet foreign policy goals in the Middle East. Virulent anti-Semitism was imbedded in Soviet society, along with fears of a Jewish conspiracy dating back to the fraudulent Protocols of the Elders of Zion. There was also the memory of Nazi fascism, which cost 20 million Soviet lives during World War II and the fear that German revanchism would once again rear its ugly head. Soviet propagandists simply combined the two images.

What this tells us is that the Soviet propaganda machine (regardless of its short-term goals for the propaganda, such as defaming Israel in third world countries) was itself convinced that there were many real enemies, both within and outside the Soviet Union.⁴ These were then reduced to extremely crude and violent images and made a part of an ongoing international conspiracy. They probably also believed that such ultimate enemy projections were both necessary and useful for their own population. While many societies resort to ultimate enemy projections and stereotypes in propaganda during wartime, the Soviet Union appears to have been one of the few nations to do it consistently over time during periods of peace.

As a footnote, one might consider how sensitive the Soviets themselves were to being stereotyped in the West. The TV series "Amerika" showed the Soviets as adversaries, but adversaries possessing many human characteristics—a far cry

from the ultimate enemy. Yet the program was denounced in almost apocalyptic terms by Soviet spokesmen-and threats were made prior to its airing. Soviet propagandists continued to show daily hatred against the West on a massive worldwide scale, with only an occasional protest from the West when the results of a given lie would have had serious and undeniable consequences.

The Invasion of Grenada

In late 1983, the Soviet newspaper *Izvestiya* not only attacked the United States for invading Grenada but also accused US forces (allegedly quoting the Mexican newspaper *El Dia*) of using chemical weapons to poison some 2,000 Grenadens, including women and children, and of recording their suffering and deaths on film. This gruesome fabrication, which was read by millions of Soviet citizens, further stated that the bodies were shipped back to the United States for additional study. The author of that article was A. Kuvshinnikov.⁵

For a long time I tried to discover who A. Kuvshinnikov was or is, or whether it was a pseudonym. Then another article by A. Kuvshinnikov appeared in *Izvestiya* on 21 August 1987. This article was said to be from the US correspondent at the USSR Foreign Ministry Press Centers. It is likely that these articles were written by the same person. In his especially pernicious article about Grenada, Kuvshinnikov attempted to set up a parallel between the WWII Nazi death camps with their human experiments and the US invasion of Grenada. This is another example of the ultimate-enemy image. No citation was given for *El Dia*, which was described by *Izvestiya* as an influential Mexican newspaper.

Soviet propagandists apparently believed that their audience would accept such base lies to some extent. And were these articles also designed to mitigate the effect of certain Soviet actions? In my opinion, they may tell us in part what the Soviets themselves have done or are capable of doing. The horrors of Afghanistan, as recounted by refugee survivors of Soviet atrocities, come to mind. Were the consciences of some Soviet veterans returning from Afghanistan (who may have

participated in brutal crimes against civilians) eased when they thought the United States had done worse?

Mirror imaging in Soviet propaganda is, I believe, an analysis area of great value to all who study the former Soviet Union-especially those who seek to understand the nature and depth of Soviet PSYOP.

Notes

1. *Novoe Russkoe Slovo* (The New Russian Word), 19 April 1987.
2. See V. Alekseev and V. Ivanov, "Zionism in the Service of Imperialism," *International Affairs* 6 (1970): 59, in Baruch A. Hazan, *Soviet Propaganda: A Case Study of the Middle East Conflict* (New Brunswick, N.J.: Transaction Books, Keter, 1976), 150.
3. Michael Voslensky, *Nomenklatura: The Soviet Ruling Class* (New York: Doubleday & Co., 1984), 279, in P. Milyukov, *Rossia Na Perelome I* (Paris, 1927): 193.
4. For a fascinating account of alleged Politburo views of worldwide conspiracies, see Arkady N. Shevchenko, *Breaking with Moscow* (New York: Alfred A. Knopf, 1985).
5. A. Kuvshinnikov, *Izvestiya*, 9 December 1983, 4.
6. *Ibid.*, 21 August 1987, 4.

Indoctrination of Hate

Lev Yudovich



Soviet military doctrine required the soldier to develop a strong feeling of hatred. This hatred was cultivated so the soldier would (1) believe in victory, (2) be willing to act in a dangerous situation, and (3) be psychologically prepared to operate under the conditions of modern war.

In case of war, the Soviet soldier will face a strong and brutal enemy who has been well indoctrinated in a spirit of irreconcilability toward the Soviet people. The Soviet soldier must therefore have a clearly defined attitude for the enemy: hate, contempt, and a feeling of superiority over them. We must show the soldier the strong and weak points of our enemies. We have to define the enemy in terms of his psychological characteristics (or stereotypes) that are related to his nationality or ethnic group.¹

The Soviet soldier was constantly being indoctrinated to develop hatred for the West. The indoctrination of hate started with the myth of a US threat to the Soviet Union. This myth allowed Soviet political and military leaders to keep the entire country in a state of tension and stress. The myth also made it easier to justify military spending and the consequent lowering of standards in domestic life. The American threat to the Soviet Union was the fundamental thesis of Soviet propaganda.

The aim of Soviet propaganda was to create a stereotyped pattern of thinking and reacting. The myth helped Soviet military and political leadership instill prejudice in the soldier. He was trained to become suspicious of foreigners and their way of life. His suspicion and deep distrust became the basis for hate. According to the Soviet view, "the political myth is an

This article provided courtesy of the US John F. Kennedy Special Warfare Center and School, Fort Bragg, North Carolina. Part of an original work titled, *An Assessment of the Vulnerability of the Soviet Soldier*.

ideological tool of the imperialists and a tool for psychological manipulation of the masses" (Col Gen D. Volkogonov). Thus the Soviet authorities use the very same technique that they accuse the enemy of employing.

The Soviets instilled hatred for the United States even in peacetime. They justified this approach by explaining that, in the past, the final moral hardening of the soldier could be achieved during the course of combat. In the future war, however, there will not be enough time for psychological preparedness. The soldier must, therefore, be prepared through training. He must put aside any moral convictions he might have and be oriented only toward accomplishing his mission.

Hate produces excitement and excitement can overcome the soldier's fear. To develop hatred, political workers used a wide variety of indoctrination methods (e.g., discussions in small groups, lectures, and political reviews) and every form of media. Deception, falsification, discreditation of Western leaders, and even cartoons became methods for building up hate. The US soldier was shown as a hireling, a mercenary, and a freelance murderer with a very low moral level. He had no convictions, and his main reason for fighting was to get money. The Soviets stated that the US soldier was not reliable in Vietnam. As the military situation in Vietnam got worse, said the Soviets, there were more deserters, and racial tensions increased. The reason they presented such distorted views was simple—to cultivate hate.

In 1952 the Military Publishing House of the Ministry of Defense of the USSR published a book written by Col Polkovnik B. W. Karpovich titled *The Ideological Indoctrination of Soldiers in the Armies of the United States and Great Britain*. This book was aimed at military readers. The author pictured American soldiers as fascists and animals.² When a young man enters the US Army, he stated, all training is aimed at turning him into a skilled murderer.³ American officers encourage US soldiers to be murderers and rapists. In the Korean War, according to the colonel, all American soldiers raped Korean women and girls, and officers created special brothels in which Korean women were forced against their will to provide sexual services for the soldiers.⁴ American soldiers,

he said, far exceed the Nazis in their gangsterism, brutality, and greed.⁵

Although those statements were made around 1952, this method of describing American soldiers persisted. Despite détente, indoctrination of hate continued. In 1986, for example, the Main Political Administration ordered the use of a film, "Hate the Imperialists,"⁶ and a 1968 article, "The Psychology of Murder and Torture," which purported to picture the American soldier.⁷ Political workers indoctrinated hate during every major maneuver from Dnepr to Shield '84.⁸ One dramatic example of such indoctrination utilized the site of Nazi victims' mass graves. Veterans and former partisans assembled for ceremonies at those sites and stated their recollections of Nazi brutalities. The political workers pointed out that imperialists had produced these atrocities and had also committed acts of brutality in oppressing national liberation movements that developed in other countries. These comparisons were used to unmask the imperialistic threat of Soviet enemies-the Americans.

Political workers in the Strategic Rocket Forces used every moment of their contact with soldiers, even appealing to the soldiers while they were on combat alert duty. Soldiers on duty in underground rocket bunkers were visited by political workers.⁹

Even in the face of new political thinking aimed at reducing the mutual military threat of the Soviet Union and the United States, the Soviets continued to instill hatred for Americans in their regular indoctrination programs. For example, a Soviet military journal included an article stating that hatred should be developed because "hate is the most important quality of the soldier and sailor since it promotes vigilance and combat readiness. Our hatred for imperialist plunder has deep roots. Our class adversaries are stained with the blood of millions of Soviet people who were killed during the wars initiated by imperialist aggressors. These imperialists are responsible for the trouble and suffering of millions of people all over the world. Our right to hate the imperialists is justified by their current blood policy and their intent to invade our homeland with weapons of mass destruction."¹⁰

The Soviets were developing not only hatred but also arguments to justify it and explain to the Soviet soldier why he should hate the Americans. An important reason for hatred was to overcome the Soviet soldier's interest in the American lifestyle and any sympathy he might have for such American items as jazz, cars, and freedom to travel. Hatred was used to build up a distrust of everything foreign.

During the fifties, there was little difference between the Soviet military evaluation of the American soldier and the evaluation used in propaganda. Both evaluations were summarized by F. O. Mikchei: "American soldiers are very dynamic and have good technical skills, but they lack discipline' and have low moral qualities. They have only a narrow political mental outlook.'" In the seventies, that evaluation started to change.

The majority of Soviet military writers pointed out that, in a future war, American soldiers would be well indoctrinated for fighting the Soviet Union.¹² "The future war will be very severe because the American soldier has a very strong anticommunist view. He is aggressive and ready to carry out his officers' orders. He is ready to be exposed to reasonable risks. He is obsessed with the idea that he is a superman. However, he is a selfish person, wants to make a profit, uses drugs and alcohol, and he is inclined to desert."¹³

Although Soviet military leaders changed their assessment of the American soldier, Soviet propagandists clung to their old picture of the American military gangster-murderer. Because the good fighting quality of the American soldier was recognized, propaganda was increased. Every attempt was made to show that the American soldier was actually an object of scorn. The propagandists stressed the message that the American soldier must be thoroughly hated. Such hatred produced the Nazi holocaust.

Notes

1. M. P. Korobeinikov, *Sovremenniy Boy I Problemi Psikhologii*.
2. Polkovnik B. W. Karpovich, *"Ideologicheskaya Obrabotka Soldat Armii USA i Anglii"* (Moscow: Voenizdat Ministerstva Oborony, 1952), 10.
3. Ibid., 53.
4. Ibid.

5. Ibid., 61.
6. *Kommunist Vooruzennikh Sil*, no. 2, 1986, 82.
7. *Voyenny Vestnik* 4, 1968, 119.
8. *Voyenny-Istoricheskiy Zhurnal* 3, 1987, 67.
9. *Kommunist Vooruzennikh Sil*, no. 3, 1987, 39.
10. *Communist of Armed Forces* 14, July 1986, 71.
11. F. O. Mikchei, *Atomnoye Oruzhie V. Armii* (Moscow: Izdatelstvo Inostrannoi Literaturi, 1956), 39-40.
12. Korobeinikov, 9.
13. K. Volkogonov, *Psihologicheskay Voyna* (Moscow: Voennoye Izdatelstvo, 1984), 263.

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Intelligence and Psychological Operations



Col Joseph S. Gordon, USAR

Intelligence is an inextricable element of PSYOP in all phases of its activities, from the planning and conduct of operations to the evaluation of its effectiveness. For this discussion, PSYOP intelligence includes that which is generated by a PSYOP organization's own research and analysis assets as well as the intelligence which is obtained from other agencies. The major areas of intelligence activities in support of PSYOP are research, target analysis, pretesting and effects analysis, and propaganda analysis. ¹

Research

Research is geared to support the mission of PSYOP, which is to create in hostile, friendly, or neutral foreign groups the emotions, attitudes, or behavior to support the achievement of national objectives. The effective PSYOP campaign requires systematic research of the highest scholarly standards. Intelligence required for PSYOP can be divided into two categories: basic and current.

Basic PSYOP intelligence consists of general information on such topics as the history, society, politics, economy, communications media, and military forces of a given country or region. Such information is kept in files of pertinent documents and a library of area studies books. When time and resources permit, the general information is digested in the production of studies that are tailored to support PSYOP. One example is the basic PSYOP study, which supplements area studies by focusing on relevant PSYOP issues, defined as highly emotional matters, deeply rooted in a particular country's history, customs, fears, or foreign policy. The issues

are selected largely for their ability to support PSYOP objectives that are classified as either cohesive or divisive.

Cohesive issues exploited could help strengthen or more closely unite the total society or particular target group. Divisive issues exploited could contribute to the separation of a group from the greater society or to the disorganization of a people. The basic study should also provide information on national symbols, emotive music, or pertinent graphics that could be used in the development of PSYOP materials. PSYOP intelligence analysts also produce special studies in response to timely events or to the need for greater focus and depth on an aspect of a country or society not covered elsewhere.

Current intelligence is obtained from all possible sources and is used to update studies and files. Should a PSYOP campaign be implemented, it is essential that current intelligence be considered to ensure that the issues already identified still pertain and that the themes and materials developed for use in the campaign are still valid.

The sources of PSYOP intelligence are diverse. But most of the intelligence required to conduct PSYOP is generally obtained from unclassified sources: newspapers, magazines, books, academic journals, studies, and foreign broadcasts. Classified reports on pertinent subjects are distributed to PSYOP organizations. Such organizations may also request intelligence collection for specific items of factual information.

Liaison with other agencies outside the Department of Defense (DOD) often can produce valuable information. Some agencies that can assist PSYOP in obtaining information about local conditions in foreign areas include the Central Intelligence Agency (CIA), Department of State, Foreign Broadcast Information Service (FBIS), the Library of Congress, and the US Information Agency (USIA). USIA not only conducts public diplomacy, telling America's story to the world, but it also undertakes extensive foreign media analysis, audience research, and public opinion polls. Finally, human intelligence is important-especially to gather information about denied areas in both peace and war. The sources of human intelligence include emigres, refugees, and prisoners of war.

No discussion of intelligence research is complete without mentioning the qualifications of the analyst. Because PSYOP

demands extensive knowledge of the history, politics, society, economy, culture, and military affairs (to name a few) of a given area, research is usually a team effort. However, the individual analyst qualifications should include mastery of research and writing techniques, earned advanced academic degrees, considerable experience living in a foreign culture, and knowledge of languages pertinent to the region. The complete analyst should also be able to read the French and German languages, and should have as much information as possible on countries of the third world. Highly capable intelligence analysts are essential for a successful PSYOP program.

Target Analysis

The intelligence effort in target analysis can be divided into five elements, the first of which is to determine key audiences. Based on systematic research, one determines the major elements of a given society delineated by such factors as geography, ethnic origin, religion, race, economic status, and social position. Two basic criteria are used to select PSYOP targets. One must first consider the importance of the target to the PSYOP mission, then the probability that the target can be moved to support the objectives of the campaign. In other words, one asks whether the target has influence and whether it can be persuaded to use this influence in ways that would aid US national interests.

The second element of target analysis is to determine the attitudes of key audiences. Basic research provides intelligence on long-standing attitudes toward political, military, economic, and social subjects. This information is refined as much as possible to delineate the views of various age cohorts, social strata, and occupational groups.

The third element is an analysis of current vulnerabilities within specific audiences-in essence, an updating of the preceding element to determine the level of dissension, fear, or complaints at the time of the PSYOP campaign. When properly assessed in a timely manner, such fears and anxieties can be exploited as target vulnerabilities in a PSYOP program.

The fourth element is a decision regarding message content and means of communication. The vulnerabilities and attitudes of the target provide a foundation on which to build thematic materials for a PSYOP campaign. These materials must support the plans and policies of the campaign, and the vulnerabilities/attitudes they are based on must be an accurate assessment determined by scientific analysis and evaluation. Further, it is essential to determine which means of communication (e.g., radio, television, leaflets, face-to-face) are most capable of reaching the target.

The fifth element of target analysis, testing the contents and measuring the effects of a PSYOP message, is an extensive one. It requires a separate discussion.

Pretesting and Effects Analysis

The pretesting of PSYOP materials is a crucial phase of a campaign. It is good to determine in advance that the message is clear and potentially effective. It is also good to avoid the small errors, which are easily made, in idiomatic language or cultural incongruities that can immediately destroy credibility. There are several methods for pretesting PSYOP materials, many of which can also be used to analyze the effects of communication. But testing is usually highly problematic in that the targets of the campaign are generally located in denied areas. To partially compensate for this problem, prisoners of war, refugees, or other emigres from the denied area can be utilized.

The general sample survey is perhaps the best systematic method for determining the effects of media content. It can be used before, during, and after a PSYOP campaign. The survey involves asking significant questions of a relatively small sample of scientifically selected persons to ensure representativeness. This technique determines whether the message is understood, credible, evokes the desired response, or has provoked undesirable effects.

Another method of testing PSYOP material is the panel, which differs from the survey in that the panel participants are repeatedly questioned at regular intervals in the course of the campaign. There are at least two variations of this technique.

One variation involves choosing a small group of people to represent some larger population segment. The success of the representative panel is, of course, dependent on the selection process. Success also requires rather free access to the audience. The second variation attempts to compensate for the lack of access by assembling a group of knowledgeable panelists to discuss the merits of the PSYOP materials in question. The discussion panel has a weakness, however: significant views can be suppressed by peer-group criticism.

A final method of testing is the individual interview. Ideally, it should be performed by a trained psychologist. The main purpose of the individual interview is to obtain insights into the deeper meaning of events and to clarify the mechanisms by which these meanings are formed, perpetuated, and changed.

Measuring the effects of a PSYOP campaign is a most complex and frustrating task. One is reminded of the Madison Avenue executive who lamented that half of his firm's advertising was effective, but he did not know which half. The above-mentioned techniques of analysis can also be used in an attempt to determine the effects of a campaign. There are also two other indicators, the first of which is physical response to the campaign. If the audience acts as the PSYOP message suggested (e.g., to defect, surrender, or cause a disturbance), there is evidence of effectiveness. One must be aware, however, that this action could have been caused entirely or in part by other factors. The other indicator of PSYOP effectiveness is through analysis of the opposing media. By monitoring the press, radio, propaganda, and other documents and publications, one can find evidence of the opposition's response to our campaign.

Propaganda Analysis

Analysis of propaganda is most valuable for a number of purposes. Examination of the opposition's domestic propaganda that directed at its own population can be exploited in two ways. First, it can reveal general intelligence about the political, economic, social, and military situation in a given country (if not the possible intentions of action in a given situation).

Second, domestic propaganda in revealing such information may also disclose vulnerabilities that can be used in our PSYOP campaigns. Further analysis of external propaganda directed at our side can serve as a basis for our own counter-propaganda activities as well as a basis for our public information efforts to defend against the effects of opposition propaganda or our own population or armed forces.²

Regardless of the purpose or kind of propaganda, one focuses basically on seven questions in its analysis. What is the source? What is the objective? Who is the target? What attitudes are being exploited? What techniques are used? What media are employed? How successful is the propagandist in accomplishing the objective?

Although these analytical questions may seem rather simple, answering them can require sophisticated examination of the propaganda materials. It is not sufficient to merely deal with the themes and the logic conveyed in the propaganda message, one must pay much attention to the psychological meaning of the total package, including its symbols, use of language, and other emotional accouterments. One should be thoroughly familiar with the myriad of propaganda techniques (one author listed 77 different ones). Our counterpropaganda and public-information efforts must deal with the techniques as much as the themes of opposition propaganda if they are to be effective.

Although good intelligence is important in all military operations, it seems even more important to PSYOP. It is critical throughout the spectrum of operations from the initial planning to the campaign evaluation. PSYOP is not only a user, it is also a producer of intelligence. It is capable of contributing to the overall national effort as well as servicing its own needs.

Notes

1. A valuable source of this paper was Ronald D. McLaurin, ed., *Military Propaganda: Psychological Warfare and Operations* (New York: Praeger, 1982). Especially useful was Part IV: "Intelligence and Research," which included among other pertinent articles the following: Philip P. Katz, "Intelligence for Psychological Operations," and "Exploiting PSYOP Intelligence

Sources," 121-54. Also very useful was Department of the Army Field Manual (FM) 33-1, Psychological Operations, 1979.

2. In addition to FM 33-1 cited above, the following works were consulted for propaganda analysis: Leonard W. Doob, *Public Opinion and Propaganda* (New York: Henry Holt, 1948); D. Lincoln Harter and John Sullivan, *Propaganda Handbook* (Media, Pa.: 20th Century Publishing, 1953); and William Hummel and Keith Huntress, *The Analysis of Propaganda* (New York: William Sloane, 1949).

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What the US Information Program Cannot Do



George V. Allen

An international information program cannot change the basic attitudes and opinions in foreign countries.

One of the great American fallacies is the notion, prevalent among people in all walks of life, that we need to explain ourselves, our policies, and our way of life to foreign peoples so they will love us-or at least will understand and sympathize with our point of view. I submit, however, that this point of view is not realistic and that those in the academic world and other professionals in communications should be tough-minded enough to face certain facts squarely and realistically.

While I was director of the United States Information Agency (USIA), I was often asked by congressmen to explain why the "Voice of America" (VOA) seemed to have difficulty in getting the American story across to the people of foreign countries. It should be very simple, I was told. You need to explain that the American way of life-including our democratic principles, our respect for human rights, and our private enterprise-has produced the highest standard of living in the world. Everybody admitted that not only the upper strata but the common man in the United States had more of the good things in life-more shoes, clothes, leisure time, music, vacations, and opportunities for advancement than people of other countries. Why can't you just keep pointing that out to them on VOA?The job should be easy.

However, Uncle Sam was regarded as Mr Rich. We were presumed, with some justification, to want things to remain

Excerpts from John Boardman Whitton, ed., "What the U.S. Information Program Cannot Do," *Propaganda and the Cold War* (Washington, D.C.: Public Affairs Press, 1963). Reprinted with the permission of the Public Affairs Press, copyright holder.

more or less as they were. We talked a good deal about evolution instead of revolution, and we made it clear that we did not want the government of Cuba to seize American-owned sugar refineries or other American property without adequate and prompt compensation. We insisted on reforms (e.g., Latin America under the Alliance for Progress) but we wanted them to be instituted by orderly legal process while the miserably poor wanted to turn the world upside down overnight. They regarded the United States as basically in favor of the status quo. (All rich people are supposed to be that way.)

More significant, perhaps, is the fact that Moscow was regarded by most of the poor people around the world as the friend of the poor and of the rebel. When one asks how it is possible that so many Cubans were attracted towards Moscow rather than the United States, the painful but realistic answer is because they thought Moscow was more likely to support them than we were. Demagogues such as Fidel Castro or Juan D. Peron, who depended for their chief support on the rabble, were likely to shout defiance at Uncle Sam-and their followers were likely to cheer them for it.

The "Voice of America" could not change the basic fact that the US was rich while most people in the world were poor. The more we talked about our high standard of living, the fewer friends we had.

What is the answer? For those of us concerned with communications, we must recognize the facts of life. We must try to see ourselves as others see us. We must understand *their* motivations and reactions as we try to help them understand ours. We have put too much emphasis on explaining our point of view and not enough on understanding theirs.

Let us turn now from economic to political matters. One of the principal foreign policies of the United States has been the decision to participate in and foster collective security for the nations of the free world. The purpose of the USIA, in the words of President Eisenhower shortly after the agency was established in 1953, "shall be to submit evidence to peoples of other nations, by means of communication techniques, that the objectives and policies of the United States are in harmony with and will advance their legitimate aspirations for freedom, progress, and peace." In other words, we must make our

policies as convincing and acceptable to foreigners as we can, presuming that our policies are in harmony with their proper aspirations.

I was in India when the United States gave military aid to Pakistan under our collective security policy. The archangel Gabriel could not have made this palatable to the Indians or convinced them that it was compatible with their aspirations-legitimate or otherwise. There was no policy we could have adopted that could have convinced both sides we were their friends.

The heavy responsibilities of the United States sometimes require us to take positions that please nobody. There is danger in expecting too much of communications techniques. I was once told that only the VOA could win the Berlin dispute!

There is a tendency for college professors to claim too much for the growing field of communications (sometimes improperly called psychological warfare). Many universities are rapidly developing studies, and even faculties, in this specialized field. But if those in the academic world and we in government overstate our case for communications, we are likely to make trouble for ourselves. Propaganda can do little to remove the basic problems of the have-nots, the national rivalries of Pakistan and India, or the racial animosities of Africa. And whatever communications can do will take a long time. Like education, communication is not likely to avoid takeovers in third world countries.

We must put forward an honest, objective, and truthful information program and then make it available in comprehensible terms to as many people as possible by the most effective media. Then we must rest our case with the common sense of mankind. I suppose one must have a mystic faith, as Jefferson did, in the ability of the common man to make a right decision when given adequate information and freedom of choice. If you do not have this faith, I doubt that you should be in the communications field.

Let me repeat, however, that we must be realists. Nations will be saved from aggression by a combination of forces, including political, economic, psychological, and military-the latter being possibly the most significant in our present sad state of international chaos.

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Defector Operations

Lt Col John Ozaki, USA



Defector operations must be carefully planned and coordinated at all levels.

Because of the economic and political instability that prevails during internal defense operations, many insurgents can be persuaded to return to their government's cause if a sound defector plan is instituted. The successful campaign against the Huks in the Philippine Islands and the more recent Chieu Hoi (open arms) defector program in Vietnam tell us it is possible to formulate a defector program for internal defense and development. Success, of course, depends upon proper implementation.

The successful defector program requires national coordination, and it should have the objective of supporting the existing government. Specifically, that objective may be met by any of the following:

- **Inducing the maximum number of insurgents to discontinue voluntary support of the insurgent program and to support the legally constituted government.**
- **Exploiting for intelligence and psychological operations those individuals who have returned to the side of the government.**
- **Fulfilling promises to defectors by providing to them and their families security and economic support, to include vocational and job opportunities that help them become self-supporting.**

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- **Enlisting the defectors for specialized jobs and units where their knowledge of the enemy's techniques can be utilized.**

To increase the chances of a successful defector program, US representatives to the host country at the national level should seek approval of the following policies, especially in cases where the United States is advising a host country on military matters:

- **The host country should' establish an agency to be responsible for execution of all aspects of the defector program, which should be equal in status to major components of the government such as the military departments and the national police. This agency's organization should function on the principle of centralized direction and decentralized execution from the national to the lowest level.**

- **US agency responsibilities and policies for defector operations must be clearly established from the national level down to receipt of a defector by a combat unit.**

- **Combined agreements should be made whereby a review of performance can be accomplished for the purpose of replacing ineffective administrators.**

- **The responsible US agency should have control of funds provided by the United States that are used in direct support of the defector program.**

- **Combined civilian and military counterparts should be established at each level where major defector operations take place. These would include district, sector, regional, and national levels as appropriate to the territorial organization of the country.**

The objective of the inducement program is to prepare the members of the insurgent forces to quit their cause and join the legitimate government. The overall effect lets the insurgents know that the government is aware of their plight and wants to forgive and welcome them back. Closely associated with this program is the requirement of informing loyal citizens and military organizations about the program. These are the groups that play an important role in the rehabilitation of the defectors. The loyal citizens must accept

the defectors back into the society or the defectors will probably return to the insurgent side.

Inducement operations are the responsibility of PSYOP personnel although intelligence organizations also play a major role in this part of the program. The intelligence community provides PSYOP personnel with information gained from interrogations designed to determine why insurgents have quit their cause. If feedback provided by intelligence is timely and valid, this information can be used to induce more insurgents to quit their cause. Intelligence organizations benefit from this type of mutual support because, with more insurgents defecting, there is the probability of increased intelligence.

Themes

Before a PSYOP program is implemented, a careful analysis is made to determine the vulnerabilities of the insurgents. Common vulnerabilities of insurgent forces are hardships, disillusionment because of slow progress, and fear of getting killed. To be effective, the term *hardship* must be translated into meaningful facts such as insufficient medical services, low pay, and long family separations. The success of any PSYOP effort depends on close coordination with intelligence agencies.

Maximum use of radio, loudspeakers, newspapers, leaflets, and other publications will be the mainstay in the dissemination link. The PSYOP operator, however, constantly seeks new and unusual techniques to spread the word of the government concerning the promises of the defector program. Innovations such as badges, postage stamps, and imprinted balloons publicize the defector program. Encouraging local government officials to speak about the program may also help.

PSYOP Utilization

Former insurgents are used to the maximum extent possible in inducement operations. They are extremely effective in developing PSYOP material because they know the environment and the modus operandi of the insurgent. If defectors are

integrated into the PSYOP effort, their knowledge of the habits, customs, and idiom of the insurgents will make the PSYOP effort more effective. Additionally, these individuals are used in evaluating PSYOP material before it is disseminated.

Small units of armed defectors are organized to perform propaganda missions in locally contested areas. Such units are effective because they speak with firsthand knowledge. For security purposes, selected individuals of known loyalty are incorporated in these special units.

An effective system of rewards is one of the most important aspects of a defector program. Rewards are coordinated to ensure that each defector is paid for the assistance he provides to the government and that the pay is equitable. A central office monitors all rewards and establishes a well-publicized standard scale to ensure that rewards are in line with those previously paid. Defectors are questioned to determine whether they have received all rewards due them.

Speed in making payment is necessary so that the impact of the deed is not lost; consequently, funds should be made available to local officials so that rewards can be paid immediately. When security permits, rewards should receive wide publicity so all can see that the government lives up to its word. This added emphasis may induce other defections, particularly when large sums of money are involved.

Exploitation of the returnees involves obtaining information, disseminating the intelligence derived from this information, and using the intelligence to defeat the enemy. The following major considerations concern the exploitation of defectors:

- Treatment promised to returnees must be delivered. Initial reception is particularly important because it has an important bearing on how much an individual will contribute to the government. A returnee who is properly treated may even volunteer for intelligence and PSYOP roles. On the other hand, an individual improperly treated becomes an easy target for reindoctrination by antigovernment forces.

- Qualified interrogators are available at the lowest level possible, which is important because of the insurgent's characteristic of frequently moving. It is imperative that defectors be interviewed within the first few hours after

defection to determine their knowledge. Interviewers also need the necessary communications to disseminate information to responsive units. When the number of qualified interrogators is limited, consideration should be given to pooling and dispatching them by air as the situation requires.

- Security must be provided for both the defector and the defector's family. Insurgent forces are likely to place maximum effort on retaliating against a defector (and the defector's family) to discourage other defections.
- Clearly defined policies on exploitation must be established.

One of the major problems confronting a commander is that many of his officers and men will not trust the returning defectors. To counter this logical distrust, the commander implements a massive command information program that includes handling, treatment, and use of defectors. Experience proves that one of the best ways to reverse the feeling of distrust is to publicize the help that defectors give to the friendly forces. The returnee's knowledge of the insurgents' tactics, terrain, and current situation is invaluable to the countering forces.

One of the government's most difficult tasks is to identify the enemy and the defector is often the only person who knows the enemy; consequently, a major task of friendly military personnel is to exploit this knowledge. Former insurgents may be used as scouts, guides, members of collection and reconnaissance units, and monitors for interpreters.

Special interrogation procedures are necessary for working with a defector. Experience has shown that most defectors will talk freely without the use of pressure. Generally, the best technique is to employ the interview method. The interviewer first must gain the confidence of the defector, and interviews should not be continued unless the interviewer believes that good rapport and communication have been established. Because most defectors are highly apprehensive immediately after their escape, it often requires several interviews to establish communication. It may be useful to have earlier defectors talk to all new returnees, telling them that they have made the right decision by defecting.

The interview environment is extremely important. Although a private room is desirable, elaborate equipment is not

necessary. With new defectors, it is helpful to have intelligence requirements mentally fixed so that resort to paper and pencil is not necessary. The defector should be convinced that he is important and has valuable information that can be used to help defeat the enemy.

Rapid and accurate interrogation of knowledgeable returnees is necessary if effective exploitation is to be accomplished. Generally, the best procedure is to use normal military communications to report information gained from interrogations. Communications between police, government officials, and other sources are coordinated because many insurgents defect to governmental agencies other than military units. Reporting by those agencies helps to speed information to the user.

If the country is so organized, there is a military reporting headquarters at district, province, and region. Forms used for reporting must be simple, and some basic information should be reduced to blocks for check marks. It often will be beneficial if the forms are bilingual.

Intelligence agencies keep the lower echelons informed of any special requirements so that special reports can be forwarded. Each echelon in the reporting channel keeps a reference file on all defectors. The file contains basic information, such as date of rally, area of operation, former job with insurgents, special knowledge, and disposition. The information is readily available so that an individual can be quickly located for exploitation at any time.

Security

Security for defectors is essential. If the exploitation program is working well, the insurgents will counter it with attacks against individual returnees and compounds where returnees are kept. Normal active and passive security measures are improved by organizing the defectors into self-defense units. Special protection is given to high-level defectors—perhaps evacuating them from the immediate battle area even though they may be able to provide exploitable tactical information.

Special consideration must also be given to a defector's family. Immediately after a person defects, the family should be located. If they are in an enemy controlled area, their identity may have to be concealed before the defector can be exploited. When defectors cannot be exploited because of the family's location, plans should be made to evacuate the family to a secure area.

A successful defector program includes effective means for returnee rehabilitation, a phase that requires national support. Planning and coordination of national resources are required when jobs, arable land, and educational facilities are to be provided.

Reception Centers

Rehabilitation begins at the reception center as soon as a returnee has been exploited for intelligence and PSYOP. Centers are established in secure areas near the defectors' homes, if possible. It is of utmost importance that all promises disseminated by the PSYOP program be fulfilled as soon as possible.

A new returnee is made to feel welcome. Experience has shown that an effective way to help a new returnee overcome initial shock is to assign him a sponsor-a returnee who has been at the center for some time. A special ceremony (such as a retreat formation) is held to introduce this individual to the rest of the group. In addition to temporary jobs, such as sponsoring members, returnees are hired to fill as many of the permanent administrative jobs at the center as possible. They know the problems of the returnee; therefore, they are very effective in rehabilitating the former enemy.

While at the centers, individuals are given reindoctrination courses on government objectives and the responsibilities of individual citizens. Detailed programs of instruction are centrally prepared, and supporting reference materials are provided to the rehabilitation administrators.

Vocational training may be centralized because of limited facilities and qualified instructors. This training is on a voluntary basis, and national coordination is required to

ensure that those individuals who successfully complete vocational training become gainfully employed.

To assist in their own protection, defectors should be organized into self-defense groups. The rehabilitation complex should be tied into the defense plan of the area, with some government forces placed in the center or located close by. Within the center, planted returnees are used to determine whether the enemy is trying to infiltrate the program. These specially trained individuals determine whether the center is providing the defectors all benefits due them. They also evaluate the center's overall effectiveness.

The defector program must include a follow-up phase to determine whether the defectors are remaining loyal to the government and becoming self-supporting. Field representatives working with the police receive information from defector program administrators when defectors have moved into their areas. These representatives determine what problems, if any, the defectors are having in being accepted by the general population. As a minimum, a system must be established whereby a former insurgent is required to register with the police in the area where he resides. The police would then be responsible for the security and surveillance of these individuals.

Returnees whose home areas are under insurgent control may require temporary homes. It is not advisable to place them in defector villages because they then become easy targets for the insurgents, which makes it harder for them to be accepted by the general public. Defectors resettle where they can find employment in trades learned during the rehabilitation portion of the program.

History demonstrates that a sound defector program is a valuable aid in defeating an insurgent movement. A good defector program supports the existing government by reducing the number of active insurgents, gaining support from the general population, and providing information that can be exploited to defeat the enemy. A good defector program is another form of combat power. To neglect it invites a longer conflict and unnecessary casualties.

Tactical PSYOP and Strategic Objectives

Ronald D. McLaurin



Exploitation *of* tactical opportunities for strategic PSYOP can be crucial to achievement *of* long-term goals.

A major cause of disaffection from the government during the early years of the Hukbalahap insurgency (1946-64) in the Philippines was the mistreatment endured by the populace at the hands of Philippine security forces. Accounts of individual abuses by police powers in the Philippines are legion. From independence until 1950, the poorly trained security forces suffered from bad morale and worse discipline. In the field, troops typically foraged for supplies at the expense of poor peasants. Indiscriminate weapons firing resulted in unnecessarily high noncombatant casualties. Worse, the Philippine constabulary sometimes shelled whole villages when some residents were suspected of harboring or abetting Huks. Suspects were seized without due process of law, then beaten or otherwise treated inhumanely. Police corruption was widespread and resulted in such bitter, frustrating experiences for the peasants that many of them supported or joined the Huks.¹

After Ramon Magsaysay became secretary of national defense in September 1950, however, many important and effective steps were taken to protect noncombatants during tactical operations and to build confidence in their military forces.

The first step, an innovation in tactical organization, improved the supply situation in the armed forces. (Inadequate supplies had led to foraging by troops in the field.) The introduction of self-sufficient battalion combat teams (BCT) reduced the interdependence level, which had slowed army responsiveness. The BCTs displayed initiative, flexibility, and resistance to Huk intelligence-gathering. BCTs were "autonomous in almost

every sense except for strategic command, which was placed under the commander of the four military areas in the country."²

Second, in those cases where security forces abused their authority or did not treat civilians with respect, an effort was made to ensure that prompt and appropriate punishment was meted out. Because the objective was popular sympathy, not merely appropriate punishment, a certain degree of publicity attended these self-administered acts of justice on the part of the military.³

Third, civil affairs officers were attached to each unit to contact and work with the people-to inform them of the government's objectives and to make the military aware of the needs, interests, and problems of the local citizenry. This activity was designed to overcome the troops' previous lack of positive contact with the Filipino masses. It resulted in close relationships, more effective civic action programs, and better tactical intelligence. Civil affairs officers were also responsible in large measure for the implementation of the population protection program⁴

A further instrument to ensure that the armed forces acted with self-restraint toward the civilian population consisted of an arrangement with the Philippine telecommunications facilities whereby any citizen, for the equivalent of five cents, could send a telegram of complaint about troop behavior directly to Secretary Magsaysay's office. The secretary maintained a pledge to respond to each complaint and initiate an investigation into the circumstances that gave rise to it within 24 hours. The availability of this means to redress grievances, and the government's determination to follow through, were impressed upon the armed forces for maximum deterrent effect.⁵

Yet another change involved the dispatch of military doctors with individual units in the field. This function served both the military and noncombatants in the area. The doctors provided medical aid to civilians who were injured through either combat or accident. They also gave general medical attention to people who in many cases had never seen a doctor before.⁶

As the program to protect and work with the indigenous population progressed, even more flexible approaches were essayed in an effort to ensure the protection of civilians from

abuse, loss, or casualty during tactical operations. By May 1954, "the patrols were firing at the Huks only as a last resort."⁷ Through these and other initiatives, PSYOP at the tactical level contributed to the major strategic objective of the government reacquisition of the loyalty and support of the population.

Notes

1. See, for example, Richard M. Leighton, Ralph Sanders, and Jose N. Tinio, *The Huk Rebellion: A Case Study in the Social Dynamics of Insurrection* (Washington, D.C.: Industrial College of the Armed Forces, 1964), 29, 33, 35, 58; Albert Ravenholt, "The Philippine Republic: A Decade of Independence," in *Britannica Book of the Year* (Chicago: Encyclopaedia Britannica, 1957), 51; *The Philippines: A Young Republic on the Move* (Princeton, N.J.: D. Van Nostrand Company, 1962), 79-80; Carlos P. Romulo, *Crusade in Asia: Philippine Victory* (New York: The John Day Company, 1955), 87, 124, 130-31; Carlos P. Romulo and Marvin M. Gray, *The Magsaysay Story* (New York: The John Day Company, 1965), 109, 123; Alvin H. Scaff, *The Philippine Answer to Communism* (Stanford, Calif.: Stanford University Press, 1955), 28, 35, 36, 49-62, 119; Frances Lucille Sterner, *Magsaysay and the Philippine Peasantry: The Agrarian Impact on Philippine Politics, 1953-1956* (Berkeley and Los Angeles: University of California Press, 1961), 26, 224 (n. 12); Napoleon Valeriano, "Military Operations," in Counter-Guerrilla Operations in the Philippines, 1946-1953: A Seminar on the Huk Campaign held at Fort Bragg, N.C., 15 June 1961, mimeographed), 29; and Napoleon D. Valeriano and Charles T. R. Bohannon, *Counter-Guerrilla Operations: The Philippine Experience* (New York: Frederick A. Praeger, 1962), 98, 133.

2. J. Gualberto Planas, "One Year of Secretary Magsaysay," *Philippine Armed Forces Journal* 4 (August-September 1951): 14; and Valeriano.

3. Republic of the Philippines, Executive Order 113 April 1950: Alfonso A. Calderon, "Philippine Constabulary," *Philippine Armed Forces Journal* 3 (September-October 1950): 4; Romulo, 131; Romulo and Gray, 124, 127; Scaff, 36; Robert Ross Smith, "The Philippines, 1946-1954," in D. M. Condit, Bert H. Cooper, Jr., et al., *Challenge and Response in Internal Conflict, vol. 1, The Experience in Asia* (Washington, D.C.: The American University, Center for Research in Social Systems, February 1968), 496; and "The State of the Peace and Order Campaign," *Philippine Armed Forces Journal* 4 (January-February 1951): 12, 13.

4. Valeriano and Bohannon, 106, 211-13, 221.

5. Ibid.; Charles Wolf, Jr., *Insurgency and Counterinsurgency: New Myths and Old Realities* (Santa Monica, Calif.: RAND, July 1965), 22.

6. Charles W. Thayer, *Guerrilla* (New York: Harper & Row, 1963), 41.

7. Scaff, 135.

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PART IV

Case Studies
of
PSYOP Applications

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Introduction

These case studies present and clarify PSYOP goals, roles, and methods. Col Benjamin F. Findley, Jr., USAFR, condenses and analyzes US and Vietcong PSYOP in the Vietnam War. He analyzes the Chieu Hoi campaign, the vulnerabilities of the North Vietnamese army and the Vietcong soldier, and summarizes the key US and Vietcong PSYOP appeals and techniques.

MSgt Richard A. Blair, USAFR, and Col Frank L. Goldstein, USAF, 'present the Iraqi propaganda network used during the Persian Gulf' War. They explore Iraq's skill in creating and using a variety of media outlets, internally and externally.

Col Dennis P. Walko, USA, details tactical and consolidation PSYOP activities in Operations *Just Cause* and *Promote Liberty* in Panama. He presents major PSYOP lessons learned.

Laurence J. Orzell shows that Poland's underground media were nongovernmental PSYOP in action as well as a significant part of the Polish sociopolitical scene. According to Orzell, this underground media enabled the Poles to resist the enforcement of the adoption of communist ideals and values.

Colonel Goldstein refers to the 1986 Libyan Raid as a PSYOP effort and reports the results.

Maj James V. Keifer, USAF, Retired, discusses national anti-drug policy and relates the role of military psychological operations in solving drug problems.

The late Gen Richard G. Stilwell, USA, Retired, discusses the importance of the political-psychological dimensions of conflict and insurgency. He explores, through several examples, the failure of the American public, the media, and even our bureaucracy, to recognize and counter political and psychological warfare conducted against US policies.

In Major Keifer's second piece, he gives an overview of the psychological dimension of the Persian Gulf War relative to the diplomacy process and the quick end to the war.

Colonel Goldstein and Col Daniel W. Jacobowitz, USAF, Retired, in case studies on Operations *Desert Shield/Desert Storm*, support the urgent need to increase US sensitivity to the psychological dimension of warfare. They not only solidify the

PSYOP requirement but also point out our weaknesses and future challenges.

US and Vietcong Psychological Operations in Vietnam



Col Benjamin F. Findley, Jr., USAFR

This paper reviews and analyzes selected US and Vietcong PSYOP strategies, tactics, and problems in the Vietnam War. Included are the Chieu Hoi campaign, the vulnerabilities of the North Vietnamese Army and the Vietcong, and key PSYOP techniques of both the US and the Vietcong.

Coordination of Decentralized United States Psychological Operations Agencies

The US PSYOP effort during the Vietnam War was decentralized among the US Military Assistance Command, Vietnam (MACV), the US Information Service (USIS), and the Agency for International Development (AID). Each agency was responsible for one or more aspects of the foreign information/ PSYOP effort conducted in South Vietnam. The agencies "operated independently of each other," according to Ronald D. McLaurin of the American Institute for Research in Washington, D.C. In 1965 President Lyndon B. Johnson established the Joint US Public Affairs Office (JUSPAO) to integrate the PSYOP activities, to avoid duplication of effort, and to increase the overall effectiveness of the effort.

According to then 4th PSYOP Group Commander Taro Katagiri, the variety of agencies involved made it difficult to coordinate the PSYOP effort as well as to establish centralized control and direction in the Republic of Vietnam (RVN) in 1968-69. There were repeated examples of lack of coordination. Mr Katagiri recalled that on 16 February 1969 there was an airborne leaflet mission in which a total of 84,000 leaflets were disseminated without prior coordination with the area task force PSYOP officer. And US PSYOP teams sometimes

appeared at hamlets on audiovisual or loudspeaker missions only to discover a province team conducting a similar mission.

Roles and Goals in Vietnam

PSYOP responsibilities grew during the war without the guidance and control necessary to accomplish the corresponding goals. The breadth of American roles and goals led to rapid growth in the size of US PSYOP elements. PSYOP goals:

- 1. undermine popular support for the insurgents,**
- 2. enhance the image of the government of the RVN,**
- 3. increase Vietnamese understanding of, and elicit support for, US policies in Vietnam, and**
- 4. engender international support for US policy in Vietnam.**

Relatively few PSYOP-experienced personnel were available, however, and those few were spread among the many groups involved in PSYOP. According to MACV, the US PSYOP mission in Vietnam included the following entities:

- the American Embassy in RVN,**
- the Mission PSYOP Committee,**
- the JUSPAO,**
- MACV,**
- Civil Operations and Revolutionary Development Support (CORDS),**
- US Army Republic of Vietnam (USARV),**
- the 4th and 7th PSYOP Groups,**
- Naval Forces, Vietnam (NAVFORV), and**
- the Seventh US Air Force.**

In PSYOP Policy number 51, 28 December 1967, the JUSPAO Planning Office established the following PSYOP priorities:

- 1. the Government of Vietnam (GVN) image,**
- 2. Chieu Hoi (come home),**
- 3. revolutionary development (agriculture and improved living standards self-help projects),**
- 4. refugee program,**

5. public safety,
6. the US image,
7. GVN mass media advisory effort, and
8. telling the Vietnam story.

The Chieu Hoi Campaign

Two special PSYOP targets were the Vietcong (VC) and the North Vietnamese Army (NVA) soldiers in South Vietnam. Two Chieu Hoi operations carried out in the Delta during 1970 and 1971 proved that PSYOP and combat pressure working together could get results. The operations were Operation *Roundup* in Itien Hoa Province and Project *Falling Leaves* in Kien Giang Province. Operation *Roundup* produced hundreds of enemy defectors, according to Colburn Lovett, a USIS foreign service information officer. One PSYOP technique was to take pictures of ralliers/defectors and have them sign a simple message on a leaflet, encouraging their comrades to join the cause. Another technique was to use loudspeaker teams of former VC soldiers who were sent back into the areas of their units to speak to their comrades in the bush. Project *Falling Leaves* combined Vietnamese and US personnel working in joint PSYOP activities. Armed propaganda teams (100 percent ex-VC) made deep penetrations and extensive face-to-face communications. All possible media were used, including boat-carried loudspeaker teams, leaflet drops, radio tapes, and television appeals by former VC.

There are significant PSYOP lessons here for all commanders. During the two-month period in 1971 when intense PSYOP supplemented military action, there were 1,150 defectors, while in the six weeks before and the four weeks after the intensive PSYOP campaign, there were only a total of 211 defectors. PSYOP, if applied on an intense scale, is of significant value to commanders in securing the surrender of enemy forces. The author believes that military operations conducted without PSYOP support will not be as successful as those conducted with it.

A PSYOP project initiated by Special Forces in conjunction with a detachment of the 245th PSYOP Company, JUSPAO, and the Vietnamese Information Service (VIS) had as its

objective bringing Vietnamese government presence back to the area around Duc Co in Pleiku Province. The area had slipped into the contested category. Using the Duc Co Special Forces Camp as its base, the PSYOP effort was aimed at all of the villages and hamlets within a 10-kilometer radius. This Chieu Hoi campaign, adopted in 1963, offered communist soldiers forgiveness and exoneration for temporarily slipping into the alien communist path. They could return home to their families and the just cause of the republic. The term *surrender* was not used. Medics held sick calls over a four-day period to attract the sympathetic attention of the villagers. Over 800 villagers were treated during this four-day period. Face-to-face contact allowed the representatives of the VIS to stress the theme that the VC were preventing peace while the government of Vietnam was working for peace. Valuable information concerning the popular resentment toward VC methods came to light and the team members were careful not to make the same mistakes, particularly with regard to pressures exerted to bring villagers to propaganda sessions. At the end of four days, the operation was judged to be a success, so much so that the wives of eight VC persuaded their husbands to seek amnesty as Chieu Hoi returnees.

Vulnerabilities of the North Vietnamese Army Communist Soldier

The NVA soldier in South Vietnam presented a particularly difficult target for GVN/US PSYOP aimed at inducing surrender or defection. He had a relatively high state of indoctrination, which was reinforced by a range of psychological controls that included self-criticism sessions, the three-man cell, and endless repetition of communist themes. A contributory reason for the resistance of NVA soldiers to Chieu Hoi inducements was that defection for most did not hold the promise of an early family reunion. (Defecting Vietcong were South Vietnamese who were going home.) Moreover, unlike the VC guerrilla who may be a teenager conscripted from his hamlet and sent into battle without much party schooling or political indoctrination, the NVA soldier was the product of a closed totalitarian society. He had been subjected to com-

munist indoctrination from his earliest school days. This made him more resistant to PSYOP entreaties. Further, the NVA soldier found himself fighting in a region unfamiliar and semi-antagonistic to him, usually in relatively uninhabited areas and with little chance for contact with the civilian population.

US/GVN PSYOP messages pointed out three options: (1) to rally, take advantage of the Chieu Hoi program and quickly become a free citizen of the RVN; (2) surrender as a prisoner of war and await repatriation at the end of the war in the safety and relative comfort of a prisoner of war camp; and (3) counsel NVA soldiers to devote all their efforts to individual survival rather than getting killed or maimed for an unjust cause. Even a partial success in this PSYOP effort would contribute to shortening the war by reducing the combat effectiveness of NVA units.

The vulnerabilities of NVA soldiers did not change much throughout the war. Separation from families, the hardships of infiltrations, fear of allied arms, and, perhaps most significantly, the contrast between what they had been told by the cadre and what they actually experienced, were the major exploitable weaknesses.

The surrender program for the Northern troops (Chieu Hoi) received the greatest amount of American emphasis and money. Reception centers for defectors (hoi chanh) were built at various locations throughout the country. They usually remained in the camps from 45 to 60 days before being released and resettled. They were given rewards (e.g., money to buy food) for turning in their weapons. NVA soldiers realized that defecting might prevent them from ever going home to the North.

Key Psychological Appeals

According to Vietnam veteran and former Air Force intelligence officer Lt Col Robert Chandler, five major US PSYOP appeals were applied in Vietnam:

1. fear of death,
2. jungle hardships,
3. loss of faith in victory,
4. concern for family, and
5. disillusionment.

The aim of the fear appeal was to convince the enemy that he faced an overwhelming danger of being killed if he remained with the communists. Message themes included "death lurks everywhere," "born in the north to die in the south," and "no shelters are safe from the bombs of the B-52." Not all fear appeals were successful, however: In one appeal, fear leaflets imprinted with the ace of spades as a sign of death were dropped and decks of cards with prominent aces of spades were left along VC trails; unfortunately, Vietnamese card decks did not include the ace of spades. Another example of fear-appeal failure was the use of gruesome leaflets depicting corpses. This had a boomerang effect because the hoi chanh felt that the government was gloating over the deaths of fellow Vietnamese.

The hardship appeal reminded enemy soldiers of their loneliness, homesickness, poor living conditions, and insufficiencies in food and medical supplies. The "loss of faith in communist victory" appeal sought to convince the enemy that the Republic was winning the struggle. It emphasized battlefield losses and the number who had already rallied. The "concern for family" appeal, one of the most effective, was very emotionally based. Loneliness, nostalgia, and the desire to return home to loved ones were primary factors motivating communist soldiers to defect or surrender. The disillusionment appeal was based on the idea that the North Vietnamese soldier might be able to withstand fears and hardships as long as he was convinced that Hanoi's aims were just, but would be more willing to defect when he became skeptical of them.

Four special PSYOP techniques were employed in Vietnam: distribution of safe conduct passes, money for weapons, focus on returning home to celebrate during the Tet New Year, and armed propaganda teams composed of hoi chanh. Many PSYOP professionals believe these teams were effective because of their personal touch to the Chieu Hoi invitations.

Important Nonmilitary Considerations

There were several misconceptions about PSYOP. Taro Katagiri, former 4th PSYOP Group commander in Vietnam, believed that many people considered PSYOP a separate and

distinct activity, unrelated to other functions-especially in nonmilitary situations.

PSYOP was not amply exploited to support economic programs such as rural construction, political programs, medical assistance, or humanitarian efforts. Another misconception was that PSYOP involves just verbal communications and, thus, many Americans were insensitive to nonverbal gestures, posture, signs, and physical appearance.

An individual's response to persuasive communication in any culture is based on and reinforced by his regular interpersonal relationships. An individual usually consults a member of his/her primary group, a friend or relative, before taking action in response to persuasive messages. A great number of the VC rallied/ defected to the Chieu Hoi program through an intermediary who was a relative or trusted friend. Many did not defect until they received assurance from a relative or friend that the government would keep its promises concerning good treatment and other aspects of the amnesty program.

Cultural Considerations in Vietnam

For the Westerner, one of the most important elements to understand about Vietnamese culture is the completely personal basis of the society. "Truth" for the Vietnamese is not the factual statement or actual occurrence of an event; it is in the pleasantness of personal relationships. A Vietnamese's entire character lies in not giving or receiving personal embarrassment or shame. For example, it would not be culturally correct for a Vietnamese to shout at or reproach a waiter over bringing the wrong meal order.

He would either quietly request a change or simply eat the wrong meal and pleasantly smile. Understanding and progress are less important than pleasant associations. Distrust of strangers is a part of Vietnamese culture, and Vietnamese people politely keep their distances. Vietnamese answers to questions will reflect what the questioner may want to hear. A Vietnamese will avoid lengthy associations with strangers but will be pleasantly polite. The Vietnamese culture places a very high value on the family and on elder citizens.

Vietcong Techniques

According to Philip Katz, the reverse of the trusting value was used by the VC in their attempt to deter defection. His example is of a VC or NVA soldier who claims to his comrades that he was captured by the GVN or US forces and had subsequently escaped. He testifies that while a prisoner he was treated badly and that he had firsthand knowledge that the government of Vietnam did not abide by their good treatment promise.

Katz says that research findings substantiate the fact that intimate Vietnamese associates tend to hold opinions and attitudes in common and are reluctant to depart unilaterally from their group's consensus. They talk frequently among themselves and establish a trusting bond of friendship upon which to primarily base their decisions. Interpersonal communication is highly valued; mass media are of secondary importance. 1

Vietcong National Liberation Front

Douglas Pike presents the three VC PSYOP programs of dan van, dich van, and binh van. Dan van was the VC effort to develop support in areas that it controlled while dich van was the effort to develop support in GVN-controlled areas. Binh van was the recruiting program among Army of the Republic of Vietnam (ARVN) troops and GVN civilian servants. Destruction of South Vietnam's armed forces was the overriding priority for the VC; violence, armed attacks, assassinations, kidnappings, terrorist acts, and binh van were employed.

The top objective of binh van was to induce unit desertions, preferably accompanied by an act of sabotage. The next highest objective was to induce individual military desertion or civilian defection, preferably accompanied by an act of destruction or a theft of key documents. Next was to induce major and significant opposition within the military or civil service, either covertly or overtly.

Binh van PSYOP techniques included the following:

- 1. enunciation and constant restatement by all possible means of a liberal VC policy toward recanting military and civil servants, including prisoners;**

2. wide and intensive use of terror and psychological intimidation against key officials and military units, including killing every person;

3. use of penetration agents to infiltrate and develop support within the military and civil service;

4. use of family ties and friendships to induce or coerce military personnel and civil servants to desert, defect, or covertly serve the VC;

5. tangible and intangible rewards for those who deserted or defected, (for example, the VC announced it gave \$2,000 to a group of deserters in Long An Province);

6. encouragement among potential draftees to oppose the military draft; and

7. distribution of two songbooks containing 20 songs. The emotional songs were about the homeland and total victory. They contained communist ideas, praised party leadership, and presented the great qualities of the communist guerrillas. Cultural dramas were also used to promote the cause.

US PSYOP objectives in the Vietnam War were ill-fated from the beginning, primarily because of the "foreign invader" image of the United States. US psychological operations were used simultaneously as a means of achieving US foreign policy goals and as a substitute communications tool for the Republic of Vietnam to create nationalism. We misjudged the will of the communists to prolong the revolution and bring about reunification. We also misjudged Vietnamese reluctance to support any central government. In addition, we could not win the support of the US Congress to fight the type of war that needed to be fought. Instead, we fought a protracted war that was doomed. We lost the hearts and minds of the Vietnamese and our fellow Americans; we lost them to the PSYOP of the Vietnamese communists. *We must learn the values of strategic, operational, and tactical PSYOP from this devastating experience.*

Notes

1. Philip Katz, PSYOP and Communication *Theory*.

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The Iraqi Propaganda Network



**MSgt Richard A. Blair, USAFR
Col Frank L. Goldstein, USAF**

During the Persian Gulf War, Iraq had considerable success in mounting a psychological warfare (psywar) campaign that reached a wide domestic and foreign audience. While some might attribute this success (at least in part) to overzealous international media providing newsworthy coverage of events in the Gulf, the bulk of the accomplishment is a credit to Iraq's skill in creating and using a variety of media outlets as propaganda dissemination mechanisms.

Following his established pattern, which was designed to prevent the accumulation of power within any one governmental entity, Saddam Hussein distributed propaganda duties among many offices within the government and the Baath Party. While most of these offices officially answered to the Ministry of Culture and Information (MCI), they were actually managed through informal channels by the Baath Party, the Revolutionary Command Council (RCC), and Saddam Hussein himself.

Within Iraq, all broadcast facilities are owned and operated by the Broadcasting and Television Organization of the MCI. Prior to the invasion, Iraqi broadcast capabilities included two prime-time television broadcasts, two domestic radio services- "Baghdad Domestic Service" and "Voice of the Masses" (VOM)- and shortwave radio broadcasts of VOM in Kurdish, Turkoman, and Assyrian.

Shortly after the invasion, Iraq took over Kuwait's radio facilities and began operating the Provisional Free Kuwait Government Radio program. They also implemented at least five additional shortwave radio programs designed to undermine the Saudi and Egyptian governments and the morale of Arab troops in the Gulf.¹

Once Allied coalition bombing commenced, the Iraqi broadcasting capability was severely hampered. Iraq's television capability was completely destroyed and the only radio broadcasts noted were "Baghdad Domestic Service" and "Voice of the Masses"-both operating at greatly reduced signal strength.

The printed media within Iraq was also largely controlled by the government. The Baath Party published the largest daily newspaper in the country, *Al-Thawrah*. The MCI managed Al-Jahameer Press House, which published two other widely read dailies in Iraq, the Arabic-language *Al-Jumhuriyah* and the English-language *Baghdad Observer*. The Ministry of Defense also published an Arabic daily newspaper, *Al-Oadisiyah*, and other ministries and agencies of the government sponsored the majority of some 12 weekly papers and monthly magazines published in Iraq. Even where they did not control a publication directly, the government still influenced its contents-the MCI's General Establishment for Press and Printing licensed and censored every publication that appeared in the country.

The Iraqi government also expended considerable resources to reach foreign audiences. Iraqi television aired video clips to foreign broadcast organizations over both ARABSAT and INTELSAT. The Iraqi News Agency (INA) gathered and translated news and commentary from Iraqi press, radio, and television sources and disseminated reports by wire to subscribers around the world. The INA distributed its material even further through its participation in the Non-Aligned News Agency Pool, a service of the Non-Aligned Movement that facilitates the sharing of news items among member nations.

Iraq also controlled several other significant media resources, the most notable of which was the "Voice of the Palestine Liberation Organization," a radio program produced by Palestinian elements in Baghdad and broadcast over the Iraqi shortwave radio network. They had varying degrees of influence over some ideologically compatible media like the Libyan news agency JANA and the Palestine Liberation Organization (PLO) radio in Algiers. By mid-November, Iraq was successful in rallying information officials of Palestine, Tunisia, Jordan, Yemen, Mauritania, and Sudan to issue a joint statement endorsing the Iraqi position and discussing ways of bolstering

media cooperation to confront the intensive hostile media campaign launched by the United States and its allies.

Additionally, Iraq took advantage of every opportunity to provide its views to foreign news agencies through government officials, both at home and abroad. For example, an informal examination of three days' worth of Iraqi propaganda in mid-August revealed official statements made to the press in various countries by three RCC members, seven government ministers, 10 ambassadors, a governor, a military commander, and the speaker of the National Assembly.

Iraq also displayed great success in varying the spokesmen mouthing their propaganda. Sometimes this simply took the form of issuing statements in the name of various groups or individuals; for example, the children and vanguards of Iraq or the American hostage Golden Johnson. More often, it consisted of quoting pro-Iraqi statements elicited from various amenable personalities such as Palestinian leaders George Habash and Nayif Hawatimah or of distorting statements by world leaders whose condemnations of Iraq left room for misinterpretation.

Iraq allowed the first Western journalists into Baghdad on 18 August 1990. Later, however, all foreign journalists except a news team from Cable News Network (CNN) were expelled--and these journalists were always strictly controlled. They were escorted everywhere, and all news reports leaving Iraq were censored by the government. Although most of the world knew that Iraq was censoring these journalists' reports, use of this link to the CNN network still greatly enhanced many of Iraq's propaganda campaign objectives.

Additionally, Iraq used covert methods to access outlets that could not be influenced openly or directly. Stories of widespread Iraqi bribery surfaced continuously throughout the crisis. Supposedly, influential members of various countries were offered valuable gifts and monetary compensation to promote pro-Iraqi sentiment. One confirmed report of this activity resulted in the expulsion of an Iraqi Embassy official in Pakistan for "providing financial assistance for the publication of propaganda materials against the state [of Pakistan]."2

Iraq also financed several newspapers in Western Europe to gain Arab support throughout that region. However, toward

the end of the crisis, several of these newspapers either closed down or reduced operations. It is uncertain whether Iraq gave up this project due to budgetary reasons, lack of discernible positive results, or a combination of both.

Iraq's counterpropaganda efforts completed the network. With some modifications, Iraq took the approach that nearly all hostile themes and attacks should be countered openly and vociferously. Therefore, the Iraqis collected hostile propaganda, analyzed it, developed appropriate themes in response, and inserted them into their own campaigns within hours. For example, within hours of President George H. Bush's address to the US Congress on 11 August 1990, INA carried a lengthy rebuttal and sent it out over the newswire. Shortly thereafter, INA carried a second long rejoinder composed by Foreign Minister Tariq Aziz. By the evening of the 12th, the editors of every Iraqi daily paper had prepared, for publication in the morning papers of the 13th, their own attacks on the speech. To complete the cycle, INA then compiled a summary of the newspapers' criticisms that was circulated on the newswires early on the 13th.

In analyzing Iraq's success in disseminating propaganda to foreign and domestic audiences, three key components are easily identifiable. First, Iraq's invasion of Kuwait grabbed world interest and focused international media. Second, the government's skillful use of modern technology in mass communications provided it with instant access to the world populace. And third, Iraq used aggressive and imaginative propaganda campaigns to obtain and retain the widest possible mass audience.

By combining these three elements, Iraq not only made significant contributions to its national objectives but also created a powerful force multiplier. This multiplier presented the illusion that the Iraqi military capabilities and will to fight were much stronger than reality proved them to be.

Iraq's achievements in coordinating their internal and external propaganda efforts resulted in significant success in reaching world audiences. Although ultimately unsuccessful, the Iraqi effort clearly demonstrates that imaginative use and integration of today's mass communications technology allows any country to influence audiences well beyond their borders.

Notes

1. These five shortwave radio programs were "Holy Mecca Radio," first observed on 10 August 1990; "Voice of the Egypt of Arabism," first observed on 11 August 1990; "Voice of the Peninsula and the Arabian Gulf," implemented on 29 August 1990; "Voice of Peace," implemented on 11 September 1990; and "Voice of Arab Awakening," first observed on 13 October 1990.
2. Pakistani newspaper *Markaz*, 16 January 1991.

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Psychological Operations in Panama During Operations *Just Cause* and *Promote Liberty*



Col Dennis P. Walko, USA

US military psychological operations units figured prominently in 013eration *Just Cause* in Panama. Even US television viewers gained some appreciation of PSYOP; they saw broadcasts from the former Panama Defense Force-dominated national television channel that included "mysterious" US and Panamanian nation symbols. They saw safe conduct passes dropped on Panama Defense Force and "Dignity Battalion" (DIGBAT) positions, and they heard tactical loudspeakers appealing to enemy forces to cease resistance and surrender. Perhaps our country's last television view of PSYOP activity in Panama was that of the loudspeaker in front of the Papal Nunciature blaring heavy metal rock music to "drive Noriega out of his mind" or "keep him awake."

Military PSYOP disappeared from US public view immediately after Noriega surrendered to US authorities, only to reemerge during Operations *Desert Shield* and *Desert Storm*. Americans once again were exposed to news articles featuring PSYOP leaflets and loudspeakers.

In each case, the attitude of our mass media and the ensuing public response were favorable to PSYOP. Articles in newspapers and journals portrayed PSYOP as both cost effective and critical to success. Official and unofficial US military circles said PSYOP was a valuable force multiplier that had induced enemy forces to abandon their positions or surrender, thereby reducing loss of life on both sides.

Less conspicuous was the bulk of psychological operations during *Just Cause*. Most PSYOP activities and accomplishments in Panama were hardly noticed by either the US public

or the general military community. The special operations community, however, did notice. The lessons learned in Panama were incorporated into standing operating procedures. Where possible, immediate changes were made to capitalize on the PSYOP successes of *Just Cause* and *Promote Liberty*. This led to improved production, performance, and effect in the next contingency, which took place within six months after the return of the last PSYOP elements from Panama. Operations *Desert Shield* and *Desert Storm* employed PSYOP at an order of magnitude and effectiveness that many credit to the lessons learned from Panama.

Recognizing that much of *Just Cause* and its complementary civil-military restoration operation, *Promote Liberty* is still classified, this article has been prepared to informally discuss PSYOP during the Panama contingency. It will briefly cover the evolution of PSYOP plans and operations, describe their objectives, and show how PSYOP were successfully executed. Hopefully, this piece will show there was a lot more to PSYOP during this contingency than rock music and surrender appeals, and that PSYOP did, in fact, contribute significantly to the overall success of the operation.

Panama contingency plans had been under development for years prior to *Just Cause*. These contingencies were to range from evacuation of US and third country nationals to full-scale combat operations against Noriega, his Panama Defense Forces (PDF), and (later) the DIGBAT goon squads. The latter targets were increasingly viewed as threats, not only to Panamanians, but also to US dependents. Contingency planning culminated with consolidation and reconstruction operations to follow any combat scenario.

Psychological operations were well integrated into the planning process. The worst-case scenario involved combat operations in Panama. For this option, planners recognized the importance of promoting prompt cessation of hostilities and minimizing civilian casualties. The following were key concerns for this option:

- US casualties
- Panamanian civilian casualties
- Collateral damage

- Delay in US troop withdrawal
- Disinformation and hostile propaganda

The five concerns were interrelated. If the PDF offered concerted resistance to US troops, casualties on both sides would escalate, civilians would likely suffer, Panama City and US military installations might sustain severe property damage, and US troops could become bogged down in an effort which would increasingly be susceptible to counterproductive local, US, and worldwide criticism. Related to all this was the concern that the Noriega-controlled Panamanian media—essentially a propaganda machine—would continue to broadcast material detrimental to US interests and stir up doubts as to the effectiveness of our operations.

Additional concerns for consolidation or reconstruction operations included repairing the government and economic infrastructure and establishing a functioning democracy. Specific PSYOP missions and requirements were identified to support contingency plans and address all the aforementioned concerns.

On the tactical level, loudspeaker teams were scheduled to accompany all major ground combat units. Their objective was to convince the enemy to cease resistance and surrender while advising innocent civilians how to stay out of harm's way. As the plan matured over time, loudspeaker teams received increased emphasis: a few months prior to the operation, the designated commander for Joint Task Force-South (CJTF-South), then Lieutenant General Stiner, directed that loudspeaker teams be provided to each infantry battalion (Army and Marine Corps) and each SEAL battalion-equivalent participating in the assault phase of the operation. This was probably the highest loudspeaker-to-combat force ratio in the history of the US military.

On the national-strategic level, a PSYOP task force would be formed, based upon the regionally oriented 1st PSYOP Battalion (Bn) augmented with additional loudspeaker, radio, and television assets from the 4th PSYOP Group (Gp). The PSYOP task force (TF) main body was to deploy early, assume control of ongoing tactical PSYOP, and provide general PSYOP support to the operation, employing full media production and

dissemination capabilities. Its objectives were to conduct national-level PSYOP designed to minimize interference and resistance, and to foster support for US military operations and efforts by the Panamanian government to restore law and order.

Various prepackaged PSYOP materials-prerecorded TV, radio, and loudspeaker tapes; radio and loudspeaker scripts; music; and designs for printed leaflets and posters-were developed from 1987 to 1989. These were approved by an interagency committee headed by the commander of US Army South.

The commander of the 1st PSYOP Battalion, 4th PSYOP Group, based at Fort Bragg, North Carolina, was the designated commander of the PSYOP TF in the eventuality of any Panama contingency. He was responsible for developing detailed contingency PSYOP plans, annexes, and products, and for coordinating all PSYOP-relevant details with USSOUTHCOM and XVIII Airborne Corps. Prior to the actual operation, often during routing trips to Panama, the commander and other members of his command visited many of the principal target locations and identified potential production facilities-a precaution against a late arrival of PSYOP production equipment.

Facilitating this planning process was the fact that successive 1st PSYOP Bn commanders served as CINCSOUTH's senior theater PSYOP officer, knew most key players on the USSOUTHCOM and USARSO staffs, and had a small liaison cell located in the USSOUTHCOM J-3 directorate. Furthermore, once the XVIII Airborne Corps commander (General Stiner) was designated CJTF for the contingency, coordination between the battalion and that headquarters (including one-on-one meetings with General Stiner) became a frequent affair. General Stiner would later assume overall responsibility for planning and commanding the operation. He took a personal interest in PSYOP, further enhancing their planning, coordination, and execution.

By March and April 1988, Noriega had increased provocative actions against US forces in Panama, having sent harassment patrols into the US-controlled Arraijan tank farm (fuel storage and distribution depot adjacent to Howard Air Force Base) and the nearby US Army ammunition storage facility. At this point,

the National Command Authority ordered additional security forces deployed to Panama, with additional deployments in May 1989. Included among these forces were an additional infantry brigade, military police, and three PSYOP loudspeaker teams. These forces remained in Panama until hostilities were initiated.

The three loudspeaker teams deployed as a tactical detachment with sufficient personnel, vehicles, radios, and speaker systems to permit reconfiguration as five teams if the need were to arise. As time dragged on, soldiers and equipment were rotated to and from Panama to such a degree that virtually every battalion in the 4th PSYOP Gp had an opportunity to deploy soldiers to Panama. This would prove extremely important: by the time of the contingency, a large number of PSYOP soldiers had firsthand knowledge of the area, the equipment, the supported commanders already in Panama, and the Spanish language.

As tension in Panama grew, loudspeaker personnel became integral members of US tactical exercise and security forces. These units often became embroiled in PDF and DIGBAT-orchestrated protests during several of the increasingly frequent exercises conducted by US forces to reassert US treaty rights. The loudspeaker teams not only effectively employed prerecorded tapes which would also be useful later, during the contingency; they prepared other announcements on the spot. These encounters served as valuable training and experience for PSYOP soldiers who would support *Just Cause* and *Promote Liberty*.

Two events in Panama were to have a significant effect upon PSYOP planning for the contingency. The first was Noriega's nullification of the May 1989 Panama presidential elections. Besides the obvious worsening of Panama's internal conditions and international relations, this act gave US PSYOP a number of obvious themes for use against Noriega and his "inner circle." It also heightened the probability of a combat contingency and energized even greater attention to the contingency planning process (including PSYOP planning and preparation). From this point forward, both the 1st PSYOP Bn commander and the 4th PSYOP Gp commander spent increasing time in Panama, providing PSYOP planning expertise to

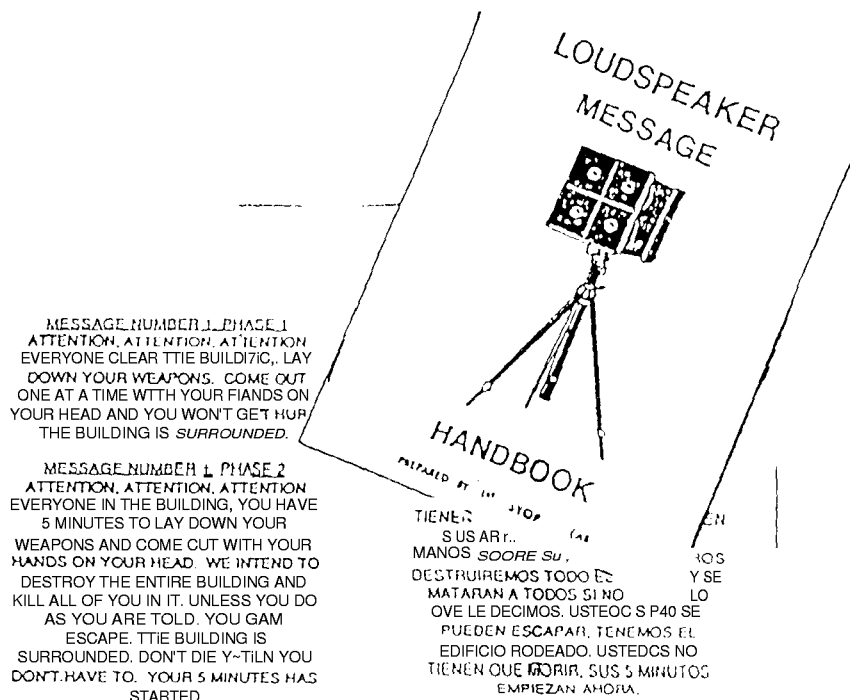
CINCSOUTH, his staff, and the US Country Team. (In fact, both officers were to return from lengthy TDY in Panama within 72 hours of the events that precipitated Operation Just Cause.)

The second event was the failed 3 October 1989 coup attempt by members of the PDF against Noriega. After the coup attempt, Noriega rapidly purged the PDF of its more moderate leaders and boosted training for the paramilitary DIGBATs. Prior to this coup attempt, the US combat contingency plan had focused on removing Noriega and his cronies from power while leaving the PDF institution alone; under these new conditions, it became increasingly clear that, in the eventuality of a contingency operation, the JTF would not be able to operate within those limited US objectives. Therefore, PSYOP materials that had been prepared prior to the coup required revision. The most time-consuming revisions were those associated with audiovisual products that had been prepared for possible broadcast over television.

As time passed and the situation in Panama worsened, it became clear to the 1st PSYOP Bn commander that he could no longer keep television and radio broadcast tapes up to date. To have done so would have worn out personnel of both the battalion and the 4th PSYOP Gp's Strategic Dissemination Company. Since these products were classified TOP SECRET-SPECAT, they could only be produced at night and on holidays when noncleared soldiers were off duty and away from the media production facility. Furthermore, this activity was beginning to tie up personnel who were key to other ongoing PSYOP activities in the USSOUTHCOM area of operations. Thereafter, for initial operations the PSYOP TF would depend upon the battalion's prerecorded music tracks, silent footage and logs, and written scripts that could be modified at the last minute and read "live" by PSYOP broadcast announcers. In fact, such modifications for radio and television broadcasts were made by the commander, from Panama, over long-distance telephone within hours prior to commencement of hostilities. All were used during the first 24 hours of Just Cause, constituting the first official US broadcasts in Spanish heard by the Panamanian population.

After General Thurman's assumption of command on 30 September 1989, the failed coup attempt that shortly followed, and General Stiner's designation as CJTF-South, conditions in Panama continued to deteriorate. US concerns for the safety and protection of US lives and property were heightened; preparation and coordination for a Panama contingency involving full-scale combat operations were intensified.

As a result, 4th PSYOP Gp loudspeaker personnel at Fort Bragg were placed on recall status for possible deployment on short notice. Loudspeaker system shortfalls were identified and additional systems were obtained from Army Reserve PSYOP units. Loudspeaker broadcast scripts in English and



Source: 1st PSYOP Battalion, US Army

Figure 1. These bilingual booklets were carried by tactical PSYOP loudspeaker teams, along with prerecorded tapes of the same messages in Spanish. Note the messages in the extract; US troops did not mince words.

Spanish were refined by the 1 st PSYOP Bn and published in a small handbook. Prerecorded tapes for loudspeaker broadcast were revised and additional announcements were recorded. Tapes and booklets were taken to Panama for use by the deployed teams if the time came to execute the contingency.

The 1st PSYOP Bn commander was designated by General Stiner as a member of a 20-man JTF-South staff element identified to predeploy to Panama in advance of the assault forces if the contingency were to be executed. As it turned out, this predeployment would prove important to the success of PSYOP in the Panama contingency. With the exception of the three loudspeaker teams already in Panama and the loudspeaker teams accompanying the airborne and special operations assault forces, the PSYOP TF would not arrive in Panama until after initial assault operations.

The commander, his forward liaison cell, the loudspeaker detachment, a prepositioned 4th Gp AM radio broadcast team, Volant Solo PSYOP TV/radio broadcast aircraft from the 193d Special Operations Group (SOG) of the Pennsylvania ANG, and the USSOUTHCOM J-3 PSYOP office would comprise the PSYOP planning, coordination, development and dissemination capability in Panama until D + 3. Late arrival of the main body notwithstanding, PSYOP employed a full range of media and other activities in support of initial combat operations-and with good effect.

During the early morning of 18 December 1989, two days after the fatal shooting of a US serviceman and the harassment of another and his wife by members of the PDF, the 20-man advance JTF-South staff element administratively and clandestinely deployed to Panama. The 1st PSYOP Bn commander assumed control of his forward elements in accordance with prior arrangements with USSOUTHCOM headquarters, although the members themselves still had not been informed of the pending operation, and in fact were not to be told until the night of the assault.

At 1900 hours, 19 December, the 1 st PSYOP Bn commander assembled the members of his liaison element, the loudspeaker detachment commander (now the company commander who, coincidentally, was in Panama conducting his assumption of command property inventory), and the commander of the

prepositioned AM radio broadcast team to notify them that **Just Cause** was to be executed on 20 December. The commander then organized the element to function on a 24-hour basis as his ministaff, interim PSYOP development cell, and radio broadcast team. Consistent with the JTF OPLAN, the loudspeaker detachment would break down into five teams which would link up with their designated supported units. The other loudspeaker teams and PSYOP liaison officers that were called for in the plan would deploy with their supported combat units and would operate in an attached or OPCON status-a command and control relationship which caused problems, as will be discussed later.

This sri jall PSYOP force was prepared to work in shifts until the PSYOP TF arrived. Although envisioned to function only for about the first 24 hours of the operation, it was this small group which planned, coordinated, and ran psychological operations for the first three days of the contingency. Once the remainder of the PSYOP TF had commenced operations, the liaison element continued as the JTF PSYOP staff section and PSYOP TF liaison at the JTF-South headquarters, maintaining continuous coordination with all elements of the JTF and coordinating aviation requests and leaflet drops.

In addition to AM radio broadcasts, initial PSYOP activities involved TV broadcasts of prepackaged materials from the 193d SOG's Volant Solo aircraft. The recently revised scripts were read live by PSYOP soldiers who had been picked up at Pope AFB, North Carolina, while the aircraft was en route to Panama. These broadcasts-all in Spanish-notified the Panamanian population of US intent and advised how to avoid accidentally becoming a casualty. (These were the "mysterious" broadcasts that puzzled some of the US media in Panama.)

The TV channel used for broadcasts by Volant Solo was Channel 2, the national channel commandeered by the Panamanian military shortly after the 1968 coup d'etat and controlled by the military until 20 December 1989. It was targeted for psychological impact, to deprive Noriega of his principal TV media, and to ensure prompt reception by the populace. To this end, and according to the OPLAN, Channel 2's broadcast capability was neutralized by special operations forces at approximately H-hour, and Volant Solo began

broadcasting on the frequency. The broadcast facility was shut down in such a manner as to enable prompt restoration of capabilities once the US and new Panamanian government were in full control of the situation.

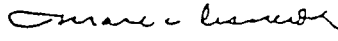
The PSYOP element commenced activities by making use of the same previously prepared scripts and recordings being broadcast via Volant Solo. Soon it was heavily involved in preparing scripts and acquiring news items and music adequate to keep the Panama City area receiving Volant Solo's broadcasts and the nationwide audience receiving the AM radio station's broadcasts 24 hours per day. This was a major undertaking: Scripts would have to be developed, coordinated with the staff, and translated into acceptable Spanish so the Panamanian population would listen and understand. All of the PSYOP soldiers were actively engaged in this process. Fortunately, all were bilingual and thoroughly familiar with the situation in Panama. Tapes of popular music were available to maintain audience attention between announcements.

Safe conduct passes were prepared at and distributed by the printing facilities at the main US military print plant at Corozal. (Later versions, as well as other products, were printed on presses deployed with the PSYOP TF and on captured presses at Noriega's former PSYOP facility on Fort Amador.) It should be noted that Gen Marc A. Cisneros, CG USARSO, signed the leaflet, as opposed to CINCSOUTH (General Thurman), or CJTF-South (General Stiner). General Cisneros had already established a good reputation among the Panamanian population and the PDF, and therefore was expected to have greater credibility as a known entity. As events proved, his reputation would be a valuable commodity, not only as endorser on subsequent surrender appeals, but in personally arranging the surrender of regional PDF garrisons by telephone.

These first safe conduct passes were printed on newsprint. Three hundred thousand of them could be printed and chopped into bundles rapidly in a form that could be handled by two of the cell's PSYOP sergeants with a pickup truck. Furthermore, US helicopter crews could easily take on 30,000 or more leaflets and toss them over target areas without difficulty due to their compactness and small size. If the

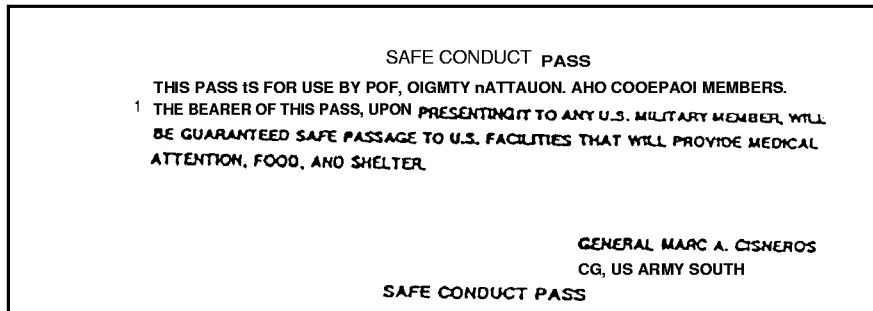
PASAPORTE A LA LIBERTAD

ESTE PASAPORTE ES PARA EL USO DE MIEMBROS DE LA F.F.D.D., BATALLON DE LIBERTAD Y LA COOEPADI. SI SE PRESENTA ESTE BOLETO DE LOS ESTADOS UNIDOS, LE GARANTIZAMOS SU SEGURIDAD, ACCESO A FACILIDADES, MEDICINA, COMIDA, Y UN LUGAR DE DESCANSO Y A(C1W[AA80".
RECUERDEN: NO HAY QUE SUFRIR MAS.



GENERAL MARC A. CISNEROS
COMANDANTE DE TROPAS DEL EJERCITO SUR

PASAPORTE A LA LIBERTAD



Source: 1 st PSYOP Battalion, US Army

Figure 2. Three hundred thousand of these safe conduct passes were printed on newsprint as an expedient. They were printed in Spanish on one side but in English on the other so that US troops understood what was being promised. These were proven effective in the early stages of Just Cause, especially when accompanied by loudspeaker broadcasts.

contingency had taken place during the rainy season, this approach might not have worked very well since the newsprint would have rapidly disintegrated on contact with water. Had heavier paper stock been used, however, the leaflets would have taken longer to print and might have been too bulky and heavy for the small detachment to handle.

These safe conduct passes were dropped by helicopter on targets of opportunity and on locations identified by PSYOP soldiers. Helicopter pilots often carried bundles of leaflets just in case an opportunity would present itself for their use. Later versions of these passes were also distributed as handouts from loudspeaker teams and other US forces.

One of the earliest indicators of effectiveness was the successful employment of loudspeakers and leaflets in support of US Marines at La Chorrera, a small village on the outskirts of Panama City and Howard AFB. The Marines had encountered heavy resistance from PDF and DIGBAT members for the first 24 hours. The Marines ceased fire for the night. Surrender appeals were then blared over loudspeakers as safe passage leaflets were dropped. Resistance ceased early the next morning without an additional shot being fired. Surrendering personnel came forward clenching the safe conduct passes.

Colocated with the PSYOP cell was the commander of the Joint Audiovisual Detachment (JAVDET), a unit comprised of multiservice elements from the Joint Combat Camera Center. Although not in command of the JAVDET, the PSYOP TF commander could request specific video coverage by the detachment. He then had a significant amount of footage already available when the main body of the PSYOP TF arrived with organic camera teams and audiovisual production capability. One copy of every cassette produced by the JAVDET was delivered to the PSYOP TF.

The JAVDET's transportation assets were extremely limited, but the PSYOP TF commander was able to match up these cameramen with several of the vehicle-mounted loudspeaker teams already in-country. It was largely the videos obtained by these photographers that were used in initial PSYOP audiovisual operations. Also, since these videos were not PSYOP products, they were provided by the JAVDET to the US media through program action officer (PAO) channels. PSYOP loudspeaker soldiers and activities therefore wound up receiving higher visibility in the US media than would have been the case otherwise.

Immediately upon activation of the 10,000-watt AM PSYOP radio station and commencement of the initial assaults on 20 December, the new president of Panama, Guillermo Endara, communicated with the Panamanian masses principally via this station. Among Endara's first announcements was the promise that anyone turning a weapon in to US forces would be paid \$150 for it.


The "money for guns" concept had been envisioned as a viable PSYOP technique to promote cessation of hostilities. Results during *Urgent Fyiry* in Grenada had been successful, even though undertaken late in the operation. In the case of Panama, the initiative was taken early; it paid off. The PSYOP radio station explained and promoted turn-in procedures to combatants and to the Panamanian population. The newly arrived PSYOP TF commenced preparation of numerous printed leaflets and posters to convey information leading not only to the rapid surrender of PDF and DIGBAT personnel, but to their turning in individuals and cached weapons as well.

Early in the operation, PSYOP soldiers supported civil military operations, including the displaced persons (DP) camp hastily established in Balboa Village. A tactical PSYOP loud-speaker team set up full-time operations in the compound and amplified PSYOP radio broadcasts over the loudspeaker system to put the people at ease and keep them informed. This team, along with other PSYOP soldiers, moved throughout the camp, handing out newspapers prepared by the PSYOP TF, pretesting proposed PSYOP products, chatting with the people, observing their actions, and reporting potential problems to the camp administrators-members of the 96th Civil Affairs Battalion.

A primary problem associated with the DP activity was rumor control. By building rapport and establishing information programs with the DPs over time, PSYOP soldiers established their credibility and were able to neutralize rumors before they expanded to crisis proportion. When an improved, expanded DP facility was completed at the Panamanian-controlled portion of Albrook Field, PSYOP soldiers helped prepare the population of the Balboa camp to minimize apprehension about the move to the new site and to enhance control during the move itself.

The tempo of PSYOP increased dramatically as time progressed and the PSYOP TF became fully operational. Additionally, the 4th PSYOP Gp commander arrived as senior PSYOP commander in-theater-serving as special PSYOP advisor and expeditor for General Thurman. The group commander used the full range of media to convey public information while soliciting cooperation and support from the

ES TU DEBER



MAXIMO QUE SE PAGARA:

\$15 POR SUFICIENTE CANTIDAD DE MUNICION

\$15 POR GRANADA

\$30 FOR GRANADA RP(

\$100 FOR PISTOLA

\$115 FOR ESCOPETA

\$150 FOR RIFLE AUTOMATICO

\$130 FOR MINA

\$5000 MAXIMO

POR ALMACENAMIENTOS DE ARMAS

COOPERA CON NOSOTROS

RECOMPENSA MAXIMA POR
ALMACENAMIENTOS DE ARMAS

PUNTOS DE ENTREGA	
Departamento 2 Pol.- cerca de la parte de +1r++ del nter, < Albrook	
Gimnasio Nacional (frente al Anon 188)	
V+ .mru r .+Or+O++ +obmenle rn nro+ l.pn+ don+nseu de 7	
4 V wuuru 3 4 1+ luh	
PROCEDIMIENTOS DE ENTREGA	
1. REMUEVE EL CARGADOR Y MUNICIONES DEL ARMA	
LATA UN PANG BLANCO AL ARMA.	
1. ACERCATE CON EL ARMA SOSTENIDA BIEN EN ALTO POR EL CAÑON.	
< SIGUE LAS INSTRUCCIONES DE LAS AUTORIDADES.	
COOPERA CON TU GOBIERNO Y AYUDA A LAS FUERZAS ARMADAS ESTADOUNIDENSES UNIDOS ALCANZAREMOS LA LEY, EL ORDEN Y LA SEGURIDAD PUBLICA SINTONIZA A A.M. 1160	

Source: t st PSYOP Battalion, US Army

Figure 3. A series of posters and handbills advertised the reward program for weapons. (Interestingly, a Panamanian showed up in an armored vehicle and asked what the reward was for it. Since the maximum authorized amount for any one item was \$150, US troops offered \$150. After a short negotiation session, the Panamanian accepted the offer.)

UNION Y RECONSTRUCCION

PROSPERO AÑO 1990

SON NUESTROS MAS

SINCEROS DESEOS



PANAMA,
CORAZON DEL MUNDO
PUENTE DEL UNIVERSO.

*Busque' A Jehova' y él me
ayo' y me libre' de todos mis
temores.*

Salmos 34:4



Respondiendo Jesus les dijo:

Tened fe en Dios

Marcos 11:22

Source: 1 st PSYOP Battalion, US Army

Figure 4. Christmas cards were distributed during Just Cause to enhance relations and rebuild national spirit; 10,000 of the first and 30,000 of the second were distributed-mostly by hand and by helicopter drop.

military in identifying and apprehending PDF and DIGBAT members and arms caches.

Posters, leaflets, radio broadcasts, and television announcements solicited information and provided telephone numbers to be called by those wishing to volunteer information regarding weapons or PDF and DIGBAT fugitives. These techniques were effective. Within minutes after dissemination of printed material or broadcast of the information, the designated telephones began to ring and information poured in. It was also found that new posters, especially "wanted" posters bearing photographs of PDF and DIGBAT fugitives, had to be printed and distributed continuously because people removed them from walls to avoid identification, to keep as souvenirs, or possibly take them home for study and future reference.

Other products focused on establishing a favorable image of US forces, explaining US motives, and providing information needed to reestablish the normal routine. Products of the latter category were in demand because the former PDF-dominated Panamanian media was essentially shut down. In fact, the newspapers printed by the PSYOP TF were so sought after by the public that enterprising Panamanians grabbed bundles of them and sold them to passers-by.

At this point, it should be stressed that all products were tested prior to dissemination. Product review and approval was extended to the level of the executive office of the Panamanian government in order to reduce the probability of error. (A classic example of such an error on the part of an enemy occurred during *Desert Shield/Storm* when an Iraqi propaganda announcer warned US military personnel that their wives were fooling around with movie stars such as Bart Simpson!)

A short case study is presented here for the purposes of clearly demonstrating the complexity of PSYOP product development during *Just Cause* and, later, *Promote Liberty*. During the operation, the PSYOP TF developed a product bearing the multicolored image of the Panama national seal. The insignia was surmounted by an eagle. Due to the poster's size and complexity (five colors), the prototype was assembled and sent to the Corozal print plant. The workers at the plant

SE BUSCA



TTE CNEL LUIS A. CORDOBA

Ex jefe oficial de inteligencia. Ex-miembro del Consejo Estratégico Militar CEM. Responsable por el arresto de los oficiales del G-2 envueltos en el golpe de marzo de 1988. Ex-jefe del DNTT y la 5ta zona militar. Trigueño, complexión mediana, cabello negro, ojos castaños, estatura 5'8" y peso 160 Lbs.

SI TIENES INFORMACION ACERCA DEL
PARADERO DE ESTA PERSONA, LLAMA
AL TELEFONO:
25 55-24

Source: 1st PSYOP Battalion, US Army

Figure 5. Several versions of these kinds of posters were employed by members of the Joint Task Force in attempts to round up former members of the Panama Defense Forces and Dignity Battalions. These posters, along with radio and television announcements, not only contributed to the prompt identification and capture of fugitives but also served to reassure the Panamanian populace that US forces were actively seeking to round up those individuals most capable of orchestrating retaliatory actions or restoring the "old order."

SE BUSCA



MAJ. CARLOS SALDANA
Fuerte complexión, cabello



HUMBERTO LOPEZ TIRONE
Señalo de 6'...n. En-
luc con las pines socialistas y
tiber peraminar.



MAY GONZALO GONZALEZ
Promovido a Mayor luego del golpe
de Oca 3 por ayudar a rescatar a
Hernández. Se sospecha que apoyó
varios oficiales que participaron.



ROLANDO ESTERLING
S1 para el Batallón de
Dignidad en San Miguelito



CPT ASUNCIÓN GAITÁN



CAPTURADO
CPT BENJAMIN SODS

Llame R los teléfonos 87-3613, 87-4965 o 87-4246 si tiene información o fotografías
de cualquiera de las personas aquí listadas. Llame 1-b- Prn app W.-
mación de los batallones de dignidad o sargento Juana de Defensa.

Los siguientes individuos tambien
87-4244

buscados por las autoridades de Panamá RR.UU. MU...
ellos, por favor llame a W WIL.- n.XU. cau

Eric Acas
Alberto Alvarado Boyd
C-14 AR.lla
Comandante Amelito
... *FU
Natividad Burman
Angel Benito
Londregu De Bior
Romulo cacha Berranccurt
A"- a.m."
Manuel Camp
David Camro
UK Calado
Nairo Cadeo
Wt. Chandel
Orlando Cogley
Marta Concepcion
Alfonso Cordoba
Santos Correa
Elipio Correa
Victor Degrei
Gonzalo Delgado
Jaime Le Dessen
Amado Diaz
Marta Escobedo
Felipe Ezurbi
Ronda Fernandez
Famosa, Irado
Jose A. Ortega Gomez
Roberto Gortado
Luis Carlos Gomez

Rw- N.a.
M 4M.i.

J. Juan
Guillermo Ladame Bradley
Dionisio Lopez
Ciro Maclean
Manuel Madama
Victor Manuel
Alfonso Melibares
Francisco Diaz de McCas
Sel. M...4
Sel. M...4
Almacer Ortiz
Ernesto A. Ortiz
Pete Raa
Raa * nIn
Virginia Parahan
Sergio Pital
Eric Pola
L. Payan
Ferdinando Quial
III-- A--
Ramon E. Rood
Falso Rood

Ernesto Rodriguez
Guillermo Ro os
Rafael Saavedra
Edith Salgado
Alta P. Sil...
W. C. r
Margarita M. Surin
MLW. Vad.
A. Ull. Tade w Claxi
U...
Caw A.f.f. Wismen
Andres Wiergo

Source: 1 st PSYOP Battalion, US Army

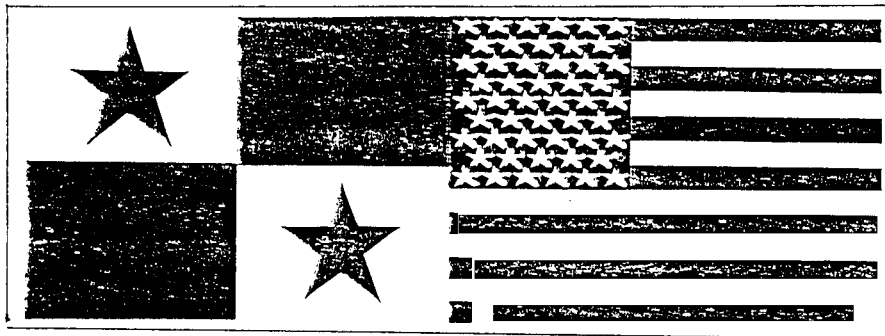
Figure 6. "Wanted" handbill

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remembered that they had produced similar images before the contingency and still had the master plates; they therefore used these plates. The resulting product was indeed beautifully done. Only one problem: the PSYOP TF S-3 realized that, instead of the traditional eagle atop the Panama crest, there was a North American bald eagle-not exactly the kind of thing that would make us popular!

When redone, the revised poster with correct eagle and crest, was tested again "just to be sure." Again, a problem surfaced-according to the National Code of Panama, the crest was supposed to appear in a field of green, and the proposed poster would have done just that. Unfortunately, the proposed green was the color of one party of the Panama coalition government-one which was becoming increasingly viewed by Panama political opponents as trying to muscle out the other two coalition parties.

The poster finally came out with the eagle and crest on a neutral background. The lesson here is that pretesting and posttesting, including the actual colors to be used, are fundamental to the PSYOP development and production process.



Source: 1 st PSYOP Battalion, US Army

Figure 8. This small red, white, and blue poster was printed on heavy stock paper and was distributed throughout Just *Cause* and Promote *Liberty*. It was displayed on military vehicles and handed out by US troops. Its objectives were to portray US-Panamanian teamwork and to reduce perceptions of US forces as military invaders or occupiers. Within days after dissemination commenced, Panamanian commercial vendors were peddling T-shirts and other paraphernalia bearing the same logo.

This process is crucial-and testing needs to be done right. Additionally, all PSYOP campaigns and products require extensive staff coordination and personal review by the PSYOP TF commander.

As the situation further stabilized, it became increasingly important to get the commercial media "back in business." Shortly after the first day of operations, the PSYOP TF commander began to receive personal telephone calls from media representatives willing to get their TV and radio stations back on the air in support of the US and the new government-but only if they and their personnel would be escorted by US soldiers or transported under guard while their facilities were guarded by troops of the JTF. There existed considerable concern for possible terrorist acts by DIGBAT goons still at large, including possible murder or sabotage.

Initially, soldiers and vehicles could not be spared by either the PSYOP TF or JTF-South to satisfy all commercial media's conditions. Nor did the PSYOP TF have the weapons necessary to provide appropriate security. However, at about 2 100 hours the night after Noriega obtained sanctuary in the Papal Nunciature, a team of PSYOP soldiers entered the TV Channel 2 broadcast facility and began broadcasting prerecorded tapes of cartoons from the station library. By morning, most of the commercial broadcasting crew had arrived, along with a large crowd of Panamanians enthusiastically waving Panamanian and US flags. They were celebrating the arrival of US troops and the "grand reopening" of their singing channel.

The commercial crews volunteered to restore operations as the PSYOP team temporarily observed and screened their material to ensure that it was not counterproductive to US aims or those of the new government. Another TV channel (4) was similarly reactivated the same day.

Most of the principal radio and television stations in and around Panama City were back on the air within days, temporarily under observation by or supervision of either US PSYOP personnel or Panamanian officials with whom PSYOP had established a working relationship. These media not only broadcast materials prepared by the PSYOP TF, but also prepared and broadcast excellent programs on their own. Their

programs supported US military forces and the government of Panama.

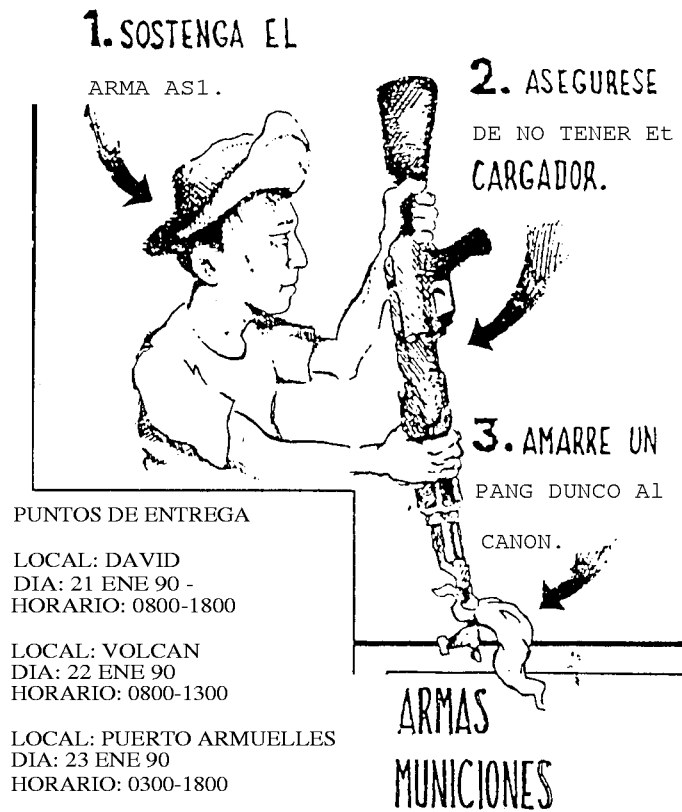
By 8 January, the PSYOP TF had produced and disseminated over one million leaflets and handbills, 50,000 posters, 550,000 newspapers, and 125,000 units of miscellaneous other printed materials. Volant Solo had conducted TV broadcasts for the first several days, the PSYOP AM radio station had been operating 24 hours a day, and countless messages had been aired on commercial radio and television stations and published in commercial newspapers. Loudspeaker teams continued to support tactical units by broadcasting advisories, interacting with the population, and providing timely PSYOP advice to US commanders.

Psychological operations figured prominently in the successful US efforts to flush Noriega out of the Papal Nunciature, where he had sought refuge. They played a significant role in establishing the Panama Public Force-the new police force designed to replace the old PDF. PSYOP teams circulated through Panama City and other population areas, assessing conditions and public attitudes, interacting directly with the public and with US combat and security forces, and resolving difficulties when they arose.

All of the first series of US PSYOP objectives were accomplished during *Just Cause*. US combat elements began to depart in early January 1990. Focus shifted to the consolidation of the new government in Panama and the restoration of the public information infrastructure. The PSYOP TF was stood down, replaced by a PSYOP support element comprised of 48 personnel.

This element, consisting of stay-behind PSYOP soldiers from *Just Cause* and a civilian analyst from the 1st PSYOP Bn, provided PSYOP support to the newly created Military Support Group. This unit then provided US military support to the government of Panama during the nation assistance and civil-military operations of *Promote Liberty*. From mid-January to the end of February, the PSYOP support element produced and disseminated more products and planned and executed more activities than all those in support of *Just Cause* combat operations.

ENTREGUE SU ARMA DE LA SIGUIENTE MONERR



Source: 1st PSYOP Battalion, US Army

Figure 9. One of many later versions, this poster not only indicates procedures for surrendering arms but also identifies turn-in locations and their hours of operation. Subsequent versions left some of the data blank so that Special Forces soldiers in the countryside could fill in the information and administer similar programs.

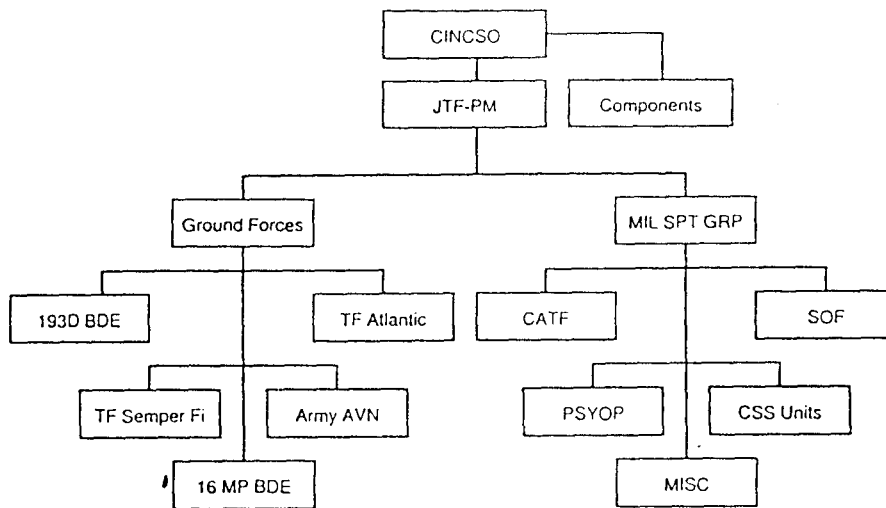
The highly efficient and productive mini-task force increasingly worked in conjunction with the new government, the commercial media, the US Embassy, the Military Support Group, and JTF-Panama to create conditions favorable for restoring democracy, the economy, and public security. Major emphasis was placed on these objectives:

- **Maintaining support for US objectives in Panama.**
- **Professionalizing the newly formed Panama Public Force and Panamanian Police Force (PNP)-constituted principally by former members of the PDF.**
- **Gaining public support for the Public Force and PNP.**
- **Enhancing the effectiveness and prestige of the new government.**
- **Neutralizing disinformation and hostile propaganda directed against the government, the Public Force/PNP, and the US.**

By the end of February, these PSYOP soldiers had been redeployed to Fort Bragg. They were replaced by 8th PSYOP Bn soldiers augmented by linguists and area experts from the 1st PSYOP Bn and by camera and audiovisual technician teams from the 4th PSYOP Gp's Strategic Dissemination Company. This group continued operations, employing the full range of dissemination media, until stood down in May 1991. The final PSYOP objectives envisioned for Panama contingency operations had been accomplished.

From beginning to end, PSYOP supported all stated US military and political objectives. During the initial stages of the assault, PSYOP loudspeakers, leaflets, TV and radio announcements successfully appealed for cessation of hostilities; surrender of weapons and members of the PDF and Dignity Battalions; and compliance with measures promulgated by the newly formed Panamanian government. Psychological operations enhanced credibility of US military forces, assisted in gaining and retaining popular support for US actions, and helped reduce the potential for damaging disinformation and hostile propaganda.

As the operation progressed, psychological operations and PSYOP forces were fully integrated into consolidation operations and emergency relief activities while fostering an



Source: 1st PSYOP Battalion, US Army

Figure 10. The PSYOP support element coordinated directly with JTF-PM, ground forces, other elements within the MSG, the Panamanian government, and the US Embassy.

atmosphere of return to normalcy. Announcements via US military PSYOP and commercial news media supported this process. Through programs and information developed or disseminated by PSYOP soldiers, 193d SOG Volant Solo technicians, and host-nation affiliates, Panamanians knew when and where to go to satisfy their fundamental needs. Through this process, PSYOP supported not only the theme of legitimacy of the US operation, but also the legitimacy of the newly formed government of Panama.

During the final phase of military operations, US PSYOP supported an orderly return of control to the host-nation government, addressed major sanitation and health threats, and continued military information programs. All of this facilitated prompt return of the deployed US military personnel to CONUS.

Finally, as a natural consequence of these accomplishments, psychological operations and PSYOP units gained recognition among many important US commanders of combat and combat support units participating in the operation. Not only did PSYOP affect them personally by assisting in the reduction of casualties

and damage on both sides, but also assisting in presenting the most favorable image of their commands to the Panamanian population and to the world.

Many of these accomplishments cannot be measured in quantifiable terms. However, there were obvious indicators of success:

- surrender of enemy forces after exposure to loudspeakers and leaflets;
- immediate public response to posters, loudspeakers, and TV/radio announcements, resulting in valuable information and intelligence;
- civilian compliance with instructions conveyed via PSYOP media;
- virtual absence of hostile propaganda and disinformation which could have obstructed the mission; and
- prompt restoration of commercial information services, which contributed to the legitimacy of the new democratic government.

Many valuable lessons were learned by the PSYOP community itself:

- The PSYOP TF commander simultaneously serving as JTF PSYOP officer, theater PSYOP officer, and PSYOP TF commander enhanced initial planning and coordination. As the operation progressed, however, these duties overextended the capabilities of the commander to the extent that he encountered difficulty supervising and controlling the many disparate and geographically separated PSYOP elements and operations.
- The requirement that PSYOP TF simultaneously provide JTF staff support, control tactical assets, and develop and disseminate PSYOP products stressed the capabilities of the task force to the breaking point. The battalion staff and company configurations did not easily adjust to the requirements of a task force much larger and more complex than experienced before. Of particular concern was an inability to control the tactical PSYOP teams, which were vital to successful PSYOP campaign planning and evaluation. Attaching these teams OPCON to combat commanders while optimizing on-site responsiveness during the assault phase detracted from

overall PSYOP TF performance during consolidation activities. These teams should have reverted to a direct support status under operational command of the PSYOP TF as soon as that force had the ability to fully exercise that function. Unfortunately, that capability did not materialize until the majority of the teams had returned to the US.

- Augmentation from other battalions of the 4th PSYOP Gp was essential to the success of the PSYOP TF. However, due to the peacetime configuration and functioning of the group, which only occasionally involved an integration of effort across battalion lines, the full talents and capabilities of soldiers and equipment were extremely difficult to exploit in Panama.

- The L-Peries modified table of organization and equipment (MTOE) for the 4th PSYOP Gp and its subordinate units was not optimally suited to requirements of the contingency.

Some of the "good things" that were either learned or reinforced are listed below.

- Early integration of PSYOP into the contingency planning process helped ensure overall success of the operation.

- Tactical loudspeaker teams contributed to demoralization of the PDF and DIGBATs and to cessation of hostilities and surrender. The teams used prepackaged scripts and recordings, but frequently employed their own ingenuity and linguistic capability "on the spot" to deal with both hostile forces and the civilian population. Tactical commanders of Army forces, Marine Corps forces, and Navy SEAL forces placed considerable importance on these teams.

- The Panama population listened to, and complied with, instructions and advisories from US military PSYOP TV, AM radio, and loudspeaker broadcasts.

- The working relationship that the 4th PSYOP Gp commander and the 1st PSYOP Bn commander enjoyed with the XVIII Airborne Corps commander and stag, and with CINCSOUTH and his staff prior to Just Cause and Promote Liberty, undoubtedly resulted in a degree of understanding and trust which were critical to the success of joint PSYOP throughout the contingency operation.

- Psychological operations soldiers and airmen were well trained, motivated, self-confident, and effective.

Certainly, some of the problems and some of the "success stories" were situation dependent and can never really be formalized. However, in June 1991-less than six months after the Panama contingency was executed and only weeks after return to CONUS by the last 8th PSYOP Bn members of the PSYOP Support Element-the 4th PSYOP Gp was provisionally reorganized. Regionally oriented battalions remained, but the group was now organized according to an operational concept suitable for a wide variety of contingencies.

The reorganized 4th's basic tenets:

- **The 4th PSYOP Gp commander would deploy to the theater headquarters, along with a small headquarters element, to provide PSYbP advice and assistance to the supported theater CINC and act as "expeditor" for PSYOP-related actions. (This happened informally in Panama, when the 4th PSYOP Gp commander performed this function not only for the PSYOP TF but also for the 96th Civil Affairs Bn, the 112th Signal Bn, and the 528th Support Bn-three units which were at that time under the 4th's peacetime command and control. The concept proved so beneficial to both the PSYOP TF and to CINCSOUTH that it was formalized.)**

- **The PSYOP TF would continue to be commanded by the theater PSYOP battalion commander, but with two other PSYOP battalion commanders working for him:**

1. **A tactical commander (the commander of the reconfigured 9th PSYOP Bn) would control all PSYOP loudspeaker teams and other tactical PSYOP assets and ensure support to other tactical elements of the JTF. The 9th PSYOP Bn would train for these support missions worldwide.**

2. **A media production commander (the commander of the new provisional PSYOP Dissemination Bn) would produce all printed products, recordings, and audiovisual products, and would run all radio and television broadcast operations.**

Since the 4th PSYOP Gp would now be provisionally organized to operate the same in peacetime as in war, it was presumed that overall effectiveness of contingency PSYOP would improve.

The opportunity to validate the new concept presented itself sooner than anyone could have expected. Within one month

after the 4th PSYOP Gp's reorganization, Iraqi forces invaded Kuwait. When PSYOP forces deployed to Saudi Arabia, they did so in the configuration described above. It worked, and worked well! It is estimated that 29 million leaflets and many hours of loudspeaker and radio broadcasts During *Desert Shield* and *Desert Storm* resulted in thousands of Iraqi soldiers being influenced by PSYOP to abandon their positions and equipment and to surrender.

One can only speculate on what might have been the results had PSYOP forces not participated in these contingencies, but the indicators of success are pretty clear. In the author's opinion, these successes are a tribute to the PSYOP soldiers, civilians, and airmen-past and present-whose competence, dedication, and ingenuity most certainly saved US and Panamanian lives and contributed to mission success. Their accomplishments have resulted in increased recognition of the value of PSYOP by senior military commanders and their staffs, and by other agencies of the US government. However, this renewed interest and understanding is highly perishable. We still have a long way to go before the potential of strategic, operational, and tactical PSYOP-and the forces which plan and execute these operations-is fully realized.

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Psychological Operations

in Action

Poland's Underground Media



Laurence J. Orzell

Poland offers a fascinating example of nongovernmental psychological operations in action. Drawing upon that country's long tradition of a conspiratorial press, dissidents affiliated with the banned Solidarity trade union and other organizations engaged in the large-scale production of underground newsletters, leaflets, books, and other printed materials designed to influence popular perceptions. The dissidents also utilized electronic media such as radio and cassettes.

Those activities reflected a broad range of antiregime opinion, but their overall purpose was twofold: to supply uncensored information on political, social, and economic issues, and to maintain a spirit of opposition among the populace. While the dissidents would probably have described their efforts as purely informational or journalistic, their activities could accurately be described as peacetime, non-governmental PSYOP. This article places the Polish opposition's PSYOP efforts within their historical context but focuses on the period following the imposition of martial law (December 1981). In particular, the analysis examines the type of underground print materials produced, the means used to prepare and disseminate them, the government's response, the main themes the dissidents sought to propagate, and the opposition's use of electronic media. The article concludes with an assessment of the overall significance of those efforts.

The Polish resistance, whether directed against czarist Russia, Nazi Germany, or native communist rulers, recognized the value of PSYOP. When the Poles revolted against Russia in January 1863, they formed a conspiratorial government that not only conducted urban guerrilla warfare; it also organized an underground press which contained manifestos directed at

Poles, Lithuanians, Byelorussians, and Ukrainians. Although this effort failed, it contributed to the maintenance of armed resistance. The underground media played a much greater role during World War II. The Home Army (*Armia Krajowa*), Poland's chief resistance group, regularly published an *Informational Bulletin* (*Biuletyn Informacyjny*), copies of which circulated from hand to hand and thus indirectly supported diversions and armed opposition to the Nazis. Other groups, ranging from the far right to the extreme left on the political spectrum, also produced leaflets (*ulotki*) and other publications. So extensive was this network that the London-based Polish government-in-exile issued a postage stamp in 1943-itself a form of PSYOP-commemorating the underground press (*prasa podziemna*).

Armed resistance to foreign domination proved impractical following the communist consolidation of power after World War II, but dissident psychological operations eventually came to assume even greater importance. Antiregime intellectuals benefited from their government's reluctance to engage in extensive repression during the 1970s-lest Poland risk losing the economic benefits of detente-and they established a variety of illegal publishing ventures. One group in particular, the Workers' Defense Committee (later renamed the Social Self-defense Committee), distinguished itself through its publications: *Communique* (*Komunikat*), *Information Bulletin* (*Biuletyn Informacyjny*), and *The Worker* (*Robotnik*). Dissidents also set up an Independent Publishing House, better known by its Polish acronym NOWA, which produced numerous literary works and several periodicals. Despite periodic harassment by the authorities, NOWA and similar illegal publishing enterprises prepared materials targeted at laborers, students, farmers, and other social groups. There can be little doubt that these publications, which advocated political pluralism and respect for human rights, helped forge the broad social alliance which led to the formation of Solidarity during July and August 1980.

Both the regime and the workers used PSYOP extensively during the 1980 strikes. For instance, when the authorities distributed leaflets questioning the striker's motives, the workers responded with broadsheets of their own, counseling

resistance in the face of what they termed government disinformation. The government's acceptance of the strikers' "Twenty-one Demands" effectively extended legal recognition to unofficial publishing activities. The subsequent "Gdansk Agreement" obliged the regime "to respect freedom of speech and ... not to suppress independent publications." Solidarity quickly took advantage of this unprecedented concession. The union published its own national organ, *Solidarity Weekly* (*Tygodnik Solidarnosci*), and regional branches followed suit with a plethora of journals and newsletters. The union press both reflected and shaped the popular perception that the government could not be trusted to carry out the Gdansk accord. Not surprisingly, these publications represented one of the principal targets of repression when the authorities declared martial law on 13 December 1981.

Despite internment, arrests, and confiscations, the underground press quickly reappeared and assumed an even greater importance due to the fact of dissatisfaction. Some activists who were placed in internment camps in 1981-82 even managed to produce handwritten newsletters. For instance, internees at a detention camp in Nowy Lupkow prepared several issues of a newsletter entitled *Our Bars* (*Nasza Krata*), named after the prison bars which isolated them from society. Copies of *Our Bars*, reportedly circulated outside the camp, counseled the maintenance of worker-intellectual ties in the face of government repression. The vast majority of underground publications produced during and after martial law emanated from small groups of individuals in larger cities and towns who had avoided capture. The importance of these PSYOP efforts in dissident strategy became clear when Solidarity's underground Provisional Coordinating Committee issued a declaration in 1982, stressing the need to "organize the independent circulation of information" and thereby "expose the propaganda goals of the authorities."

The underground press produced nearly 1,000 different periodicals, approximately 400 of which appeared repeatedly, some on a regular basis. While it is difficult to estimate the total readership, the sheer number of publications suggests that these materials enjoyed wide circulation, primarily in urban areas. During the first four months of martial law, the

underground published 100 different titles. Many of the early editions bore the simple yet historically significant title *Information Bulletin (Biuletyn Informacyjny)* and consisted of one or two pages. As might be expected, the majority of these materials were prepared in Warsaw, Poznan, Wroclaw, Lodz, and Gdansk. Press runs varied from several hundred to over 10,000, depending largely upon available equipment and printing supplies. During the martial law period (December 1981–July 1983), most of these publications emanated from the remnants of these periodicals, including *Mazovian Weekly (Tygodnik Mazowski)*, which was prepared by union activists in Warsaw! but Solidarity cells in factories and other local enterprises also issued short newsletters.

Solidarity activists did not, however, constitute the only source of clandestine periodicals in Poland. The publications of other underground groups assumed somewhat greater prominence after 1985, due at least in part to the increasingly dim prospects for the union's revival. Nearly all of these groups professed loyalty to Solidarity's ideals, but they also expressed a variety of opinions that distinguish them from the Solidarity mainstream. Three of these organizations merit particular attention. One, known as the Committees for Social Defense (*Komitety Obrony Społecznej*), issued a journal called KOS, which was directed primarily toward an intellectual audience. The Fighting Solidarity (*Solidarnosc Walczaca*) group published a paper of the same name, advocating a more confrontational stance than that favored by most Solidarity leaders. The Confederation for an Independent Poland (*Konfederacja Polski Niepodleglej*), a right-of-center group that antedated Solidarity, disseminated its strong critiques of the regime through its journals *Independence (Niepodleglosc)* and *We Don't Want Commies (Nie chcemy komuny)*. Further, publications targeted at specific social groups such as teachers, university students, and medical workers also attained greater prominence.

Several clandestine publishers branched out into the production of full-length books, an effort that gave rise to greater coordination among the underground media. In October 1986, representatives of several underground journals formed a Social Council for Independent Publishers. At the same time, several publishers concentrated on books rather than periodicals

because sales of the latter proved less profitable. Because this might portend a shift from shorter periodicals to longer products, some activists called for renewed emphasis on journals. Much of the debate centered on the role of the Consortium of Independent Publishers, a group founded in 1986, which sought to promote greater cooperation and minimize duplication within the underground media. Defenders of the consortium claimed that periodicals would continue to play a key role. In June 1986, the consortium helped found an Independent Publishers' Insurance Fund to reimburse members whose operations were closed by the authorities.

Leaflets, handbills, and other ephemera were also used by the Polish opposition, but they declined significantly with the decline in large-scale demonstrations. During the martial law period, the underground produced leaflets in connection with local strikes and other public protests. For example, activists printed and distributed a small leaflet announcing the place and time of a pro-Solidarity rally in Warsaw scheduled for May Day 1985. Leaflets were also used to alert the populace of the time and frequency of Radio Solidarity broadcasts. Still other broadsheets were designed to identify and disgrace those who cooperated with the regime during martial law. For instance, one handbill, entitled "List of Collaborators," purported to be a commendation from the government. The citation praised the recipients for their assistance and contained a blank space for insertion of the collaborators names.

Polish underground PSYOP also relied heavily upon the dissemination of nonverbal symbols by means of mock postage stamps and currency. In 1984, for example, the opposition produced a series of stamps portraying dissident leaders such as Jacek Kuron and Adam Michnik. That same year, the Solidarity organization in Krakow issued a stamp in honor of George Orwell. During 1986, dissidents printed a set of stamps commemorating "150 Years of the Underground Press in Poland." In addition, the underground produced forged Polish currency bearing the portrait of Lech Walesa in place of the figures who appeared on genuine banknotes. Dissidents reportedly printed a banknote containing the likeness of Gen Wojciech Jaruzelski and the inscription, "30 Pieces of Silver." Crude forgeries of US currency, designed as novelty items, also

appeared. During 1985, for instance, an oversized counterfeit of a \$100 bill appeared in Poland with Walesa's picture in place of Benjamin Franklin's portrait.

The producers of underground publications faced a variety of obstacles. Dissidents understandably were reluctant to discuss openly the details of production and dissemination techniques. Most individual publishing enterprises were comprised of small numbers of people who strived to keep their identities and the location of their equipment well-concealed. Materials were first produced on typewriters using carbon paper or on mimeograph machines but the opposition increasingly came to rely on offset and silk-screen presses. The printing process was itself dispersed, particular functions being assigned to different locations. According to the production chief, Warsaw's *Tygodnik Mazowsze* needed 37 apartments, 30 of which were used in preparing each issue. Funds to acquire and maintain equipment came from publication sales, but Solidarity sympathizers abroad also collected financial assistance and made it available. The dissemination of underground publications necessarily involved significantly large numbers of people and great risk. Once printed, copies were reportedly sent to a variety of locations, where *kolportery* (literally, "hawkers") collected them for delivery to subscribers. In the case of *Tygodnik Mazowsze*, this led to the creation of a huge distribution network.

The Polish government responded to underground publishing with a curious strategy that blended harassment, repression, propaganda attacks, disinformation, and apparent neglect. The regime attempted to limit underground publications through strictures on the availability of printing supplies. Stationery shops were required to record all purchases of more than 1,000 sheets of paper. Agents of the Security Service (*Sluzba Bezpieczenstwa*) reportedly monitored such purchases and penetrated several underground organizations. From time to time, officials arrested individuals connected with dissident publications. Anyone engaged in such activity could be detained for 48 hours and fined up to 50,000 zlotys-the amount earned by an average Pole in two months. The authorities sometimes confiscated automobiles belonging to distributors, presumably to hamper the latter's ability to

continue their work. In some cases, the Security Service closed printing operations completely.

The regime also conducted a major PSYOP effort of its own to discredit the underground media. This campaign contained a variety of themes, one of which posited that underground publications were tools of the West-especially the United States. For example, the official press frequently claimed that US dollars were sent to the underground to ferment unrest in Poland. Also, infrequent factual errors in the underground media offered opportunities for the regime to attack their credibility. Moreover, government agents periodically engaged in black propaganda. In some instances, portions of genuine publications, were excised and replaced with forged texts. On other occasions, security officials produced forgeries of entire journals. And in still other cases, erroneous or otherwise embarrassing information was covertly supplied to publishers who reproduced it in good faith. For the most part, however, underground publishers discovered and exposed such activities.

Despite governmental attempts to close them down, Poland's underground media remained prodigious by East European standards. True, the sheer extent of underground publishing rendered it difficult for the regime to suppress such activity entirely, even if Polish officials had made a concerted effort to do so. Nevertheless, why they did not adopt even stronger measures raises some interesting questions. It may well be true, as one Western journalist suggested, that the government could not stamp out the underground media without causing uproar at home and making Poland an international outcast. This consideration might have grown even greater after Mikhail Gorbachev assumed power in the USSR. The regime might also have concluded that it could not hope to win genuine popular support and must therefore tolerate the phenomenon. Then, too, government officials might have believed that the underground press allowed dissidents to vent their frustrations in a relatively harmless manner so long as opposition remained largely confined to the realm of theory.

The underground press criticized and challenged the political, social, and economic status quo. During the martial law period, dissident media served primarily to report instances of repression and to encourage resistance among the

populace. For example, they published information on political prisoners, endorsed strikes and demonstrations, and advocated noncooperation with the regime (e.g., election boycotts). When it became apparent that direct confrontation would not bring about the restoration of Solidarity (or other reforms), the underground press as a whole resigned itself to a long-term struggle with the authorities.

Underground publishing reflected a variety of political trends, from right-wing Polish conservatism to liberal democratic socialism. However, nearly all publications shared some common goals. According to a report issued in early 1987 by the Social, Council for Independent Publishers, they strived to propagate undistorted Polish history, Poland's struggles for independence, the postwar rule of communism in Poland, and methods of national resistance. In this way, they hoped to expose "ideological myths" and "propaganda falsehoods of the communists."

In its attempts to achieve these goals, the underground press addressed a wide range of domestic and international issues. Violations of human rights and the absence of genuine democracy in Poland continued to bulk large in its reportage, but it also devoted significant attention to economic affairs in light of the chronic shortages and debt problems that plagued the Poles. It reflected and encouraged debates over the extent to which dissidents might work for reform through participation in legal organizations such as the workers' councils that were set up following the banning of Solidarity.

Significantly, the emergence of the Freedom and Peace Movement (Wolnosc i Pokoj), which encouraged arms reduction and resistance to compulsory service in the Polish People's Army, also received favorable attention from the underground media, as did environmental issues. Particularly noteworthy was the underground media's increased coverage of international questions such as US-Soviet arms negotiations, Gorbachev's apparent efforts at internal reform, and economic developments in China. Despite glasnost and perestroika, however, the underground media generally continued to criticize the Soviets and praise the Americans.

The underground press clearly constituted the principal means for the dissemination of opposition PSYOP, but

dissidents also extended their efforts to the realm of electronic media. Radio broadcasting proved to be highly vulnerable to jamming and to detection by the authorities, but it continued to resurface from time to time. Dissidents with some experience in electronics constructed ersatz transmitters and made brief broadcasts on FM frequencies from the roofs of large buildings. Collectively called Radio Solidarity, such transmissions first appeared on the airwaves during April 1982, after which they were broadcast in several different cities. Program content was necessarily limited, but broadcasts usually addressed such current affairs as price hikes or the significance of historical anniversaries. In some instances, these transmissions successfully overrode television signals in order to convey a brief verbal message or a "still" image of the slogan *Solidarnosc zyje* (Solidarity lives).

Dissident psyopsters also made good use of videocassette recorders (VCR), audiotape recorders, and even microcomputers. Poland contained an estimated 500,000 to 700,000 privately owned VCRs. The NOWA underground publishing enterprise distributed not only Western films but also videocassettes on Polish subjects produced by the Paris-based Videokontakt organization. Domestic productions, such as filmed interviews with Lech Walesa, also circulated widely. Government authorities attempted to suppress this activity—primarily by confiscations at the border—but the trade continued to flourish. The underground also prepared and disseminated a large variety of audiocassettes containing antiregime songs, news commentaries, interviews, and lectures on Polish history. Some of these tapes reportedly were broadcast over factory loudspeaker systems. Finally, several clever computer owners managed to generate antiregime texts or games. According to an acerbic report published in the hard-line military newspaper *Zolnierz Wolnosci* (*Soldier of Freedom*), Western interests inspired some programmers to create programs that promoted anticommunist attitudes.

Despite various crackdowns by the authorities, the underground media remained a part of the Polish sociopolitical scene. Dissidents stood in a centuries-old tradition of conspiratorial information activity, and their eagerness to utilize modern technology rendered it virtually impossible for the

regime to suppress their efforts. As suggested above, the government might have decided to tolerate this situation; nevertheless, the opposition media in Poland provided a real-world example of the success that can be attained through nongovernmental PSYOP.

The Libyan Raid as a Psychological Operation



Col Frank L. Goldstein, USAF

The use and employment of US forces in psychological operations is a basic but little understood part of US doctrine. The use of US forces to achieve national strategic and tactical security objectives is the basis of PSYOP planning. Security objectives include the influencing of friendly, neutral, and/or enemy audiences to behave favorably or unobstructively toward US national security. A psychological operation is any operation that conveys selected information and indicators to foreign individuals and groups and influences emotions, motives, objective reasoning, and ultimately the behavior of the target audience. Such an operation should also induce or reinforce foreign attitudes and behavior that are favorable to US objectives. The target audience is a foreign group that may include hostile military forces but can also be neutral or friendly.

The stated purposes of the US raid on Libya as reported in the press were to emphasize the cost of state-sponsored terrorism, to damage terrorist operations, and to encourage internal insurrection (*New York Times*, 5 May 1986). I view the US Libyan raid as strictly a psychological operation, an operation planned and carried out to achieve a psychological point of view.

An analysis of the Libyan situation prior to the US raid would have revealed the following scenario.

- Was a psychological operation required? The answer would be yes. The United States needed to influence attitudes and behaviors concerning terrorism among enemy, friendly, and neutral audiences, especially with Libya and Muammar Qadhafi.**

- What would be the best psychological operation approach? **The best approach in consideration of prior attempts to influence Qadhafi and others would be a limited tactical air strike.**

- What was the psychological situation? **The psychological situation revealed that many nations, friendly, neutral, and enemy, were not taking seriously the US concern about state-sponsored terrorism. Colonel Qadhafi had revealed himself to have mood swings and to be susceptible to depressive episodes. Intelligence and the media revealed that there was underlying dissatisfaction within the Libyan government with the current policies of Qadhafi. Additionally, the world had just been --objected to a series of terrorist acts and appeared receptive to such a raid.**

- Would an air strike have a strategic psychological effect? **A successful air strike against Libya and Qadhafi could produce the following: (a) notice to all nations that the US would not tolerate state-sponsored terrorism, (b) notice to Qadhafi that his power was not absolute, (c) notice to anti-Qadhafi forces in Libya that the current actions of Libya could reap dire consequences for all, (d) a reduction in terrorist acts as Qadhafi and his forces would be forced to regroup, and (e) additional time to get other Western nations more involved in antiterrorist operations. On 15 April 1986, the United States, using Air Force and Navy resources, carried out a bombing raid on Libyan targets.**

The results of that raid among enemies:

- **Qadhafi instructed his operatives to deemphasize attacks on US military targets but to look for easier US targets (*Washington Post*, 4 May 1986).**

- **The Soviets contended that Libya's failed defense was a failure of men, not weapons-some Libyan officers were purged.**

- **The absence of any promised Soviet military support and the fact that the Soviet Union and Libya did not negotiate a formal treaty pledging Moscow to come to Colonel Qadhafi's aid demonstrates that the USSR was not willing to back up Qadhafi with more than words (*Christian Science Monitor*, 24 April 1986).**

- **There was a decline in Qadhafi's popularity-and some decline was already ongoing due to economic policy.**
- **The Soviets openly questioned Qadhafi's wisdom-a high Soviet official was quoted as saying "Khadafy is a madman on top of a pile of gold" (Washington Post, 24 April 1986).**
- **Syria publicly and openly rejected the idea that Syria has any connection with terrorist activities.**
- **The Soviets found themselves in a double bind: if they helped Qadhafi too much they would drive him further away from conservative Arab support. If they didn't help him, he might destroy himself and the Soviet foothold in the Middle East.**

Results of the raid among neutral nations:

- **Sixty-five percent of the French people supported the United States and were critical of their own government's nonsupport (Washington Post, 24 April 1986).**
- **Saudi Arabia rejected a Libyan appeal for financial aid (Washington Post, 1 May 1986).**
- **Several Arab nations, while delivering perfunctory denunciations of the United States, privately expressed congratulations. Two Arab countries didn't even issue any complaints (Iraq and Tunisia). Egypt's, Oman's, and United Arab Emirates' official responses were noticeably mild. The newspapers of Jordan and Tunisia did not run editorials on the action (Los Angeles Times, 27 April 1986).**
- **A Libyan call for an emergency Arab summit meeting resulted in Iraq, Jordan, Syria, and Saudi Arabia stating they would be unable to attend.**

The raid's results among friends:

- **There was strong support against terrorism at the Tokyo Economic Summit.**
- **European allies were persuaded to take basic concerted action against terrorism-a blow for reason as well as deterrence (New York Times, 24 April 1986).**
- **Despite an initial outcry, west European countries moved with quiet determination on four fronts: They kicked out a number of Libyan diplomats and suspected agents, significantly increased intelligence through sharing and coordination,**

encouraged their nationals to leave Libya, and quietly cut much of their trade with Libya (*Boston Globe*, 25 April 1986).

In terms of Colonel Qadhafi's own personality, he made no major radio, TV, or personal appearance for almost six months. On the 16th anniversary of his expelling the US from Wheelus Air Base, a major event in Libya to which the foreign press was invited to hear a major speech, Qadhafi did not appear. Fewer than 2,000 attended. Videotapes were presented, revealing an exhausted-looking Qadhafi fidgeting in his chair, speaking in a hoarse voice, and making a speech devoid of his usual fiery rhetoric. This lackluster performance reinforced the belief that' Qadhafi was slow to recover from the shock of the 15 April raid (*Time Magazine*, 23 June 1986). He began to reappear late in August 1986 in both public and TV formats.

The raid's effect on underlying dissatisfaction within Libya can be supported by the following comments:

- **Qadhafi is still in control but soul-searching is under way. He began relooking at Libyan efforts in Chad and Sudan. Some senior Libyan leaders have talked openly about a lower Libyan profile in terrorism (*Washington Post*, 4 May 1986).**
- **The US raid forced Qadhafi to share power with the four members of Libya's ruling Revolutionary Council (*Time Magazine*, 23 June 1986).**
- **A summary of several stories can equate to the notion that the raid may have strengthened Qadhafi in the limited sense that the masses may now not be ready to overthrow him. However, the regular officer corps and influential citizens may be more willing to attempt to modify his behavior.**
- **It should be noted that without US intervention, 10 attempts to remove Qadhafi by members of his military have occurred since 1980 (*Los Angeles Times*, 27 April 1986).**

The reception of the raid by the countries of the world was to some extent known before the raid and should be judged more as action taken than in words spoken. The European allies, recipients of most terrorist acts carried out against the West, are always fearful of additional acts. Since the raid, there has been unprecedented security and the sharing of antiterrorist information. An economic summit took place in which terrorist

activities were discussed and meaningful ground rules were set up by the Western allies.

The raid on Libya appears to have been extremely successful as a psychological operation; yet it is doubtful that it was originally planned as a psychological operation. While any operation can have a psychological component, often that component is not a major consideration in planning and its effects are underestimated. If the raid had been originally planned as a psychological operation, the attack on Qadhafi's personal dwelling would have had to remain on the target list. But the tactical air strike would not need to be as accurate in a PSYOP mission. For example, the use of sonic booms and attacks on less-defended targets would most likely have produced the same results. However, in the final analysis, if senior planners considered the Libyan raid as a psychological operation, it achieved all its goals.

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The Role of Military Psychological Operations in Support of National Antidrug Policy



Maj James V. Keifer, USAF, Retired

War does not belong in the realm of arts and sciences; rather it is part of man's social existence.... Politics, moreover, is the womb in which war develops.

-Carl von Clausewitz

The United States is engaged in a war against a drug culture that threatens to destroy the nation's social-political-economic fabric. The war is being fought on both domestic and foreign fronts against a culture of users and providers of illegal drugs. The national drug control strategy targets both supply and demand. National policy statements by Congress in the Anti-Drug Abuse Act of 1988 and by the president's 1990 strategy statement imply this to be a war of annihilation, but limited two- and 10-year goals make deterrence more realistically the objective of this strategy-detering illegal drug use and trafficking. The US military, as an instrument of national policy, has been brought actively-although with definite limits-into this engagement. To fight the war, the US military establishment has decided-or has had decided for it-to avoid using one of its most potent weapons: PSYOP. Ironically, the US government believes it is important to bring other psychological instruments on both domestic and foreign fronts. If this country expects to achieve victory over illegal drugs, biases against the use of US military PSYOP should be recognized and put aside.

Is the nation truly at risk? What is the national antidrug policy, and what are its priorities, goals, tools, and strategies? What is the role of the US military in pursuing national antidrug policy? How can US military PSYOP be employed to

support the war against illegal drugs? To answer these questions, this essay examines how our national leaders define the threat. It also reviews recent drug policy, strategy, goals, and objectives, concentrating on those roles in which the military and PSYOP are most likely to become engaged.

The Threat Defined

National Security Decision Directive (NSDD) 221 of 1986 defines international drug trafficking as a national security threat to the United States. With the signing of this directive, the president placed illegal international drug trafficking on the official agenda of the National Security Council (NSC). This action established a requirement for the secretary of state to coordinate, through the chiefs of missions, all drug-related assistance, information, and activities within foreign countries. The State Department also served as the link between Central Intelligence and insurgency. The Director of Central Intelligence (DCI) was assigned responsibility to collect, analyze, and disseminate intelligence on the trade of illegal drugs. The secretary of defense was tasked to manage military drug-related activities, including plans, operations, intelligence support, drug interdiction, training of foreign military counterparts, and other related support.¹

Even with the threat established, national policy and objectives were ambiguous at best. Activities reflected need for a national mechanism to coordinate interagency efforts and to provide expert, professional guidance. The political community saw the need for a clear-cut policy to attack the drug problem and put substance behind rhetoric. Things began to move in the terms of Clausewitz, "If war is part of policy, policy will determine its character. As policy becomes more ambitious and vigorous, so will war."²

The President of the United States and the US Congress declared war on drugs with the passing of the Anti-Drug Abuse Act of 1988.³ This legislation established the National Drug Control Program (NDCP) and created the Office of National Drug Control Policy (ONDCP) within the Executive Office of the President, effective January 1989.⁴ William J. Bennett was named director of ONDCP to orchestrate the

activities of participating agencies that were contributing to the combined effort. His position was designed to provide guidance, consistency, and continuity, and to resolve jurisdictional disputes.

Bennett's assignment to head ONDCP, leading a serious combined interagency effort, and to implement a comprehensive program to fight a burgeoning social-economic-medical problem, signaled an increased resolve in antidrug policy. Legislation directed the ONDCP director to set policies, objectives, and priorities for the NDCP and to provide the annual national drug control strategy for the president's presentation to Congress by 1 February each year. Congress required the strategy to include both long-range goals and short-term (achievable within two years) measurable objectives. Further requirements were to (1) define the balance between expenditures for supply reduction and demand reduction and (2) submit a review of state and local government efforts to support the program.⁵

National Drug Policy

Responsible directly to the president for recommending changes in the program's organization, management, and budget, the director of ONDCP serves as the executive branch representative on drug issues before Congress. He or she coordinates and monitors the implementation, execution, and fulfillment of the program's policies, objectives, and priorities by designated agencies. When agencies' policies fail to meet the responsibilities required by the national drug control strategy, the director notifies the agency head and directs that measures be taken to comply. The director also serves as chief consultant to state and local governments on national drug control matters.

The Anti-Drug Abuse Act of 1988 provided the director with three principal subordinates: a deputy director for demand reduction, a deputy director for supply reduction, and an associate director to head a Bureau of State and Local Affairs. The president was responsible for nominating appointees to these positions. When confirmed by the Senate, they were prohibited from simultaneously holding other federal govern-

ment positions.? The act recognized "the magnitude of the illicit drug problem and the threat it poses [to the] national security of the United States."⁸ Disavowing proposals to decriminalize drugs, the act went on to say that "legalization of illegal drugs ... is an unconscionable surrender in a war in which, for the future of our country and the lives of our children, there can be no substitute for total victory."⁹ It then proclaimed, "It is the declared policy of the United States Government to create a Drug-Free America by 1995."¹⁰

The primary executive branch departments and agencies responsible for illegal drug supply reduction activities include the departments of Justice, Treasury, State, Transportation, Agriculture, Health and Human Services, Interior, and Defense; the Central Intelligence Agency, the Agency for International Development, the United States Information Agency (USIA), and the United States Postal Service. Those designated as primaries for demand reduction activities include the departments of Health and Human Services, Education, Housing and Urban Development, Labor, and Veterans Affairs. Additionally, the judicial system and various state and local agencies support the NDCP activities.

As the lead federal agency for the war on illegal drug trade, ONDCP was tasked to outline the national strategy, establish tangible short- and long-term goals, and coordinate and monitor those departments, agencies, and bureaus designated to take the battle to the enemy. The office published *National Drug Strategies* in September 1989 and January 1990. These documents served as the president's reports to Congress on the status of activities and intentions of the National Drug Control Program. ¹¹

Prior to establishing the ONDCP, the Executive Office of the President had promulgated the *National Drug Strategy and Implementation Plan* of 1988. This document identified six presidential goals: drug-free workplaces, drug-free schools, expanded treatment, improved international cooperation, strengthened drug law enforcement, and increased public awareness and prevention. Strategy focused on reducing the supply of illegal drugs, both grown in and imported into this country, and on reducing the demand for illegal drugs in the United States. The plan characterized the drug problem as multidimensional,

involving medical, legal, security, economic, social, and educational aspects. The threat was defined in terms of drug type, production source, production increase, international cartel control, use of high technology, increased violence, and high-profit/low-risk crime.¹² President George H. Bush, in a September 1989 televised address to a nationwide audience, introduced the first strategy produced by the Office for National Drug Control Policy. His presentation outlined domestic and foreign objectives of a multifaceted attack on illegal drugs. On the domestic front, the president said the battle would be fought through programs of deglamorization, education, rehabilitation, and punishment. Foreign measures centered around programs of eradication, interdiction, extradition, and certification.

In his introduction to the 1989 *National Drug Control Strategy*, the director acknowledged that the national policy as articulated in the Anti-Drug Abuse Act of 1988—"it is the declared policy of the United States Government to create a Drug-Free America by 1995"¹³—is admirable but unrealistic.¹⁴ Bennett proposed in its place, "the highest priority of our drug policy must be a stubborn determination further to reduce the overall level of drug use nationwide—experimental first use, 'casual' use, regular use, and addiction alike."¹⁵

This report from ONDCP concluded that the situation concerning illegal drugs was deteriorating rather than improving. Crime, health, and economic factors pointed to a growing problem. (Evidence at the time—figures showing declining casual use—suggested that the problems were primarily caused by addiction.) On both the foreign and domestic fronts, illegal drugs were cited as being imminently available; and the problems were readily evident. Commenting on the need to put realism into the national antidrug abuse policy statement, Bennett charged that a de facto policy vacuum existed. He said it was time to accept the fact that the war on drugs, to be effective, would be protracted in both time and reach. Serious, coordinated efforts and significant resources were needed to get a grip on the demand for and supply of illegal drugs.¹⁶ Saying it would lead to a national disaster, Bennett articulated his adamant opposition to proposals for legalizing drugs.¹⁷

While building on the strategy from the Executive Office of the President, the 1989 *National Drug Control Strategy* was more than mere restatement of the 1988 plan. Unrealistic goals were rewritten and valid strategies were reorganized. The 1989 document outlined the national priorities as: (1) the criminal justice system, (2) treatment programs, (3) education, community, and business actions, (4) international initiatives, (5) interdiction activities, (6) research, and (7) intelligence. As mandated by the Anti-Drug Abuse Act of 1988, two- and 10-year objectives were listed. A statement on the process of implementing the national priorities was submitted with funding requirements. State- and local-level legislation initiatives were proposed to add consistency to activities below the federal level. The report articulated the importance of comprehensive information management to the program.¹⁸

The strategy recognized the contributions of a comprehensive information management program to the success of the antidrug campaign. In Bennett's introduction of the strategy, he expressed that coherent and coordinated policy-making depended upon the timely sharing of information. "Our national policy must be to maximize the sharing and use of relevant information among appropriate government organizations and to minimize impediments to its operational use."¹⁹ He focused on improving automated data-processing systems and command, control, and communications (C³) networks. In this context, information management referred to the intelligence function and communications systems rather than programs to provide people with educational material or persuasive information.

While the 1989 *National Drug Control Strategy* outlined initiatives that targeted supply-side activities, no relevant clear-cut policy statement on them was articulated. To remedy this omission, Bennett stated in the 1990 report that "the policy of the United States is to disrupt, to dismantle, and ultimately to destroy the illegal market for drugs."²⁰

The 1990 *National Drug Control Strategy* was essentially a continuation of the previous year's strategy. Its major goals included (1) restoring order and security to American neighborhoods, (2) dismantling drug-trafficking organizations, (3) helping drug users break their habits, and (4) preventing

those who have never used illegal drugs from starting. The strategy again called for cohesive, multifront attacks on both the supply and demand sides of the drug problem. In addition, the program's purpose was (1) to reduce to the maximum degree possible illegal drug supply and availability, (2) to provide treatment for users of illegal drugs and to actively discourage people from becoming involved with illegal drugs, and (3) to provide robust enforcement of drug laws by holding traffickers, sellers, the money-laundering structure, buyers, and users accountable.²¹ National priorities for the strategy were directed as follows:

1. strengthening the criminal justice system,
2. expanding and improving drug-treatment programs,
3. developing programs to keep illegal drugs out of education systems, communities, and the workplace,
4. pursuing international initiatives,
5. enhancing interdiction efforts,
6. building on the research agenda, and
7. coordinating the intelligence agenda.²²

Both supply and demand aspects were targeted for attack by the criminal justice system through actions to deter the use of illegal drugs, to disrupt the trafficking network, and to arrest, prosecute, and punish drug criminals. The 1990 strategy reinforced the 1989 strategy, which called for dismantling trafficking systems by apprehending and prosecuting organization leaders and accomplices, and by taking away their illegally acquired wealth. The goal of additionally holding buyers, sellers, and users accountable was to make illegal drugs less desirable, more expensive, and harder to get.²³

The Office of National Drug Control Policy recognized that the US could not expect to unilaterally win the war against illegal drugs. The 1989 international strategy was designed to disrupt and dismantle the multinational criminal organizations that support the production, processing, transportation, and distribution of drugs to the United States and to other nations. Building on that strategy, the 1990 programs were aimed not only at drug-producing, transit, and consumer countries, but also toward nations still experiencing few or no problems with illegal drugs by helping to strengthen resolve and resistance to

use and trafficking inside their territories. The 1990 report articulated the need for international cooperation if objectives were to be met.

Three near-term goals the national strategy sought to attain in the international arena were as follows:

- 1. providing support to help strengthen the political will and institutional capabilities of three Andean Ridge countries (Colombia, Peru, and Bolivia) by enabling them to fight illegal drug-producing and drug-trafficking organizations in their respective countries,**
- 2. helping law enforcement and military structures of the three countries to combat cocaine trade more effectively, and**
- 3. incapacitating trafficking organizations that operate in the three countries. To ensure understanding of and to develop support for the measures, the 1990 strategy tasked that "U.S. information and public awareness programs will explain and support the attainment of the three goals outlined above."²⁴**

The 1990 strategy added a new dimension-the implementation of international public information initiatives to directly support other international policies and programs. "An active public information campaign will provide vital information to foreign publics, leaders, and government officials to build support for United States and host country actions to combat drug production, trafficking, and consumption."²⁵ Receiving policy guidance from the Department of State (DOS), the USIA (with support from other federal agencies) was assigned responsibility for coordinating and leading the international information effort. These initiatives focused on informing foreign audiences about the problems caused by illegal drugs with respect to their national security, economic welfare, and environment. International information programs were to educate foreign audiences about the consequences of using illegal drugs. Another initiative of the international information program was to describe the US domestic drug problem and the progress experienced in fighting it.²⁶

The 1990 *National Drug Control Strategy* included a commitment to long-term research in the fields of treatment, education and prevention, criminal justice, and drug use.

Research provided a base of knowledge for fighting the drug problem and a foundation for future strategies. Research projects included these:

1. developing enhanced databases on drug production and consumption, and on the economic impact of drugs, including cost/benefit analyses of programs designed to reduce drug use;
2. developing regional and state drug-related data to improve the analysis and accuracy of assessing drug control effectiveness;
3. expanding domestic programs to collect information on illegal drugs and their use;
4. increasing scientific and technological research projects focused on strengthening drug enforcement and interdiction capabilities; and
5. increasing research into drug treatment to emphasize complications caused by addiction, acquired immunodeficiency syndrome (AIDS), and pregnancy.²⁷

The intelligence agenda, designed to understand and fight illegal drugs better, included acquisition, analysis, and management of information. The National Drug Intelligence Center was tasked to coordinate, consolidate, and distribute pertinent information to appropriate agencies. Responsibility for coordinating and overseeing drug-related intelligence-gathering activities of the national foreign intelligence community was tasked to the DCI. The strategy required all members of the nation's foreign intelligence community to share data relevant to drug trafficking and drug-related money laundering. This included requiring DOD's intelligence components to actively support the collection of foreign drug-related intelligence requirements outlined in the *National Drug Control Strategy*.²⁸

To effectively manage the National Drug Control Program, ONDCP established coordinating mechanisms, developed report and study requirements, and set up systemic measures to oversee priority objectives. The Supply Reduction Working Group, the Demand Reduction Working Group, the Research and Development (R&D) Committee, and the Drug-Related Financial Crimes Policy Group were created to coordinate

interagency activities. Drug control program agencies were created within federal departments, agencies, and bureaus to manage the organizations' internal activities and serve as single points of contact for responding to drug issues. Lead agencies were designated to direct, coordinate, and provide expertise to specific activities. Management studies included the Executive Reorganization Study, the Department of Justice Reorganization Report, the R&D Facilities Plan, and reports on communications and automated data-processing initiatives. The Office for Treatment Improvement was created within the Department of Health and Human Services to lead the federal effort to improve the nation's drug-treatment activities. Information clearinghouses were set up in departments, agencies, and bureaus to access data readily. The National Drug Intelligence Center was established to oversee information management. Statutes were implemented at state and local levels to deny convicted drug offenders access to specific federal benefit programs. A programming and budgeting system was created within ONDCP. Model legislation on drug-free workplaces was provided to state and local governments.²⁹

Information management initiatives-developing command, control, communications, and intelligence networks-were built on the previous year's strategy. The only notable difference was in the change of the terms from communications to telecommunications. The strategy again focused on upgrading hardware, integrating systems, and providing means for secure communications. The DOD, as executive agent for implementing communications systems, created the Counter-Drug Telecommunications Integration Office within the Defense Communications Agency to serve as the focal point for all telecommunications activities related to the enforcement of drug policy.³⁰

An Assessment

Both the president (NSDD 211, 1986) and Congress (Anti-Drug Abuse Act, 1988) unambiguously articulated official positions that illegal drugs are a threat to national security. They agreed that the political objective, elimination of demand for and supply of illegal drugs, deserved an extensive effort and merited significant expenditure of resources. The problem

was identified in global terms with an objective to co-opt worldwide support for counternarcotics initiatives. War was declared-not the conventional sense of a military shooting war (although blood most certainly was to be shed), but one of police actions, economic sanctions, information activities, social programs, and other nonmilitary means.

The enemy in this war is the drug culture-drug cartels and drug users. The drug cartels cannot be likened to the contemporary economic entities; a cartel is a flexible system of organizations involved in growing, producing, transporting, distributing, selling, and money-laundering processes. High profitability has provided them an immense resource base. The cartels are motivated by profit rather than ideology. Users of illegal drugs cut across the full spectrum of society, from the homeless to professionals to influential leaders. The group includes both casual and addicted drug abusers. Their motivations for using illegal drugs are equally diverse.

Just as the war against illegal drugs is not fought against a conventional enemy, it should not be considered an ideological conflict. It is unlike most other political wars including the War on Poverty waged by the Great Society during the 1960s. Because the drug problem transcends many cultural boundaries, care must be taken to consider relevant issues such as social, health, safety, and economic factors, and to avoid morality issues. In seeking international cooperation, the perception of selling American values to other countries must be avoided. Actions and propaganda should be controlled, so as to preclude being tagged "Yankee imperialism" or "American hegemony."

The closest parallel we have to this war is the battle against alcohol that took place during prohibition-a war that was lost but that certainly compromised national objectives. Proponents of legalization can be expected to argue the logic of prohibition repeal in their efforts to sway the public to support such measures. The reasons for prohibition's failure must be understood if history is not destined to repeat itself. Care must also be taken in arguing against legalization to avoid the pitfalls of incomplete truths and invalid logic that cannot stand the tests of intense scrutiny or time.

The Anti-Drug Abuse Act of 1988, in declaring that national policy was to make a drug-free America by 1995, reflected election-year rhetoric. Remarkably, the political process that created this legislation didn't prevent the promulgation of a generally comprehensive³¹ and reasonably good product-but it did serve to dilute some of the potential it carried. While putting together a product calculated to appeal to the American public, members of Congress ensured that their power would not be diminished.³² Appropriately, the legislation directed attacks against both supply and demand of illegal drugs.³³ It also stressed both counterforce and countervalue strategies. With respect to one strategy that has been suggested by some-the legalization of certain drug offenses-Congress refused to compromise.³⁴ On the positive side, the single-point manager established a mechanism for coordinating efforts and resolving disputes. The requirement that leaders of the ONDCP not hold any other public office kept the president from appointing part-time people.³⁵ On the negative side, the political nature of the legislation tied the effectiveness of the program to (1) its position on the president's agenda and (2) its proximity to election day.

Supply-side measures receive the attention of Congress, but the trafficking of illegal narcotics isn't their exclusive target. Prevention and treatment programs for this legislation demand side attention. Certification requirements focus on governments of countries in which drugs are produced and through which they transit. Measures to break up money-laundering schemes put pressure on a shadowy support structure that helps the cartels to reap the huge profits of their trade. Opposition to decriminalizing illegal drugs, while supportive of the national policy stated by Congress, will eventually generate the requirement to produce facts from research to support this stance.

The most notable shortcoming of the legislation is the comparatively little formal authority given the director's position, particularly in the light of its extensive responsibilities. The director has few immediately assigned resources and only limited fiscal control. While Congress is expected to keep its control over the purse, authorizing the director to manage the

distribution of confiscated assets/ resources would provide the position with a significant carrot for resolving turf battles.

Most of the combatants in the drug war are assigned to the numerous supporting departments, agencies, and bureaus. With no formal control over them, the director must resort to convincing, persuading, or otherwise getting these supporting elements to do the work according to plans. Resolution of problems and conflicts tends to be a matter of Capitol Hill politics,³⁶ a personality-dependent requirement ideally suited to a person with good diplomatic skills. Disagreements of consequence must be resolved by the president or significant others in the Washington community. Further, few would argue that the director's position holds stature equal to such leaders as the secretary of state, secretary of defense, attorney general, or national security advisor. Not a formal member of the cabinet or the NSC, the director sits in only when the topic of illegal drugs is on the agenda.

Articulating the national policy for demand-side measures, Bennett's September 1989 *National Drug Control Strategy* changed Congress's declaration from unrealistic (drug-free America by 1995) to inconsequential (reduce overall level of drug use). Only one of the strategy's two- and 10-year goals³⁷ serves to measure the ultimate objective of the national policy statement for supply reduction to destroy the illegal market for drugs. The objectives and strategies formulated by the ONDCP represent a significant step forward from the Just-Say-No! domestic policy and interdiction instruments of the Reagan administration. Recognizing the complexity of the problem, the strategy addresses supply and demand, domestic and foreign arenas, law enforcement and prevention and treatment programs, counterforce and countervalue measures, and casual use and addiction. Quantified objectives are provided to measure some effects of the program. The two- and 10-year goals appear to be realistically achievable, even possibly unambitious. (Figures show a steadily diminishing demand for illegal drugs.) Bennett's uncompromising position on decriminalization is based on emotional grounds. Research needs to be directed to prove the validity of this position; that the effects of the drugs themselves, rather than their criminal status,

have accelerated and amplified social, economic, health, and safety decay.

The strategy outlined in the reports by ONDCP has many strong points. It states that one strategy alone will not win the war. Efforts to reduce the demand cannot be expected to work without measures against supply production and vice versa. The high profitability of drug trafficking will lead to aggressive marketing efforts by the cartels to counteract gains of demand-side programs. Interdiction efforts may thwart transportation networks and make smugglers think twice before trafficking the products, but cartels will fight these measures by cultivating new markets, developing new transportation strategies and transit routes for their products, and increasing rewards to their couriers. By the same token, supply-side measures alone can be unsuccessful. As long as drugs are available to tempt people, a portion of the population will use them. Treatment programs are extremely costly and none has escaped problems with recidivism. Incarceration is likewise costly and has hardly proved effective when not supported by other measures.

Research and development (R&D), essentially an investment process, is the primary way this nation will come up with different and improved ways to fight illegal drug use. It serves as the tool for innovating new ideas and technologies. The commitment to R&D acknowledges the long-term nature of the war against drugs. One of the foremost obstacles the ONDCP faces is a dearth of accurate, up-to-date information concerning illegal drug use. Previous surveys were conducted too infrequently and were of limited or irrelevant scope. They lacked sufficient scientific rigor to be reliable measures. This was one of the primary factors for understated program goals of the initial strategy published in September 1989. Funding for databases will enable them to be expanded and updated more frequently, increasing both the reliability and utility of the information gathered. Some R&D projects are being designed to improve the effectiveness of prevention and treatment programs by helping to reduce the demand side of the equation. Other programs are being advanced to improve technology for detecting drugs and for systems to compile, communicate, and coordinate information to help supply-reduction efforts.

Recognition of the need for international consensus is an important element of the program. Not only are bilateral agreements needed with drug production and transit countries to help them fight their internal enemies, but worldwide cooperation is also an instrumental part of finding a solution to this global crisis. Crop eradication projects will still take place, but the program has been deemphasized because of some counterproductive effects. (As drug-producing plants constitute the primary cash crop in many Andean Ridge countries, many farmers side with revolutionary factions, creating additional problems for their governments.)

Another key element to the strategy is the importance given to information, education, and publicity programs (essentially, programs of advocacy under politically palatable titles) on both domestic and foreign fronts. The success of information strategies relies on communicating in understandable terms the consequences of illegal drug activity. Some initiatives are designed to persuade nonusers not to start, users to seek treatment, and traffickers to cease their activities. Because international understanding and backing are imperative to the ultimate success of this program, other initiatives seek support from the world community for our national objectives.

The formation of coordinating committees is another program strength that promotes the sharing of ideas, resources, and information.³⁸ These committees establish mechanisms to prevent one agency from unwittingly doing something that conflicts with other efforts. This initiative improves cost-effectiveness and prevents potential fratricide. A notably missing committee is one to coordinate publicity, information, education, diplomacy, and persuasion activities of federal, state, and local agencies.

The strategy is not without its share of weaknesses. Because it is a long-range program, it will test the national patience of people who are accustomed to instant gratification. This constituency in turn will challenge the resolve of politicians whose primary concern is their own reelection. These same policy architects, if they don't perceive the threats-the threat drugs pose, and threats to reelection-as imminent, will most likely prove unwilling to commit sufficient assets over the long run to achieve success.

While expenditures have increased dramatically, the total program budget compared to low-end estimates of profits made by drug traffickers gives the impression that the administration is still trying to win votes rather than the drug war. This is particularly true because funding is dedicated to supply-reduction measures. Less than one-fifth of antidrug funding goes to prevention and treatment programs. Funding for prevention and treatment, as well as alternative programs, gets the short end of the stick when compared to the amount given to the interception of smuggled goods.

The strategy for providing support to state- and local-level government programs relies on the provision of matching funds by the lower levels to qualify for the federal money. This reliance depends not only on the availability of funds for these purposes but also on political popularity. To attract popular support to raise the taxes needed to fund these programs, results will have to be visible with high payoffs.

The inclusion of measurable objectives is laudable, but the selected objectives-with the noted exception of drug availability reduction-tend to measure only the demand side of the program. While this helps to dissuade "body-count" tactics, these objectives fail to measure the effectiveness of component strategies and programs.

The national policy of interrupting cartels as a departure point to their eventual dismantling and destruction implies a short-term goal of harassment. It serves to challenge cartels to produce new ways to circumvent measures. The absolute nature of the national policy-ultimately to destroy the illegal market for drugs-represents the objective of annihilation. If this is not wishful thinking but the true goal, then half-hearted measures will fail in the long run.

Bringing the military into the counternarcotics strategy was an expedient decision for the political leadership, but one the military leadership looked upon with skepticism. The political side saw it as a way of putting defense dollars to a tangible use. Political reasoning generally followed this theme: while ships and planes are out on training missions, they can be on the lookout for drug smugglers. The military establishment saw itself being dragged into a war with no measurable objectives; a war that could not be won. Through appropria-

tions bills, Congress provided funds to fight the drug problem, thus easing military apprehensions about taking the costs out of the operating budget. Defining the Defense Department's fiscal authority for 1990, Congress dedicated \$450 million to counterdrug activities.³⁹ This funding included \$28 million for R&D projects and \$40 million for catchall expenses defined as additional support to the Office for Drug Control Policy.^{40, 41} The bulk of the spending authority, \$182 million,⁴² was to support interdiction in its lead role of detecting and monitoring aerial and maritime smuggling activities. While the added fiscal authority generated interest, the lack of significant measures of effectiveness make military counternarcotics activities a, readily available political and media target. Coupled with operating restrictions, in spite of the loosening of the *posse comitatus* statute, DOD resources offer more potential than support. Its role as lead agency in the C 3 arena should easily show more cost-effectiveness than interdiction responsibilities when networks are completed and figures come in.

If national objectives in the war against illegal drugs are met, the achievement will ultimately be a psychological one. Activities must be carried out on both domestic and foreign fronts. They must target both supply and demand cultures, support counterforce and countervalue measures, and address prevention and treatment. National resolve must be communicated in clear and concise terms. Persuasion will require both action and propaganda.⁴³

For political reasons and other expediencies, these messages will have to be carried to their audiences by many different agencies. The 1990 strategy announced campaigns to provide information to foreign audiences. In the Anti-Drug Abuse Act of 1988, Congress established the requirement for the Office of National Drug Control Policy to activate a program to publicize the penalties for violating the legislation.⁴⁴ Agency turf battles during World War II and the American cultural distrust of the psychological instrument led to prohibitions against the USIA's communicating directly to a domestic target audience. Similarly, the *posse comitatus* statute and other restrictive measures prevent US military resources from conducting ac-

tivities intended to influence US citizens. Domestic programs, therefore, must be carried out by other agencies.

In the foreign arena, the psychological dimension must be exploited by all agencies involved in activities. Actions must be reinforced by publicity campaigns to ensure that maximum benefits are reaped. Successes must be underscored and punctuated, letting others know that alternatives exist and that consequences are in store for unacceptable behavior.

Co-opting the support of nongovernment special interest groups is another potential role for the psychological instrument. Informing the public of the harm illegal drugs do to the environment, the economy, the health, and ultimately the strength of a nation could serve to coalesce and polarize "watchdog" groups, directing outrage and magnifying public opinion against cartels and their support structures. For instance, environmental groups such as Greenpeace might find that the rape of the Andean Ridge ecosystem is a target for one of their campaigns. The focus of attention by television programs such as "60 Minutes" on chemical companies that exercise irresponsible management of precursor materials might cause them to rethink their motives for profit and to tighten control mechanisms.

The top echelon of the cartel structure is not invulnerable to psychological inducements. For all their wealth, they are virtual prisoners, unable to attain status or to travel any appreciable distance from their fortified homesteads. Psychological initiatives can highlight and amplify the social isolation these people face. Rivalries between cartels can be exploited, as can rivalries between ideology-motivated revolutionary movements and the greed-motivated cartels.

The across-the-board rejection of any form of decriminalization places an even greater demand on the psychological dimension. Diplomacy has been described as a process of political compromise between nations.⁴⁵ Because the drug culture has no national identity and because compromise has been determined unacceptable, diplomacy would seem to be limited to securing international cooperation from nations predisposed to strong antidrug policies. The goal is to convince people not to use illegal drugs, to convince cartels that it isn't in their profit-motivated interest to traffic illegal drugs, and to

convince the world community to act together to stop the trafficking of illegal drugs. Two overriding principles should guide the psychological effort: (1) truth is the best propaganda; and (2) words must follow action.⁴⁶

To support the first principle, the government needs to intensify its R&D studies to come up with irrefutable reasons not to decriminalize drugs. These studies should compare health and safety, sociological, and economic factors upon which illegal drugs are claimed to have an impact, comparing states and nations that have and have not decriminalized drugs. This type of research should then establish a mechanism to control the impact of the criminal status of drugs. Emotional appeals will only have temporary effects on the behavior of their target audiences. A comprehensive interagency campaign using facts should be developed by a coordinating committee. Likewise, morality inferences concerning drugs must be carefully tailored to the morals of target cultures.

While it has been written that words are mightier than the sword, they must be based on substance. The principle that propaganda must follow action recognizes that the propagandist shouldn't make claims he is not willing to back up or promises he can't keep. Credibility is ideally established through performance of actions that serve as examples of what may be yet to come. This performance establishes both capability and resolve. If the government seeks to alienate cartels from their surrounding populaces by promising to reward and protect informants, it must be prepared to back up its words or suffer from challenges to its resolve.

Alternatives must be either available or provided. For instance, coca-growing campesinos cannot be expected to voluntarily stop growing a profitable cash crop without the assurance they will receive a reasonable price for harvesting something not considered illegal. Likewise, others throughout the cartel structure must see some viable way to generate an income if they are to be induced to get out of the drug-trafficking business.

Where then does the US military PSYOP community fit into the equation? First and foremost by ensuring that the actions of DOD (maritime and aerial interdiction and detection; monitoring and developing C3 networks) are favorably

communicated to the world community. This supports the premise of following actions with words-making would-be smugglers aware of the diminished likelihood of their success and profit, and broadcasting the nation's resolve to stop drug trafficking. Another role is in working with foreign counterparts to help them master the use of psychological instruments against illegal drugs. For countries whose military forces are used to combat drug traffickers, US military PSYOP forces can conduct seminars on the value of psychological operations, train their contemporaries, and participate in bilateral exercises to hone skills. For those countries whose enforcement agencies are civilian, US military forces can support USIA programs of assistance.

Direct measures to communicate with foreign civilian populations, while not out of the scope of possibility, are more appropriately the responsibility of the USIA. That doesn't preclude a military PSYOP role but suggests coordination of ideas, information, and efforts. This role can be particularly important because the lead agency suffers from a significant funding lack, given its responsibility to execute the national strategy.

If the US government is to destroy the market for illegal drugs successfully, the psychological dimension will be a significant factor. Military PSYOP resources can contribute to achievement of the national objectives, but only if they are allowed to be used. To that end, institutional biases will have to be broken. Ironically, such a breaking of biases is a psychological phenomenon. This process will include overcoming Western cultural fears of manipulation, resolving interagency turf battles, motivating the military establishment to consider nonlethal weapons, and educating the members of the media. These audiences must be made to understand that psychological activities are amoral,⁴⁷ that they support national policy, and that advances in technology have made far-reaching communications faster and stronger.

Dyer states the need for a national college to educate leaders on the nature of the instrument and how it helps them to implement policy.⁴⁸ The public, he says, "must be educated on what these activities are and how they contribute to functioning of the government."⁴⁹ Within the military community, education on the psychological dimension needs to be expanded. In

addition to courses of instruction at the Air Force Special Operations School at Hurlburt Field, Florida, and the US Army John F. Kennedy Special Warfare Center and School at Fort Bragg, North Carolina, blocks of instruction should be included in service academies and in professional military education courses at all levels. The Defense Information School at Fort Benjamin Harrison, Indiana, should include psychological operations orientation in its military public affairs training curricula. Select members of the media should be invited to attend military orientation courses.

Bennett resigned from his position as director, commenting that he had accomplished what he had set out to do. Acknowledging that the war was not yet won, he offered that indicators were showing great promise.⁵⁰ His abrupt departure provided focus on a national program whose status was being subordinated by events in the Middle East. The war is still far from over, and it will not be over until the national policy is achieved or rescinded. While national policy is likely to undergo redefinition, particularly as accurate and up-to-date information enhances the nation's databases, rescission is unlikely. Changing peoples' attitudes, opinions, and behavior will be a long-term psychological process—a process to which the military PSYOP community has much to offer. The sooner political and military leaders recognize this, the sooner the problem will be resolved.

Notes

1. Betac Corporation, *Department of Defense Counterdrug Baseline Report* (21 July 1989), 2-10 through 2-11.
2. Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Princeton, N.J.: Princeton University Press, 1976), 606.
3. US Congress, *Anti-Drug Abuse Act of 1988*, Public Law 100-690, 100th Cong., 18 November 1988. Sec. 4801 states that problems caused by illegal drugs pose a threat to the national security of the United States.
4. *Ibid.*, Title I, Subtitle A, sec. 1002, 102 Stat. 4181.
5. *Ibid.*
6. *Ibid.*, Title I, Subtitle A, sec. 1003, 102 Stat. 4182-83.
7. *Ibid.*, Title I, Subtitle A, sec. 1002, 102 Stat. 4181.
8. *Ibid.*, Title IV, Subtitle I, sec. 4801, 102 Stat. 4294.
9. *Ibid.*, Title V, Subtitle A, sec. 5011, 102 Stat. 4296.
10. *Ibid.*, Title V, Subtitle F, sec. 5251, 102 Stat. 4310.

11. Ibid., Title I, Subtitle A, sec. 1003, 102 Stat. 4182.
12. Ibid., Title I, Subtitle A, sec. 1005, 102 Stat. 4185-86.
13. Public Law 100-690, Title V, Subtitle F, sec. 5251, 102 Stat. 4310.
14. Office of National Drug Control Policy, *National Drug Control Strategy* (Washington, D.C.: Government Printing Office, 1989), 9.
15. Ibid., 8.
16. Ibid., 1-4.
17. Ibid., 9.
18. Ibid., 43-44, 84-90, and 131-36.
19. Ibid., 93-97.
20. Office of National Drug Control Policy, *National Drug Control Strategy* (Washington, D.C.: Government Printing Office, 1990), 1 (hereafter cited as ONDCP 1990 Strategy).
21. Ibid., 1-9.
22. Ibid., 12-85.
23. Ibid., 12-27.
24. Ibid., 51.
25. Ibid., 59.
26. Ibid.
27. Ibid., 74-81.
28. Ibid., 82-85.
29. Ibid., 107-16.
30. Ibid., 123-28.
31. One hundred eighty-seven pages detailing everything from American Indian cultural exceptions to penalties for the use of firearms in conjunction with a criminal drug offense.
32. Congressional oversight committees provided the director power to influence but not control their agencies' activities.
33. Public Law 100-690, Title V, Subtitle F, sec. 5251, 102 Stat. 4309.
34. Ibid., Title V, Subtitle A, sec. 5011, 102 Stat. 4296; and Title VI, Subtitle F, sec. 6201, 102 Stat. 4359.
35. Probably most noteworthy, the vice president, the office that ran this program under the Reagan administration, is excluded.
36. Capitol Hill gamesmanship is well covered by Morton Halperin's *Bureaucratic Politics and Foreign Policy* (Washington, D.C.: Brookings Institution, 1974).
37. ONDCP 1990 *Strategy*, respective 10 and 50 percent reductions in drug availability, 120.
38. ONDCP 1990 *Strategy*, 107-16.
39. Defense Authorization Act for 1990-1991, 103 Stat. 1562, Public Law 101-89, 29 November 1989, Title XII; and Public Law 101-65, 21 November 1989, Title VII; Stat. 1128.
40. Ibid., [sec. 1205](#).
41. Ibid., sec. 1202.
42. Ibid., sec. 1204.

43. Murray Dyer, *The Weapon on the Wall* (1959; reprint, New York: Arno Press, 1979), 35-37. Mr Dyer's fifth premise, words are rooted in action. Action demonstrates capability and resolve; propaganda communicates and intensifies the actions' effects.

44. Public Law 100-690, Title V, Subtitle A, sec. 5011, 102 Stat. 4296.

45. Martin Wright, *Power Politics*, ed. Hedley Ball and Carsten Holbraad (Leicester, U.K.: Leicester University Press, 1978), 27.

46. From premises outlined by Dyer in chap. 2.

47. Dyer claims they "cannot make the necessary decisions . . . only explain and interpret them," 213.

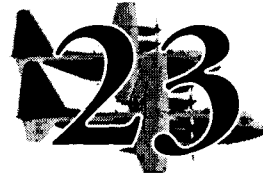
48. *Ibid.*, 187-90.

49. *Ibid.*, 199.

50. The price of cocaine had risen sharply and street supplies were down.

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Political-Psychological Dimensions of Counterinsurgency



Gen Richard G. Stilwell, USA, Retired

This paper concentrates on the psychological aspects of conflict because the psychological dimension deserves discrete treatment as the least appreciated dimension-and the least employed-by the United States and most of its allies. Conflicts erupt among groups of men, nations, or coalitions of nations from collision of aims or objectives for which the antagonists are prepared to fight and die. The conflict ends, at least temporarily, when one side makes the decision that there is more to be gained-or less to be lost by allowing the antagonist to prevail. The side that desists has simply lost the will to continue the conflict.

An adversary's will can be eroded and broken in a number of ways: by military force (the application, or threat of application, of violence); by economic strangulation; by loss of external support; by apathy; and by military defections. Normally, it takes a combination of these to bring about an adversary's calculus that the "jig is up." Sometimes, one master stroke will suffice. Hopefully, nations can resolve the issue without the application of military force. To win without fighting, in the words of Sun Tzu, is "the acme of generalship." Any political leader or military commander should accomplish the mission in the most expeditious fashion and at minimum human cost.

The term psychological warfare (psywar), for all its shortcomings, succeeds in combining two meaningful subjects, both as old as man. Certainly, it is better than psychological operations which, as my mentor Paul Linebarger once said, leaves the issue entirely neutral. Psychological warfare seeks to achieve the objective where military force is unavailable or

inappropriate, or where it can combine with the military to minimize expenditures while maximizing effects.

The Old Testament's "Book of Judges" provides one of the earliest and most effective examples of psychological warfare. Gideon-an imaginative fellow-and his troops were on the verge of being annihilated by a Midianite force of vastly superior strength. The Midianites were encamped in preparation for decisive assault on the morrow. But Gideon had an inspiration: Since the basic fighting unit of all armies in the thirteenth century B.C. was a 100-man formation, each with one trumpeter and one torch bearer, he reckoned he could create the impression of a 30,000-man force with 300 men properly equipped. Gideon selected 300 men and provided each with a lamp, a water pitcher, and a trumpet (we are not told where he found the extra trumpets!). At nightfall, he had the 300 light their lamps (which were placed inside the pitchers so as to hide their light) and deploy at designated intervals around the Midianite camp. On his signal, they all broke their pitchers, lighting up the perimeter, and blew madly on their trumpets. The Midianites were startled out of their sleep and their wits. They fought among themselves, then gave up and retreated. (The Hebrew chronicler gives credit for this to the Lord!)

Gideon's deception is not an isolated example, as any serious student of ancient military history can confirm. Psychological warfare seeks to persuade by nonviolent means. By its very nature, psychological warfare is open-ended; it defies an accurate all-encompassing definition. The best descriptor-although by no means all-inclusive-is propaganda, which unfortunately, has severe political handicaps on the American domestic scene. It ought not be in such disrepute; after all, it derives from the name of that department of the Vatican Curia which had the duty of propagating the faith. Propaganda is simply the *planned* use of any form of communication designed to affect the minds, emotions, and actions of a given group for a specific purpose. This is precisely the aim of what we see on the television screen at all-too-frequent intervals-a field of endeavor in which the United States is preeminent.

So, psychological warfare is really not all that esoteric or mysterious. Whether in support of the national security or for

the profit of shareholders, the effectiveness of propaganda depends on adherence to four basic ground rules: a clear-cut aim or purpose, a well-defined target audience, a credible message, and a reliable means of communication or dissemination. Gideon met these criteria in spades. His aim was to demonstrate that he had been greatly reinforced; his target audience was the immediately opposing army; the established rules of counting made his message credible; and the light and noise ensured that the message was received. To be sure, it is rarely that easy; or as quickly mounted; or as clearly measurable.

The American View of Psychological Warfare

The psychological weapon has never been accepted as a permanent instrument of national security policy by the executive branch, the Congress, or the American people. Its use, under various names, has been supported as an essential expedient only in periods recognized as war. To be sure, in the early days of the cold war, there was considerable enthusiasm for institutionalizing a national structure and capability to exploit international communications as a psychological tool in furtherance of national policy.

The concept was never implemented, due in part to substantial differences within the executive branch about the value and propriety of this genre of activities. These differences precluded the enunciation of an integrating doctrine and the necessary coordination of departmental programs. In greater part, however, the failure to implement was due to the American character, which is at once idealistic and pragmatic, distrustful of political intrigue, and impatient for quick solutions. These traits are reinforced by the rather simplistic and innocent view of the world that most Americans have.

For these reasons, instances of US attitudinal readiness-and US capabilities-to engage in psychological warfare have been rare, coinciding with the two world wars. Those efforts were indeed national because the target audience conspicuously included the American public itself. But while psychological operations in the two world wars (particularly the British in World War I) provided important support, they were not

crucial to the final outcome. Those conflicts were waged militarily, with political and psychological assistance.

Wars of national liberation reverse the weighting of factors. They are fought politically and psychologically, with the assistance of military capabilities. They integrate political, psychological, social, and military aspects to exploit national vulnerabilities, erode all national institutions, and support an eventual insurgent takeover. Their choice of weapons puts a conventional high-technology force at a disadvantage. The psychological challenge is explicit in the hallmarks of the insurgent force: its tight, inner political structure; the strong motivation of all ranks; the ability to find concealment within the civil population; and identification with one or more popular causes.

Past Experience in Counterinsurgency

The wars of national liberation that have erupted in the third world over the past four decades document the crucial role of the psychological weapon in determining the final outcome. Not all involved the United States, even indirectly; but all were replete with useful lessons for those perceptive enough to appreciate and assimilate them. In those instances where the United States was in some way engaged, its record in exploiting the psychological dimension is uneven. Two examples will serve to support this judgment.

The Philippine government campaign against the Huks in the early 1950s stands as a model of the imaginative employment of psychological warfare, strategically and tactically. The charismatic and insightful Secretary of National Defense, Ramon Magsaysay (who was later to become president), and a small cadre of exceptionally gifted US advisors, achieved spectacular success in arresting the momentum of the insurgency and then breaking its back with a wide-ranging series of programs which integrated military, political, and psychological actions. Most of the ideas and initiatives were conceived by the advisors, but-and this is important-the detailed planning, the message content, and the operational execution were all Filipino.

Magsaysay knew instinctively that the key to defeating the guerrillas was to deprive them of support within the rural population and to swing that support to the government. He also recognized that the soldier was the most visible symbol of government in the countryside and that the government would be judged by the actions of its soldiers.

As a first order of business, therefore, Magsaysay set about reindoctrinating the entire Philippine army. Its multiple roles were protector of the people, guerrilla fighter, and contributor to the morale and welfare of the civil population. He made this indoctrination meaningful by promoting only those who were demonstrably effective ambassadors of good will and were also effective combat soldiers. He provided rations for the troops that were adequate not only for their own consumption, but also for donations to villagers in dire need, and he made extensive use of medical and engineer personnel for civic actions of the most basic sort. Finally, Magsaysay established a "hotline" to his immediate office for complaints about troop malperformance and a staff to immediately investigate those complaints in the field, convincing one and all that he was serious about making the army a credible symbol of good and caring government.

Every effort was made to publicize, nationwide, the new order in the army and what was being accomplished thereby. To accomplish this, Magsaysay used press releases, unit newspapers for troop consumption (and for subsequent distribution to local civilians), movies of operations and civic actions (for showing in remote areas by civil affairs officers), and traveling road shows. Programs to win the support of civilians were complemented by others directed at the insurgents themselves.

One such program provided surrenderees (and even those who had been captured) the wherewithal to start life anew for self and family: substantial acreage in a resettlement area and a loan of building materials, tools, food, and seed. This program stimulated many surrenders, but its indirect effect was even greater. Much of the population had supported the guerrillas because their avowed motive was to gain "land for the landless." When it became apparent that the objective

could be achieved without fighting, the moral obligation to support the guerrillas disappeared.

A second program involved liberal rewards for the death or capture of Huk leaders who were brought in or killed by their own comrades. The principal values of this program lay in widening the gulf between civilians and guerrillas, and in heightening hostilities within the guerrilla ranks. Accompanying these major programs were more specifically targeted initiatives: appeals from mothers to their guerrilla sons; rumors to destroy the credibility of those politicians who were deliberately obstructing the Magsaysay programs; widespread distribution of posters exposing Huk leaders as criminals wanted for documented murder, kidnapping, and rape; and exploitation of native superstitions.

The concomitant of steadily increasing popular support for the government-as symbolized by the army in the field-was better intelligence and more effective operations against the guerrillas. By 1953, the insurgency was no longer a menace to the national security of the Philippines.

What lessons can be drawn from the significant contribution of psychological warfare to the success of the Philippine counterinsurgency campaign? One is that Magsaysay had his priorities right. In most third world countries, the soldier in the field is the embodiment of the government. His conduct will determine the nature of the relationship between the population and the government in rural areas. The soldier must therefore be made the most useful symbol possible, demonstrating the moral justification for government. It is a nondelegable command responsibility, at all levels, to ensure this.

Another is that several factors combined to swing popular support to the government through actions of the Philippine military:

1. leadership and command emphasis (notably including careful indoctrination of the soldier);
2. a dedicated element in each headquarters to plan and supervise implementation;
3. psywar programs carefully tailored to the attitudes and needs of the groups at whom targeted; and

4. quality advisors with the professional competence, empathy, and passion for anonymity to gain and maintain access to the decision makers.

No one spent any time attempting to define boundaries of, or responsibilities for, conduct of psychological operations. It was everybody's business to support the overarching aims: develop confidence in the government and render the insurgency futile. This was achieved by the remarkable integration of concrete and useful actions, increasingly effective field combat operations, and support from information/psywar initiatives.

Vietnam was an entirely different story. There was an illuminating exchange between Col Harry Summers and a North Vietnamese officer in Hanoi during the prisoner of war exchange negotiations in 1973. Summers made the point that the American army had never been bested in battle to which the response was "Quite true, but that is totally irrelevant." The communists' political and psychological campaigns were decisive-on the international scene, within the American body politic, and in-country. The tragedy is that our failure to mobilize international and domestic support for the Nicaraguan Freedom Fighters mirrored our Vietnam experience in those key arenas.

A comprehensive and authoritative account of psychological operations in Vietnam has yet to be compiled. When accomplished, it will record some brilliant successes at the tactical level and some failures at the strategic level. The latter included an inability to cope with the impact of modern mass communications (history's first televised war); the lack of psychological/ political actions to condition audiences and establish context for major military activities as, for example, the invasion of Cambodia; inability to erase the perception that it was our war, not a South Vietnamese war; and ineffectiveness of advice and resources devoted to aid the government of South Vietnam to make its case, improve its image, and enhance its performance on and off the battlefield. Responsibility for these failures did not rest solely-or even predominantly-with Joint US Public Affairs Office (JUSPAO). It was shared with the political and military leadership in Washington and in-country, with United States Information Agency (USIA)

ambivalence about the merits of psychological warfare and its role therein, and with a military educational system that failed to inculcate in all ranks the fundamental tenets of counterinsurgency.

This evaluation in no way denigrates the dedication of the JUSPAO leadership and members. And, in all fairness, even programs of heightened impact would not have resulted in a different final outcome. Psychological warfare can enhance political, social, and military programs; but if those programs are seriously deficient, it cannot erase their faults.

The differences between the Philippine and Vietnamese experiences are dramatic.

- **In both cases, the key objective was to win the support of the population. In Vietnam, that objective was not achieved. Admittedly, the Vietnamese government faced much more difficult challenges, explicit in a more numerous, better organized, more deeply imbedded, and more highly motivated opposition.**

- **Unlike in the Philippines, psywar personnel in Vietnam did not have direct and continuing access to the top political and military leadership or to the high-level planners. A number of first-class research projects, which were developed by social scientists, political psychologists, and cultural anthropologists, constituted guidelines for effective psychological initiatives. For the most part, these projects were simply filed.**

- **The Philippines' psychological programs were indigenous in content and means of communication. In Vietnam, impatience (to which short tours contributed) stimulated the Americans to do too much themselves. Not only was this conceptually wrong, it was also operationally ineffective because most of the Americans involved had no more appreciation of the political and cultural realities of Vietnam than we did of Lebanon in 1983.**

Prospects for the Future

As the decade of the sixties ended and that of the seventies began, many observers believed that the United States would develop a comprehensive and prudent doctrine for psychological

operations. In fact, some thought, the government would have no choice but to do so. Some even thought there would be extensive research to determine the most efficient and effective methods of applying psychological techniques and weapons.

Alas, it was not to be! The United States is still without the requisite national doctrine. Worse yet, there is less acceptance of the legitimacy of psychological warfare as a tool of statecraft by the State Department and the USIA than was the case in 1970. There has been scant modification of the long-held view that the conduct of psychological operations is an exclusively military task-appropriate in war, but deplorable in peace. The recognition has not dawned that such activities are fundamental to effective counterinsurgency efforts and must be primarily conducted by non-DOD agencies.

There have been some modest advances under the current administration. In 1984, a landmark National Security Defense Directive (NSDD) established international communications as a major instrument of national security policy and assigned specific tasks to executive departments and agencies. Only one section dealt with psychological operations-and then solely in a military context. It directed the revitalization of the armed forces' capabilities to conduct such activities in support of military operations in crisis and in war. Typically, the NSDD did not establish any effective interagency mechanism for orchestrating and coordinating the various international communication capabilities.

Using the NSDD as leverage, the secretary of defense directed the preparation of a Psychological Operations Master Plan (which he subsequently approved in toto). Its purpose was to remedy the deficiencies that had developed since Vietnam-deficiencies in force structure, operational concepts, planning, research, training, intelligence support, personnel programs, and understanding the potential of psychological operations as a military force multiplier. The plan included these important actions:

1. JCS development of a comprehensive joint doctrine to cover employment to strengthen deterrence, in crisis and in war, as the foundation of the revitalization effort;

2. augmentation of planning capability on major combatant command staffs;

3. functional separation of special and psychological operations at staff and organizational levels, formally recognizing that the latter is inherent in all military activity across the spectrum of conflict;

4. reindoctrination of the officer corps through appropriate instruction within the mainstream service school systems and including psychological operations in training exercises;

5. modernization of equipment and force structure; and

6. most significant of all, the phased development of a Joint Psychological Operations Center as the font for doctrine and conceptualization, for the direction of research and analysis, for planning support of the unified and specified commanders, and for assistance to the secretary and the chairman in developing defense positions on national psychological plans and campaigns.

It will take much hard work and continued command prodding to see these initiatives through to fruition. Absent an institutionalized mechanism at the national level, the psychological dimension of contingency planning is handled on an ad hoc, fragmented basis. DOD has repeatedly urged the establishment of a national psychological operations committee, which would, inter alia, do detailed planning for the marshaling and orchestration of all government and quasi-government communication capabilities in support of military contingency plans or external crises short of direct military involvement.

It is understood that the concept of the committee has been approved in principle, but has not been activated due to the strong reservations of the USIA. Conceivably, the congressionally mandated Board for Low-Intensity Conflict at National Security Council (NSC) level will provide impetus for the interagency psychological operations structure as an essential adjunct for sound planning.

Meanwhile, one Army unit (the 4th PSYOP Group) strives valiantly to plug the national gap. It has produced excellent how-to-do-it plans for focusing all relevant national capabilities in support of several countries under threat. The professionalism

of the group is gaining recognition in key sections of the national security community. Both the group's planners and its colleagues on the ground can take much credit for the improvements that were wrought in the Salvadoran army.

Clearly, we are ill-prepared for the psychological dimension of the next major counterinsurgency that will engage the United States. The guidelines for enhancing performance are the major lessons gleaned from our past experience.

The first guideline--a truism meriting underscoring--is that the message communicated must be indigenous in content and in execution, leastwise within the confines of the supported country. The United States will have major tasks in ensuring political support for a beleaguered country on the international scene and here at home. In-country, the burden will fall on the shoulders of a few carefully chosen and highly qualified individuals who will operate in an advisory role, either formally or informally. The proportions of civilian and military advisors must be aligned to the structure of the host government; and while under the general supervision of the chiefs of the US Diplomatic Missions, they must work with and for their foreign colleagues.

Collectively, the US advisors must have a profound knowledge of the country--its culture, its customs, its political and social substructures, and the characteristics of its population. To ensure that depth of confidence, the group must be reinforced by--or be able to draw on the support of--the expertise of sociologists, clinical psychologists, and cultural anthropologists. They must, of course, be equally well informed about all aspects of the insurgency, its operating methodologies, its motivations, and its vulnerabilities. The challenge--a cross-cultural one--to those advisors will be to help the supported government shape and articulate value-based themes to which the population can relate. They must then ensure that all actions of the government and its personnel are consistent with--and reinforce--those themes.

A second, closely related guideline is to eliminate the mind-set that the practice of psychological warfare is the province of odd fellows steeped in the occult. To be sure, there are pressing requirements for full-time specialists and dedicated (albeit all-purpose) equipment. But these requirements deal

with only a portion of the psychological dimension in counter-insurgency: the detailed target research and analysis within both the native population and the insurgent structure; analysis of, and counters to, insurgent propaganda; and the offensive against the insurgents to confuse, confound, exacerbate vulnerabilities, and induce defections.

That sector aside, psychological operations (how badly we need other terminology) do not have a separate compartment. They may at times be a part of public affairs, civic action, troop information, civil affairs, public diplomacy, humanitarian aid, or political action. As exemplified by the campaign against the Huks in the 1950s, everyone can and should aid in the psychological enhancement of all programs to gain and maintain the allegiance and support of the target audience: the population itself. The sine qua non for attainment of that objective are concrete programs that are sound in design, sound in content, and professionally implemented.

The complementary-usually crucial-task is to multiply the impact of those programs and underscore the relevance of those programs to national aspirations. Completion of this task will require unceasing exploitation of every medium of communication, from ensuring the proper deportment of soldiers in face-to-face contact with villagers to sending traveling shows throughout the countryside to presenting sophisticated TV programs.

Conclusion

My advocacy of the extraordinary importance of the psychological dimension at any level of conflict notwithstanding, I am not sanguine about our government's capacity to exploit this nonintrinsic instrument of national power (or, indeed, even to comprehend its potential for enhancing national security).

Most worrisome is the failure to recognize-let alone take measures to counter-psychological and political warfare waged against our policies with the intent to undermine them; here, the cost of inaction is real and heavy. The stark fact is that the American public, the media, and even the bureaucracy, are generally oblivious to the scope and sophistication of this genre.

South Africa commanded center stage in Western consciousness because there was a spectacularly successful (and still ongoing) psychological warfare campaign. It was carefully orchestrated, replete with misinformation, and aided and abetted by our own gullible media. The Sandinista regime in Nicaragua had similar success. Thanks almost exclusively to the efficacy of its propaganda, there was more active support among the American public for the Sandinista regime than for the freedom fighters that our own government backed. Awareness that the integrity of our own political and decision-making base is under threat should lead to actions that would expose and neutralize our adversaries' efforts. Hopefully, such awareness will stimulate utilization of psychological and political warfare initiatives to further the positive goals of American foreign policy.

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The Psychological Dimension of the Military Element of National Power



Maj James V. Keifer, USAF, Retired

War does not belong in the realm of arts and sciences; rather it is part of man's social existence.... Politics, moreover, is the womb in which war develops.

If war is part of policy, policy will determine its character. As policy becomes more ambitious and vigorous, so will war.

-Carl von Clausewitz

The six-month Persian Gulf War, popularly called the One-Hundred-Hour War, recently took us through the continuum of the policy process. Economic sanctions were applied by a world community united with a degree of resolve seldom seen; but because these actions take time, and time favored Saddam Hussein, they were never given the opportunity to prove their effectiveness. Through diplomacy, essentially a government-to-government process of negotiation and compromise, the political leaders of the world tried to defuse the situation. Because both sides held nonnegotiable positions, with no room for compromise, the prospects for a diplomatic solution were nonexistent. Diplomacy did, however, play an instrumental role in uniting coalition forces. Was a peaceful resolution out of the picture? It evidently was!

While the political and economic elements of national power played out their hands, two others came to the forefront. These were the military and the psychological elements. These two elements, working together, seemed to constitute our best opportunity for a peaceful resolution; and after failing to achieve a peaceful solution, these two elements worked together to enable us to win, win quickly, and win with the least possible bloodshed and destruction.

How could the military instrument offer a peaceful solution? By itself, not at all. However, with the psychological element ... ?

At the turn of the century, under Theodore Roosevelt's motto, Walk Softly and Carry a Big Stick, the United States practiced a policy called gunboat diplomacy. We built a reputation for "sending in the Marines" to achieve our national objectives. After a while, all we had to do was steam a ship to the coast; through intimidation, we achieved our objective.

Turning now to the recent Gulf conflict, we hoped to persuade Saddam Hussein to unconditionally withdraw from Kuwait through our military buildup in the Middle East. We felt that our recent excursions to Libya, Grenada, and Panama would certainly have impressed upon Saddam that we had the ability and resolve to settle the score militarily. And part of the psychological factor was Saddam's knowledge that his forces were equipped with hardware that was no match for our high-tech weapon systems. Another psychological factor was that, while Saddam didn't mind sending tens of thousands of Iraqis to martyrdom, he had no intention of becoming a martyr himself. The world community isolated Saddam and communicated unity on the issue through strategic psychological operations. Through theater PSYOP, we tried to convince him that it wasn't worth the cost to fight for a losing cause. Unfortunately, Saddam wasn't convinced; and neither were the Tikritis who supported him.

The psychological dimension played an important role in limiting the loss of lives and property. On the field of battle, we wanted to face an enemy who was unsure about his cause and capabilities but sure about his impending doom; an enemy who, even if unwilling to surrender, had little will to engage in combat. Through tactical PSYOP, we hoped to convey to the Iraqi military the futility of their position; we succeeded.

In the Middle East, the Andean Ridge, the Philippines, and throughout the world, the psychological dimension plays an important role in the achievement of national objectives. It serves the same purpose, and can be likened to, the aggressive marketing campaigns of Madison Avenue; that is, to affect the behavior of a target audience. Where Madison Avenue sells products and services, psychological operations sell ideas and ideology.

It's safe to say that all governments throughout the world make use of psychological tools during peacetime as well as during war. Activities are organized at two levels: international (we call these publicity, public diplomacy, and psychological operations) and in-country (we call these publicity, public relations, and public affairs).¹

The use of any and every element of national power carries with it psychological effects.² To this end Murray Dyer wrote, "the highest levels of government now recognize that in any decision on national policy there are psychological factors that must be taken into account."³ He cited the psychological dimension's cutting across departmental boundaries as the reason for an ongoing turf battle between the Department of Defense and the Department of State for control of the psychological instrument.⁴

The term *national power* describes the ability of a nation to influence other nations.⁵ Deterrence, a fundamental national security objective of the United States for years, is essentially a psychological phenomenon.⁶ Potential enemies perceive the cost of attack to be far greater than any possible gains. The assessment is based on the perception of this country's capabilities and resolve. Military psychological operations reinforce this perception by clarifying and repeating it. Edward N. Luttwak says it is an important message-one that must be communicated across the range of social and economic classes.⁷

Ronald D. McLaurin, author of *Military Propaganda: Psychological Warfare and Operations*, says that the reason for much of America's diplomacy and policy, both actions and words, is specifically to influence the behavior of other governments.⁸ Martin Wright distinguishes diplomacy from propaganda:

Diplomacy is the attempt to adjust conflicting interests by negotiation and compromise: propaganda is the attempt to sway the opinion that underlies and sustains the interests. Conversion therefore undercuts the task of compromise.⁹

How does the military element of national power support the psychological dimension? One fundamental foreign policy objective is to concentrate and optimize power. Other things equal, a nation that can back up its policies with coercive force holds a distinct advantage over less-capable nations. The

projection of power is a central concept of international relations. Luttwak states that power, the influence of one state over others, may be measured in terms of the perception of the audience. To be effective (powerful), perceptions are precisely what foreign policy must affect.¹⁰ The projection of US military power is often used as a force of political persuasion.¹¹ Such activities as port visits, bilateral exercises, firepower demonstrations, and special deployments help project power, as does the high-technology aura of US military hardware. Propaganda can be used effectively to reinforce and intensify these measures, but it must be carefully crafted to prevent counter-productive perceptions.

How, then, do psychological operations support strategic military objectives? The ability of nations to gather information, and to assess and interpret its relevance, isn't equal; what is perceived can be quite disparate from reality. With effects multiplied by differences in culture, experience, and expertise, the gap between perception and reality-misinterpretations-can lead to the misunderstanding of intentions, problems in resolving differences, and other dangerous situations.¹² Psychological operations bridge the gap.

If psychological operations are so important, why do they carry the stigma that seems to be attached? In the foreword to *Political Warfare and Psychological Operations: Rethinking the U.S. Approach*, Bradley C. Hosmer, president of the National Defense University, observed that "the negative connotations in the West of the word propaganda suggest we have treated political war as incompatible with democratic values and traditions." Frank R. Barnett, in the afterword to the same book, expressed also that "some would argue that the ethics of democracy preclude too strenuous a concern with propaganda." These statements unmasked American cultural bias toward the terms *propaganda* and *psychological operations*. Dr Carries Lord, in "The Psychological Dimension in National Strategy," also noted this phenomenon:

Manifest or latent in the attitudes of many Americans toward the practice of psychological-political warfare is a distaste for any sort of psychological manipulation or deception. The idea that psychological-political warfare is a black art that can be morally justified only under the most extreme circumstances is a derivative of

such attitudes. That such activities necessarily involve misrepresentation or deception is in any case far from the truth. But even assuming that some such element is inseparable from effective psychological-political operations, the moral calculus is by no means as clear as is frequently made out.¹³

The American attitude toward fair play reflects a disaffection for the use of any psychological manipulation. Gen Robert C. Kingston, commenting on "Political Strategies for Revolutionary War," by Richard H. Shultz, Jr., attributes this apprehension to past abuses of psychological tools by totalitarian regimes: "Many people in this country think that psychological operations equate to the Big Lie, suggestive of Goebbels and Hitler, and that we should not use it." ¹⁴ The late Gen Richard G. Stilwell, USA, Retired, provided comments on the institutional reluctance to consciously resort to perception for influencing activities. "The psychological weapon (and the political premises which govern its employment) have never been accepted as a permanent instrument of national security policy by the Executive Branch, the Congress, or the American people." ¹⁵ Cultural will, readiness, and the ability to conduct psychological operations have tended to surface only during wars. Ironically, it has been during wartime that the American public has become a primary target audience for national nonmilitary psychological operations.

Dr Lord credits the American media with helping to intensify cultural biases of the public through implications that underhanded objectives or purposes constitute the basis for such activities. He notes that claims of disinformation or public lies are often attached to media comments on psychological activities.

Dr Lord writes that the employment of psychological tools is further hampered by systemic weaknesses of the bureaucracy. From the top, he says, inadequate strategic planning and decision making prevent PSYOP from being considered, much less employed. The US diplomatic, military, and intelligence establishments distrust and resist any use of political-psychological warfare. Dr Lord charges that the State Department hasn't changed its diplomatic techniques in 200 years, ignoring the shrinking of the world brought about by dramatic advances in communications technology.¹⁶

The Department of Defense doesn't escape Dr Lord's criticism of institutional bias; he contends that, for reasons that are both similar to and different from those of State, military leaders have likewise tended to overlook the value of the psychological dimension, particularly outside tactical applications:

The military services, in their preoccupation with technology, major weapon systems, and the big war, tend to neglect low-cost approaches to enhancing operational effectiveness, especially at the lower end of the conflict spectrum; and they tend to regard political-psychological warfare as someone else's business. ¹⁷

Even the PSYOP community itself has struggled with its name for years, proposing such terms as *perception management*, *public diplomacy*, *political communication*, *influence operations*, and *international information*. In his article "By Any Other Name" in *Perspectives* (the magazine of the Psychological Operations Association), Col Thomas Taylor offered the title "Perception and Deception," suggesting the acronym, P&D.I ⁸ Lt Gen Michael Carnes, director of the Joint Staff, urged a name change in his address to the Psychological Operations Association at the 1989 Worldwide Psychological Operations Conference, commenting that "you can't call soap 'dirt' and expect it to sell."

This struggle for a new name begs a couple of questions. General Carnes's "soap/dirt" analogy is faulty. First, the term *psychological operations* is amoral and the community is not responsible for bias against it. It would be more to the point that people think of "earth" or "topsoil" in terms of *dirt*, *filth*, or *grime*. And second, terms considered more acceptable-*politically* and *popularly* fail to aptly describe the activity. A soldier in the battlefield making loudspeaker appeals to the enemy is not performing "political communications" or "international information."

Personally, I don't find the terms *psychological operations* or *propaganda* objectionable. What is needed is to market these words so that their pejorative connotations die out. Psychological operations help to save lives by using words, instead of bombs and bullets, to deter, or in the failure of deterrence, help win wars. In *The Weapon on the Wall*, Murray Dyer opines that the profession "is an honorable and important means, ranking with instruments of diplomacy, the military art, and

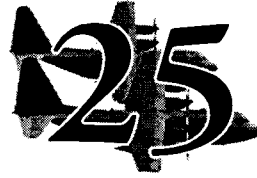
economic measures."19 One of his premises states that this discipline is a reflection of free will, a factor of public opinion. He's quick to point out, however, that this premise does not apply in a totalitarian state. Dyer says the way to overcome the institutionalized bias is through education. I agree: Education, coupled with advocacy, is the answer. The challenge is to encourage others to become disciples, too.

Notes

1. Ronald D. McLaurin, ed., "Organization and Personnel," in *Military Propaganda: Psychological Warfare and Operations* (New York: Praeger Publishers, 1982), 55.
2. Field Manual 33-5, *Psychological Operations* (Washington, D.C.: Government Printing Office, 1962), 78.
3. Murray Dyer, *The Weapon on the Wall* (1959; reprint, New York: Arno Press, 1979), 231.
4. Ibid., 69-73.
5. Martin Wright proposes that nations came into being with the decline of medieval Christendom when man's loyalty shifted to the state (king) and away from the estate (baron) and church (pope). He states the word *nation* came into being at the end of the French Revolution. A nationality was a collective people with a consciousness of historic identity expressed in a distinct language. Martin Wright, *Power Politics*, ed. Hedley Ball and Carsten Holbraad (Leicester, U.K.: Leicester University Press, 1978), 27.
6. Fred W. Walker, "Truth Is the Best Propaganda," *National Guard Magazine*, October 1987, 28.
7. Edward N. Luttwak, "Perceptions," in Ronald D. McLaurin, ed., *Military Propaganda*, 267.
8. Ronald D. McLaurin, ed., "Psychological Operations and National Security," in *Military Propaganda*, 2-3.
9. Wright, 89.
10. Luttwak, "Perceptions and the Political Utility of Armed Forces," in Ronald D. McLaurin, ed., *Military Propaganda*, 275.
11. Refer back to opening comments on gunboat diplomacy.
12. Luttwak, 267-68.
13. Dr Carnes Lord, "The Psychological Dimension in National Strategy," in Carnes Lord and Frank R. Barnett, ed., *Political Warfare and Psychological Operations: Rethinking the U.S. Approach* (Washington, D.C.: National Defense University Press, 1988), 22-23.
14. Robert C. Kingston, "Comments," in Carnes Lord and Frank R. Barnett, ed., *Political Warfare and Psychological Operations: Rethinking the U.S. Approach* (Washington, D.C.: National Defense University Press, 1988), 142.

15. The late Gen Richard G. Stilwell, USA, Retired, "Political/Psychological Dimensions of Counter-Insurgency," an essay of this publication.
16. Lord, 23-28.
17. Ibid., 27.
18. Thomas H. Taylor, "By Any Other Name," *Perspectives* 5 (Spring 1989): 9.
19. Dyer, 194.

PSYOP in Desert Shield/ Desert Storm



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Understanding the role of psychological operations in the Gulf War requires more than a glimpse of its contributions to military conflicts. To understand PSYOP, we must place it within the context of the times; specifically, in the sequence of events that led to Operations *Desert Shield* and *Desert Storm*.

When Saddam Hussein began to build his military strength along the Kuwaiti border, the United Nations (UN) began to react. Through a series of 13 resolutions, the UN demanded that Iraq end its aggression and pull out of Kuwait. Embargoes were established and ultimatums were delivered. Member states, including the US, Egypt, United Kingdom, France, Italy, Saudi Arabia, and Kuwait, deployed forces and/or equipment. Virtually the entire Western world-and a majority of Arab nations-opposed Iraq. Americans at home overwhelmingly came to the support of the president's actions (in contrast to the domestic situation during the Vietnam conflict).' The US government clearly articulated its policies and goals, having developed them through full, rapid, public debate, involving the executive branch, the Congress, and even the judiciary, which rejected various legal challenges to the evolving policies.

A new force, the international electronic news media, became a critical element in the successful execution of the war. In particular, coverage by the Cable News Network (CNN) demonstrated the power of international broadcasting and involved itself as a medium both to aid and to deter Iraqi PSYOP plans. In true democratic media tradition, the accumulation of factual reporting allowed knowledgeable audiences to correctly characterize Saddam's plans and behavior.

The Iraqi propaganda system is pyramidal, with the top spot occupied by Saddam Hussein. Control is maintained at the

top, with many outlets, both overt and covert, at the bottom. Iraqi propaganda flows from the Ministry of Culture and Information (MCI) under the strict supervision of the Baath Party, the Revolutionary Command Council (RCC), and Saddam Hussein. Iraq's propaganda system was closely modeled after the Soviet system and is similar to that of most other totalitarian states.

An overriding aspect of Iraqi propaganda is the use of religious words and phrases. The techniques of Iraqi propaganda during the course of the crisis reflected the same style used by the Iraqis before the Gulf War. This campaign emphasized religious symbolism, Arab nationalism, and praise of Saddam Hussein. These themes reflected Iraqi culture and politics, demonstrating the fallacy of planning PSYOP based on the characteristics of the sender (rather than the nature of the receiver).

The Iraqis selected the following four objectives for their initial PSYOP campaign:

1. Rationalize their invasion of Kuwait.
2. Gain support of Arab masses.
3. Discourage nations from participating in the UN embargo.
4. Discourage or hinder military attacks on Iraq.

Four themes were generated from these objectives:

- a. The revolutionary forces in Kuwait had asked for Iraqi help.
- b. Iraq is the champion of oppressed Arabs.
- c. The West is depriving the Iraqi people of food and medicine.
- d. Iraq will withdraw from Kuwait after a short time. 2

Later, a fifth objective-rationalizing the incorporation of Kuwait as a permanent province of Iraq-was established.

The MCI distributed the themes to the various media outlets for dissemination. This system worked very well, enabling the MCI/Baath Party to coordinate the campaigns, to react to impact indicators of current campaigns, and to initiate new campaigns on short notice. Some of the campaigns were selectively distributed to increase the stress impact on the target. Other

campaigns used all media to ensure the widest possible distribution in the shortest amount of time.

Few limitations were placed on the type or content of Iraqi propaganda. At no time did missing or contrary facts interfere with Iraqi operations. If needed, documentation was simply manufactured. In the Iraqi PSYOP system, few restrictions are placed on efforts used to further an Iraqi goal. Furthermore, their campaigns did not have to follow any consistency, logic, or form; it was acceptable to criticize the Multinational Force's (MNF) bombing as being inaccurate on one day and, on the next day, to rest a theme on the destruction wrought by highly accurate MNF bombing. As far as Iraqi media were concerned, MNF bombing accuracy varied with the need to enhance the Iraqi propaganda campaign.

Saddam's use of PSYOP had varying results. Saddam used Scud attacks on Israel and Saudi Arabia as a political weapon to divert coalition attention and military effort from the main battlefield. The ever-present threat of chemical warheads was a major factor in his plan. According to Lt Gen Tom Kelly, operations chief for the Joint Chiefs of Staff, the Scuds were "of little military significance." Nevertheless, they produced emotional and psychological effects. Although Saddam induced fear among the Israelis and Saudis, and consternation among the coalition in general, his plan ultimately grounded on the rocks of military reality. However, Saddam's combination of useless military technology and a politically diverse targeting policy did serve to divert valuable coalition resources from other targets to the difficult task of Scud hunting.

Saddam's tactical purpose was achieved, but his strategic purpose was thwarted by dual coalition responses. Coalition tactical air efforts against the Scuds helped the Israelis maintain their policy of restraint, while the technological breakthrough of Patriot missiles calmed both Israeli and Saudi publics and further demonstrated coalition invincibility. Tactical military response, based on military competence and technological superiority, blunted a political weapon aimed at the heart of the coalition.

Iraqi efforts to use Western television as a relay for propaganda programs failed to convince important world audiences, although they may have been somewhat effective within the

Arab world. Among those efforts were Saddam's personal appearances with hostages, whom he attempted to characterize as "guests" of the Republic of Iraq. But Saddam's campaign was doomed by the perfectly natural and spontaneous negative reaction of a little British boy whom Saddam tried to convince of his good will. In this case the attempt to manipulate Western media completely backfired, as repetition of this scene throughout the Western world established public opinion of the true nature of the hostage situation. Further, it exposed Saddam's manipulative efforts and seriously eroded whatever credibility he retained.

Later Iraqi broadcasts were to fall flat as a result of Saddam's loss of credibility. For example, scenes of bomb damage at the otherwise unidentified building presented by the Iraqis as the Baby Milk Factory (with signs and workers' jacket logos conveniently in English) were quickly dismissed as crude propaganda by all except the most gullible or anti-Western. The nonsequitur of the signs and the behavior of the Iraqi media escort personnel (who limited reporter access within the site) conflicted with Iraqi claims. And when Western intelligence analysts demonstrated that the claimed bombing damage to cultural facilities in Iraq (the bombing of which is forbidden by the accepted laws of war) had in fact been faked by Iraqi wrecking crews, the remaining shreds of Iraqi television propaganda credibility were destroyed.³

Controversy still rages, particularly within the TV news industry, on the wisdom of continuing censored and pressured TV broadcasts from within the enemy capital. The TV broadcasts had both positive and negative tactical effects. Coalition operators were able to conclude from viewing scenes from Baghdad, or from the disappearance of live TV from Baghdad, that certain targets had been effectively struck.

In addition, the televised appearance of downed coalition pilots proved counterproductive for Iraq's objectives. Instead of convincing the coalition partners to acquiesce, a worldwide audience was appalled by the battered physical condition of the captives-and their orchestrated, mechanical admissions of guilt were painfully transparent. A backlash effect inspired greater support for the coalition.

A closer look at this one aborted Iraqi campaign will help clarify the propaganda process. The Iraqi goal of this propaganda campaign was to break the coalition. The Iraqi leadership concluded that if US public opinion could be marshaled against the war in the same way it was during the Vietnam conflict, the US would withdraw. Toward that end, the propagandists attempted to mimic some of the successful tactics used by the government of North Vietnam. One of the tactics employed was on-camera interviews of captured coalition pilots. The Iraqis thought that presenting these interviews would stimulate the US public to call for the withdrawal of US forces and the pursuit of peaceful options. Instead, outrage at Iraq's obvious violation of the Geneva convention resulted in even greater backlash against Saddam.

The highest echelons of the MCI/Baath Party made the decision to use captured allied pilots for propaganda purposes. The Iraqi News Agency, one of the principal media outlets to the West, managed the entire campaign. The plan to exploit allied pilots for propaganda included this strategy:

- capture several pilots,
- parade them through the streets,
- put them on television with prepared questions and answers,
- view the impact of the broadcasts through the Western media, and
- disseminate broadcasts to media and determine their impact.⁴

The initial problem that Iraq faced was how to disseminate their product; the coalition had damaged most of Iraq's television broadcasting capability early in the conflict. The Iraqis were forced to use a surviving low-power television transmitter, which they used to televise the parade of coalition pilots through the streets of Baghdad. But Iran was the only country that could receive their transmissions, and the Iranians did not share them with the world in a manner that suited the Iraqi purpose.

To circumvent this problem, the Iraqis videotaped interviews of the pilots and delivered them to various Western news

agencies. The interviews of the pilots were choreographed with specific questions and answers.

Interviewer: What's your opinion of this aggression against Iraq?

Pilot: I think this war is crazy and should never have happened. I condemn this aggression against peaceful Iraq.

Interviewer: What do you think about this aggression against Iraq?

Pilot: I think our leaders and our people have wrongly attacked the peaceful people of Iraq. 5

In the interviews the pilots told their families that they were being treated well. The MCI/Baath previewed and approved the interviews before releasing them to the media.

The response to the broadcast came very swiftly. All Western government, public, and media severely condemned the broadcasts and use of the downed pilots in this manner. The worldwide condemnation was so overwhelming that the broadcasts, which had begun on 20 January, ended on 24 January. On 25 January, the MCI announced that the interviews of captured pilots would stop.

Another of Saddam's PSYOP efforts were the radio broadcasts to US troops in the field by "Baghdad Betty," reminiscent of those by Tokyo Rose during World War II. Intended to lower US troop morale, Betty's messages veered into the farcical as she warned American servicemen that their wives back home were sleeping with famous movie stars like Tom Cruise, Arnold Schwarzenegger, and Bart Simpson.

PSYOP, as used by Iraq, was intended to produce the greatest amount of negative stress within the coalition forces, the civilian population of those governments, and upon the civilian and political leadership of surrounding Arab states. As previously stated, the PSYOP efforts against the military forces of the coalition had minimal effects. However, the PSYOP effort aimed by Iraq at certain segments of the coalition countries and surrounding Arab nations was notable.

Saddam's propaganda effort as a stress-inducing instrument appears to have been as intense as the effort put forth by North Vietnam during the latter part of the Vietnam War. The

Iraqi PSYOP effort was clearly intended to pressure those nations supporting the coalition and those UN resolutions imposed on Iraq. Another Iraqi effort was to gather support for economic sanctions as an alternative to military action. Later, efforts were made against economic sanctions. Iraq portrayed the US, and specifically President George H. Bush, as the main opponent to Saddam. Some of the key themes used in these campaigns:

- **The war was really about access to oil.**
- **The US was using the war as an excuse for imperialism.**
- **The US was propping up a corrupt government in Kuwait.**

These attacks, targeted at the populations of Great Britain, Germany, France, Australia, Canada, the United States, and the Arab nations of the coalition, had varying degrees of success.

The Iraqi campaign against imperialism was a carbon copy of earlier Vietnam-era themes. Saddam spoke of the Gulf crisis as another Vietnam and painted a portrait of the US and coalition partners as embarking on another mistake. A great deal of effort was put into the following propaganda themes:

- **The US was embarking on another dirty war.**
- **The war would be very bloody and would last a long time.**
- **The US would again be divided over the war.**
- **Again, the poor and the minorities are fighting a war for the rich and powerful.**

Saddam Hussein's speeches were filled with images of certain doom, Vietnam-style-body bags returning home by the thousands, an enemy who could wait out the bombing to fight a bloody ground war, and an environment that would be as inhospitable as the jungle. He expected average citizens to recoil from the horror of such a war and spread more propaganda to dissuade the voters from supporting the coalition effort. A wedge between the Western nations would, in his mind, eventually result. The strategy is reflected in media writing around the world.

Iraq is no Panama and Saddam Hussein no General Noriega... The United States might be mired in the sands of the Arabian deserts just as they were bogged down in the paddy fields of Vietnam. (New Straits Times, 13 August 1990.)

It was clear from the beginning that the Persian Gulf conflict would not only be resolved in the hot dunes of the desert, but also in the

quicksand of US public opinion.... While the public's reaction against the US involvement in Vietnam took years to materialize, it has developed very quickly [for the Middle East] . . . This is a fortunate development. (*La Jornada*, 22 October 1990.)

[Saddam] seeks to break Western solidarity and above all to put the Bush Administration in a corner. Time is in favor of Iraq now that US public opinion is gaining a clearer dimension of the high cost in human life of military action in faraway lands. (*La Nacion*, 22 August 1990.)

The military force building up against Saddam Hussein is such that a spark may be struck at any moment. The United States will be in danger of sinking into the sand, as it once did in the rice paddies of Vietnam. (*La Suisse*, 23 August 1990.)

There's the strongly-held belief that the [Vietnam] experience has rendered America incapable of marshalling public support to launch another war. (*Irish Independent*, 20 September 1990.)

While the Iraq propaganda effort certainly caused some confusion, and increased the stress of susceptible segments of the audience, neither public opinion nor the world media were moved as the Iraqi president had hoped. The public within the US and other coalition countries was determined to show support for their soldiers stationed in the Gulf. Neither slogans nor disrespect of military forces gained popularity during the war.

The failure of most Iraqi propaganda was in its credibility. While Saddam himself believed much of his propaganda, it appears that most of the world did not. His biggest successes were in the Arab world; and even in those countries, success was neither significant nor complete on any issue. The propaganda, in general, was far below the level of sophistication of effective audiences. Politically aware segments of the population, who would be inclined to be antiwar in general, were, if anything, turned off by the crude Iraqi attempts to manipulate their sincere beliefs. The clear articulation of goals, international support through the coalition and the UN, and the effective, low-casualty military action, rendered Iraqi propaganda ineffective.

Coalition Psychological Operations

In contrast to Saddam's efforts, coalition PSYOP efforts significantly affected Iraqi soldiers. First, the coalition efforts

were of a more tactical nature (i.e., focused on *convincing* Iraqi troops to surrender). Second, the combining of PSYOP with the air and ground campaigns was intended to affect both soldiers and senior military leadership.

Tactical PSYOP in the Persian Gulf proved effective and efficient in terms of four principal sets of operations: ⁷

- radio *transmissions*,
- loudspeaker broadcasts,
- leaflet *disseminations*, and
- enemy prisoners of war (EPW) team actions.

Operational success resulted from effective innovation in the field and from well-executed, time-sensitive planning. To a lesser extent, tactical operations proceeded from the deliberate planning model. Using the four identifiable sets of operations, PSYOP was implemented by various agents and organizations, ranging from theater-level cells to small, three-person teams serving in direct support of the forward combat units.⁸

The four operations showed different levels of effectiveness as to their impact on the Iraqi target audience. Table 1 lists the efforts and the relative effectiveness resulting from the four operations collectively.

Table 1

Exhibit I PSYOP Effort and Relative Effectiveness
in the Persian Gulf

----- Effort -----

29 Million Leaflets Dropped In-theater
17 Hours Per Day of Radio Transmitting
19.5 Hours Per Day Aerial Broadcasting

----- Relative Effectiveness -----

73 Thousand Iraqis Reached through PSYOP
70% EPWs Report Messages Had Impact on Surrenders

Source: United States Special Operations Command (USSOCOM), "Post Operational Analysis: Iraqi Psychological Operations During Operations DESERT SHIELD/STORM," SOJ9, 1992.

The four operations focused on the intended Iraqi audience in concert with effective air and ground campaigns. However, because PSYOP had been slighted in the theater operational plan, this combination was not used at first. The result of this combined PSYOP, air, and ground effort was the influencing of an unexpectedly large number of Iraqi prisoners to surrender.

The four sets of operations-radio transmission, loudspeaker broadcasts, leaflet drops, and the actions taken by EPW teams-were conducted in January and February 1991.⁹ The coalition initiated its tactical leaflet and radio activities in January 1991 to coincide with the start of the air campaign and terminated them in March and May, respectively. The loudspeaker and EPW actions began in February with the start of the groufid campaign and ended in March and April.

An important precept at work in the radio and leaflet operations was reinforcement. Tactical PSYOP personnel announced to Iraqi ground units that a bombing was to occur at a specified time and place.¹⁰ The next day, they announced that a bombing had indeed occurred as warned (only if the event had occurred as planned). The repeated cycles of announcement and execution helped persuade the Iraqis that the message and delivery means were credible and that surrender was a viable alternative to useless death.¹¹

Radio Transmissions

Six broadcast platforms were established and used in the Persian Gulf theater of operations. Three were Volant Solo using EC-130 aircraft platforms (retransmissions made via modified USAF C-130 aircraft) and three were ground radio stations: "Voice of the Gulf," "Voice of America" (DOD-loaned equipment), and "Free Kuwaiti People." According to now declassified message sources, the radio stations were managed and run almost exclusively by US Central Command (USCENTCOM) as part of its theater operational plan. Thus, these stations were integrated into the overall combat-PSYOP effort relatively early. Programs consisted of pretaped messages broadcast continuously each day for about 17 hours. Messages conveyed such themes as the inevitability of defeat, Saddam's inappropriate leadership, and surrender

appeals. A typical message transmitted over an established "surrender hotline": "YOUR DIVISION WILL BE BOMBED TOMORROW. ABANDON YOUR EQUIPMENT, LEAVE YOUR LOCATION NOW, AND SAVE YOURSELVES."

The relative effectiveness of these radio transmissions, in terms of audience exposure, was approximately 58 percent (versus zero for no transmissions). The degree of persuasiveness relative to no transmissions was estimated to be 46 percent. Impact on surrender reached about 34 percent.¹²

Such moderate values, according to some thinking, may be reflective of a culture whose primary representational systems (or language channels) seemed not to be auditory, but visual (as with leaflet drops) and kinesthetic (as with the humane actions of EPW teams).¹³

Loudspeaker Broadcasts

Typical PSYOP was accomplished in the theater of operations by two- or three-person loudspeaker teams in direct support of forward combat brigades. Teams consisted typically of one or two noncommissioned officers and an interpreter or communications specialist.

Loudspeaker teams broadcast messages that had been prepared and dubbed onto audiotapes and distributed to them and other teams by the 4th PSYOP Group by way of its product dissemination battalion. Occasionally, a team would ad-lib a broadcast if pressures of the moment demanded variation from the prepared script and if the language skill and initiative of the team so permitted.

Loudspeaker broadcasts generally produced moderate effectiveness in terms of audience exposure, persuasiveness, and impact on surrender. The rather uneven successes of the loudspeaker operations were found to be similar to those of radio transmissions, although some results, arguably positive, were obtained through the convincing appeals of enterprising loudspeaker teams. At least one team induced a captured Iraqi sergeant to make heartfelt appeals to his comrades across a berm using the very loudspeaker system that induced him to surrender.¹⁴ Feedback from some EPWs indicated that, while

"leaflets and radio showed us how to surrender, loudspeaker teams told us [exactly] where [to do it]. ^ 15

The following account by SSgt Edward Fivel, 9th Battalion, 4th Psychological Operations Group (POG), illustrates the operation of his loudspeaker team and its unusual effectiveness.

We had to convince the company commander of our parent unit to let us PSYOP people try ousting those Iraqi soldiers from their underground bunker. We kept telling him there was nothing to lose by trying, especially since the pounding all morning by the 101st [Airborne Division] hadn't done anything.

So the three of us gave it a try. We arranged for the Blackhawk [helicopter] to ride us to the site of the bunker and we began dropping surrender leaflets. Then we returned to base and found that nothing had happened-no surrenders, no movement, nothing.

We tried something else. We hopped back on the Blackhawk and returned to the bunker area, this time intending to use our loudspeaker system and a pretaped message given by headquarters. We picked a spot on the ground about 800 meters from the bunker and started broadcasting. Nothing happened. I guess we couldn't be heard over the loud racket of our helicopter.

We asked the pilot to land us on the ground not too far from the bunker. With what you might call serious reservations, he eventually landed us, feeling a little protected, I guess, by the three Apaches and one Blackhawk whopping above our heads and to our right. He took off immediately, saying he'd stay in contact by radio.

The three of us were now on the ground. We were facing this enemy bunker that Intelligence says has 20 enemy soldiers who might be waiting to greet us. We picked up our loudspeaker equipment-the transmitter and the speaker-and ran about 200 meters closer to the bunker. We sat the equipment down and again started playing the cassette surrender tapes. Still no movement.

Then our team leader decided to lift up the speaker. He lifted it and began carrying it even closer to the bunker. He toted that speaker exactly 50 more meters. I knew the distance because that's the length of the electrical cord he stretched out to the end, 50 meters. The team leader was very close to the enemy now.

Then he suddenly stood straight up and pushed the speaker high over his head [like some kind of statue showing a big trophy to a crowd far away]. I told the other guy back with me watching all this, our communications man, to quit playing the taped message and go live, and to keep doing it. The guy had just gotten out of language school, so he could handle the Iraq language pretty well. He talked loudly through the speaker in four message sets.

That worked. A crackling voice came through our radio from the helicopter pilot who was still hanging up there with us. The pilot had spotted some movement. Then we saw Iraq soldiers begin climbing out of the bunker in front of our team leader. They were waving little white flags and carrying no weapons.

That was about it for us in that scene because our pilot said over the radio that he was landing to pick us up so he could refuel back at 101 division base. He was running real low on fuel. We didn't see how many Iraqis came out of that bunker, although we had counted up to about 20 of them before we took off.

When we got back to base, the three of us and our pilot began receiving weird congratulations. We weren't sure why. Seems that over 400 Iraqis eventually came out of the bunker, all without a fight.

For the next couple of days every helicopter the 101 had was flying back and forth carrying Iraqi soldiers from the bunker to a forward EPW camp. The camp must have been getting pretty crowded. The big thing we realized later was that these actions had kicked off the "Hail Mary" play in the ground war because they fixed the Iraqi units on line in front of us, letting our endrunners in the other division make their wide sweep around the main Iraqi force.

Leaflet Drops

Leaflets and other forms of print PSYOP proved especially effective. Of the targeted audience-300,000-plus Iraqi troops-approximately 98 percent of them read or were otherwise exposed to the 29 million leaflets dropped in the theater.¹⁶ Many EPWs were found clutching leaflets in their hands or hiding them somewhere on their uniforms as they raised their arms to surrender.¹⁷ An estimated 88 percent of the Iraqi forces were influenced by the leaflet drops as intended, and 77 percent were persuaded to quit the fight through the combination of combat-leaflet operations and credible tactical military threats and actions.¹⁸

Leaflets appeared to be effective in the Persian Gulf crisis. Their language was simple and straightforward. Appeals were visual for an audience that seemed to respond psychologically and emotionally to visual means. Whether the leaflets' effectiveness stemmed from psychological reasons or simply from the sheer volume of leaflets that descended on the Iraqis daily is open to interpretation. Weather conditions and low leaflet loss, combined with a generally effective theme, audience

vulnerabilities, and effective coalition military action, resulted in an unprecedented success in inducing surrenders. The leaflets enabled many Iraqi soldiers, who were not highly motivated to support Saddam's war of conquest, to avoid sacrificing their lives in a doomed cause.

Still, some curious effects were attributed to at least some of the leaflet designs. These were effects that startled even the Arab partners who had supposedly provided input to the format.¹⁹ PSYOP personnel later learned that the leaflets' effectiveness would likely have been enhanced had design consideration been given to the nonverbal, cultural cues that were read by the Iraqis as subtext.²⁰

If this concept (subtext in language) escaped or seemed vague to designers and others at first, the application certainly became clear with each EPW whom they later interviewed during *Desert Storm* and similar situations.²¹ Theater PSYOP personnel came to realize that they had missed an important dimension of cultural communication when designing the leaflets. In some cases, the PSYOP personnel were able to make adjustments and manage reprints; in others, they learned the cultural lessons after the cessation of hostilities.

An important illustration of this concept was the subtextual message transmitted by the color red. When red ink was included in leaflets, presumably for function or appeal, Iraqi soldiers typically hesitated or avoided approaching a leaflet sticking out from the sand nearby. They simply feared and disdained red as a signal for danger.²²

Whenever Iraqis read a leaflet that showed a coalition soldier without a chin beard gesturing affably to an Iraqi, the reader became distrustful. To an Iraqi a chin beard signals a certain Muslim holiness and trust he could not find on a clean-shaven chin.²³

When the Iraqis scrutinized a leaflet that showed Iraqi EPWs enjoying a bowl of fruit given by their captor, they were disappointed at seeing no bananas in the bowl. Bananas are a favored delicacy in Iraqi culture.

When an Iraqi soldier saw words encircled in the familiar thought bubble of Western comic strips, he became thoroughly confused. Unlike the English-speaking world and some other cultures, Iraqi culture does not link bubbles, words, and

pictures.²⁴ However, this technique had been so internalized by the leaflet designers, that they were unaware that some cultures use other clues to indicate which cartoon character is speaking.

Overall, *PSYOP in Desert Storm* was among the most successful media-based PSYOP campaigns ever undertaken. Planners incorporated PSYOP into air operations from the outset and relied on leaflets to multiply the stress induced by unopposed bombing raids. *Desert Storm* coalition PSYOP proved the value of this combat adjunct at the tactical level and reaffirmed the overriding importance of credibility. Iraqi disdain for truthfulness contrasted vividly with Western punctiliousness in behavior and leaflet preparation. Coalition determination to stick to truthful overt PSYOP, relying on credible military performance to override minor cultural missteps in message preparation, proved successful in inducing thousands of early surrenders. The bottom line of coalition policy was met-casualties were reduced on both sides.

Notes

1. *Newsweek*, 25 February 1991.
2. USSOCOM, "Post Operational Analysis: Iraqi Psychological Operations During Operations DESERT SHIELD/STORM," SOJ9, 1992.
3. The US is not signatory to the 1954 Hague cultural property convention, but the US Army integrated the treaty interdictions in 1955. W. Hays Parks, fn 212, 60.
4. USSOCOM.
5. Ibid.
6. Such use of prisoners is forbidden by the laws of warfare. The failure of the Iraqi plan was partially engineered by such clever Yankee air pirates as Lt Jeffrey Zaun, who adapted the methods used by US airmen and sailors in the Vietnam War. Zaun augmented the battering of his face and exaggerated his inappropriate behavior to inform the world the Iraqis were maltreating him. What is more amazing is that the Iraqis would peddle these devastating tapes. The coalition pilot's actions were so effective that future conflicts may finally see the end of such illegal exploitation of prisoners.
7. USSOCOM.
8. Ibid.
9. Ibid.
10. Ibid.
11. Ibid.
12. Ibid.

13. Ibid.
14. Ibid.
15. Ibid.
16. Commander, 4th Psychological Operations Group, interview with author, 1991.
17. Ibid.
18. Ibid.
19. USSOCOM.
20. Ibid.
21. Ibid.
22. Ibid.
23. Ibid.
24. Ibid.

Epilogue

Lt Gen Samuel V. Wilson, USA, Retired

If past events are indeed prologue to the future, then understanding the early nature and scope of psychological operations, synthesizing the PSYOP lessons learned from historical national *policy* planning and from strategic, tactical, and operational PSYOP applications, can foreshadow even greater progress and success in accomplishing our national interests and objectives in political and military environments. *Psychological Operations: Principles and Case Studies* is the catalytic framework toward that end, since it reflects the foundation of PSYOP knowledge and wisdom.

It is critical that those involved with PSYOP—whether they are military commanders, political leaders, new PSYOP technicians, or experienced PSYOP practitioners and staff officers—become familiar with this book to better understand the importance that military PSYOP plays as a cost-effective, force-multiplier instrument of US military and political power. Such understanding is especially necessary today, given our military budgetary constraints, the existing nuclear, biological, and chemical threats, and our dynamic, complex, and worldwide arena of operations. Sun Tzu's strategy in 500 B.C. of subduing the enemy without engaging him is not only apropos but quite probably necessary for our very propagation.

The reader can learn much from parts II and III, which present various articles on national policy, PSYOP planning, and strategic and tactical PSYOP. Part III is especially significant since today much of the third world still uses Soviet PSYOP doctrine. In fact, those who would argue that the communist ideological threat has diminished with the demise of the Soviet Union, and that the US PSYOP focus should be abated, need to take heed of the various strategic and global resurgencies and the Vietnam legacy presented in part IV. One of the most important reasons for the communist "ideo-military"

victory in Vietnam, for example, was that American strategic PSYOP had no political or moral acceptance as a necessary foundation of our national policy. We should not minimize the urgent need to increase American sensitivity to the psychological dimension of warfare, and these articles and case studies support that theme. The articles on our recent actions in Panama and in *Desert Storm* not only solidify the PSYOP requirement but also point out our weaknesses and future challenges.

These authors lead us to believe correctly that the PSYOP weapon system, if employed properly, must precede, accompany, and follow all military force employments while being closely coordinated with all agencies of government and while being systematically integrated with US national security policy and objectives throughout the spectrum of conflict and in peacetime. PSYOP is indeed a phenomenon in itself.

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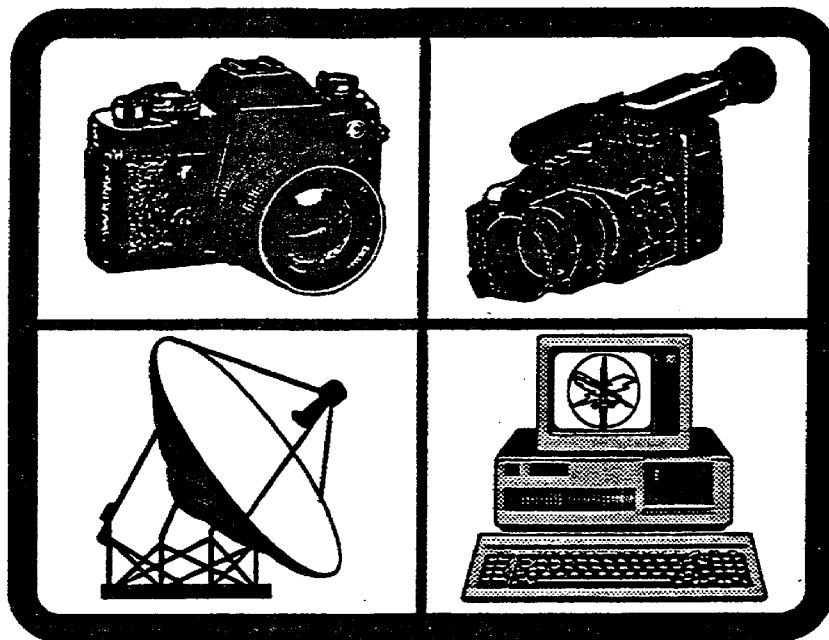
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SUBCOURSE
DI0240

EDITION
A

FEATURE WRITING AND EDITORIALS

PUBLIC AFFAIRS



THE ARMY INSTITUTE FOR PROFESSIONAL DEVELOPMENT
ARMY CORRESPONDENCE COURSE PROGRAM

**A
I
P
D**

**READINESS/
PROFESSIONALISM**



**THRU
GROWTH**

FEATURE WRITING AND EDITORIALS

Subcourse Number DI 0240

EDITION A

Army Public Affairs Center
Fort George G. Meade, Maryland

10 Credit Hours

Edition Date: March 1993

SUSBCOURSE OVERVIEW

We designed this subcourse to teach you basic procedures and tasks related to writing feature stories and editorials. Specific information is provided on the concept, function, structure and types/variations of feature stories; writing personality profiles; writing sidebars for feature stories; and the concept, purpose, structure and types/variations of editorials.

This subcourse reflects the doctrine current at the time the subcourse was prepared. In your own work situation, always refer to the latest official publications.

Unless otherwise stated, the masculine gender of singular pronouns is used to refer to both men and women.

TERMINAL LEARNING OBJECTIVE

ACTION: You will identify the function, structure and types/variations of feature stories; and identify the concept, purpose, structure and types/variations of editorials.

CONDITION: You are given the material presented in this lesson.

STANDARD: To demonstrate competency of this task, you must achieve a minimum of 70 percent on the subcourse examination.

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LESSON ONE

FEATURE WRITING

46Q Soldier's Manual Task: 214-176-1305

OVERVIEW

LESSON DESCRIPTION:

In this lesson you will learn the definition of a feature story, the basic approaches to writing the feature story and the different types of features.

TERMINAL LEARNING OBJECTIVE:

ACTION: Define the feature story, identify the five steps to organizing and writing a feature and recognize the different types of features.

CONDITION: You are given the material presented in this lesson.

STANDARD: Perform all the duties described in this lesson.

REFERENCE: The material contained in this lesson was derived from:

STP 46-46Q14-SM-TG, Journalist
DINFOS Journalism Handbook
Feature Writing for Newspapers by Daniel R.
Williamson, Hastings House

FEATURE WRITING

INTRODUCTION

Feature stories are different from straight news stories, which provide answers to the five W's and H --the who, what, where, when, why and how -- with added details for support. Features, in addition to the five W's and H call for imagination, colorful writing and --usually --more research.

By definition, a feature story is a creative, sometimes subjective article, primarily designed to entertain, educate or inform readers about an event, person, situation or an aspect of life.

Unlike straight news stories, features are normally not timely. This is an advantage for editors because features can be held until there is space in the paper. A story about a sergeant whose hobby is making model artillery weapons will be of interest to readers anytime.

There are, however, some features which must appear shortly before or after events. These are called "news features" and do have time value. For example, a feature interview with a survivor of a helicopter crash may not be very interesting six months after the crash.

BASIC APPROACHES

Writing the feature story requires discipline and organization. Concentrate on getting the required information and putting it into an easily understood form.

Start by **defining your topic**. Decide what information you want. Figure out how to get it and who to get it from. Plan how you will write your idea.

Next, **research the story**. Check the newspaper's file of old story clippings and back issues (the morgue) to find previously published material on the topic. Check references such as encyclopedias, maps, etc. If you use reference books, give full attribution.

Then **prepare questions**. Prepare more questions than you think you need to cover the topic when talking to sources.

Set up the interview. During the interview, observe your subject and his surroundings. Note gestures and body language. What does the room look like? Be a "human camera" --describe your subject and pertinent features of the environment. Such details help make the story interesting and believable for the reader.

Depending on circumstances this step may occur once you've defined your topic.

After the interview, **go back over your notes** immediately and add details you may not have noted at the time but that may add to your story. Fill in gaps in your notes while the interview is still fresh in your mind. Make your notes readable before you write. It is best to summarize all details pertinent to the story.

TYPES OF FEATURES

There are several forms features can take. Attempts have been made to classify them, but usually any one feature will exhibit several characteristics which writers should understand, such as the:

- o NEWS FEATURE --Ties closely to the a human-interest aspect of a news event.

Example: A soldier loses 78 pounds in one year, and scores 300 on the Army Physical Fitness Test.

- o PERSONAL EXPERIENCE FEATURE --Tells an unusual experience, either the writer's or someone else's.

Example: A soldier finds missing brother after 12-year search.

- o CONFESSION FEATURE --Written in a confidential tone either humorous or serious, with a positive ending.

Example: A former drug addict tells how he "kicked the habit."

- o NARRATIVE FEATURE --Similar to a short story in form, with action.

Example: Soldiers spend a weekend white-water rafting.

- o ESSAY FEATURE --Written often from library research, explains scientific facts or historical events. The writer must explain facts and figures in an interesting way rather than in the "dry" textbook style.

Example: A story about a World War II battle in which your unit participated and was cited for its action.

- o INTERVIEW FEATURE --Though it has other variations, the interview feature primarily uses a question-and-answer format. Many magazines carry an interview as a standard feature each issue.

Example: The post sergeant major's views on the new physical fitness program.

- o HOW-TO FEATURE --Gives specific directions or information.

Example: How to balance your checkbook.

- o PERSONALITY FEATURE --Describes a person's achievements and focuses on details of character and personality.

Example: A soldier who joined the Army as a high school dropout receives his master's degree.

- o HUMAN INTEREST FEATURE --The classic human interest stories are commonly referred to as "The Three B' s" --Babies, Beasts and Beauties. Stories about children, animals, beautiful women or handsome men always intrigue people. So do stories involving anything odd or out of the ordinary, and stories about adventure.

Features normally fall into one of three categories. The three most common are news features, human interest features and personality features. They may cover such areas as:

- o adventures
- o everyday life and experiences
- o humorous incidents
- o tragic occurrences
- o oddities
- o animals and their antics
- o seasonal items
- o chronological sequences

You can find examples of feature stories in Reader's Digest, People Magazine, or in the Life Style section of the Sunday newspaper.

PRACTICE EXERCISE

LESSON .

SUBCOURSE NO. DI C240

FEATURE WRITING

INSTRUCTIONS:

Review the material in this lesson. Answer the questions below by circling the "T" or "F" next to each question. Compare your answers with the answer key on the next page.

- T F 1. In addition to supplying answers to the five W's and H, feature writing normally calls for more research.
- T F 2. Defining your topic includes preparing questions needed to cover that topic.
- T F 3. Like the straight news story, features are normally timely.
- T F 4. The human interest feature centers on one person.

ANSWER KEY

PRACTICE EXERCISE

LESSON 1

SUBCOURSE NO. DI 0240

FEATURE WRITING

1. True (Page 2)
2. False (Page 2)
3. False (Page 2)
4. False (Page 4)

LESSON TWO

ORGANIZING TEE FEATURE STORY

46Q Soldier's Manual Task: 214-176-1305

OVERVIEW

LESSON DESCRIPTION:

In this lesson you will learn about the sources for feature story ideas, how to select a point of view for the feature story and how to recognize the three forms the feature story can take.

TERMINAL LEARNING OBJECTIVE:

ACTION: Identify basic sources for feature story ideas, understand how to focus and outline before writing the story, recognize the parts of a feature's structure, and know the three types of structures features can take.

CONDITION: You are given the material presented in this lesson.

STANDARD: Perform all the duties described in this lesson.

REFERENCE: The material contained in this lesson was derived from:

STP 46-46Q14-SM-TG, Journalist
DINFOS Journalism Handbook
Feature Writing for Newspapers by Daniel R.
Williamson, Hastings House

ORGANIZING THE FEATURE STORY

SOURCES OF FEATURE STORY IDEAS

Look around you. What ideas for possible feature stories do you see?

What about that private on the company drill team who speaks with an accent? She was born and raised in Germany; what is she doing in the U.S. Army?

What about that fellow next to you? Why does he keep talking about V-8s, differentials and shocks? Was he really with Al Unser as a mechanic for three years?

What about that retiree you met at the post exchange? He's the one who limps and keeps riling you by calling you "Sonny." Why does he keep talking about Korea, and how today's youngsters have it so good?

The successful feature writer must be inquisitive and develop a keen sense of observation. A well-tended landscape isn't just a pleasant sight to him. He wonders who keeps it trim and why. He inquires into the benefits of conservation or soil erosion control and the alternatives, wildlife sanctuaries or outdoor living. And, chances are, he can forge the answers to his questions into an interesting feature story.

The power of observation -- the ability to accept nothing at face value, but to dig into unanswered questions below the surface of the event -- is an invaluable asset to the feature writer. Just as an artist develops an eye for subtle coloring and learns to portray it in a painting, so must the feature writer learn to see life and his surroundings with an inquiring mind that demands to know all the answers. He must keep his eyes open for stories all the time, on duty and off.

Another excellent source of ideas is the newspaper. News stories report national, state and local events as they happen. They usually do not give extensive background information or cover all aspects of a story. But every day brings news stories that can have feature angles.

Sometimes the idea is obvious. Sometimes it is hidden. The ability to take bare facts from the news page and to give them meaning can produce a good feature article. But the feature must reflect local interest. For example, when a news story announces a change in the town's property tax base, the feature writer can show how this change will affect the local home owner. Thus, the writer localizes the news story for the reader and gives it expanded meaning.

Military news gives the alert and skillful writer more than a handful of items that could be broken down and brought a little closer to home, with issues such as:

- o changes in regulations
- o pay increases
- o policy
- o mission
- o organization

It takes an alert writer to turn bare facts and sometimes dull items into interesting, meaningful articles.

SELECTING A POINT OF VIEW

Before you start writing, decide what point of view is best for your feature. You may write from someone else's, or your own viewpoint. The point of view should be identifiable and consistent in the story.

- o ANOTHER PERSON' S POINT OF VIEW --In human interest features, write from the viewpoint of a person involved in the story.

Example: The Army private closed his eyes, reflecting briefly about his deed. "I heard a woman screaming, 'Help me!' As I turned the corner I saw smoke and flames coming from about 50 feet away. Guided by an infant's cries, I raced inside and crawled through the smokey inferno," he said.

- o "I" POINT OF VIEW --Use this approach when you wish to report what you saw and how you felt about it. But use it infrequently.

Example: I watched the crowd leaving the field and wondered if it....

FOCUS AND OUTLINE

Focusing means to test your collected facts against the original idea you identified in the first step of this process, and to redefine the idea if the facts no longer support your original thesis. Ask yourself: What is this story about? Why am I writing it? What is the main point to tell the readers? Write down your main point in the form of a sentence.

For instance: **This story is about an Army sergeant trying to make the Olympic swimming team.** You might decide to limit the ground you will cover in the story. You might tell about the grueling training the swimmer has done during off-duty time to get ready for tryouts. It would be natural to talk about:

- o hopes and dreams
- o family support
- o how swimming fits in with the soldier's duties
- o how swimming doesn't fit in with the soldier's duties

It would take a crafty writer, a sleepy editor and a very tolerant reader to permit much space to be devoted to unrelated facts such as the swimmer's grades in elementary school and playground friends. You must leave out facts that don't pertain to the focus you've established. Just because the source gave you an interesting quote doesn't mean it must be used. Use only facts that fit. Often a person has other interesting hobbies or aspects of his life. Mention them, but don't get sidetracked.

Outlining helps you identify the facts that fit. It can be a formal process with headings and subheadings. Or it can be as informal as tearing pages out of your notebook and reordering them. The point is, some form of outline will help you order the facts so you know how to begin, what to put into the middle and how to end your story. Very often the difference between writing a difficult story and a simple one is an outline.

STRUCTURE

The feature story usually includes these parts: the lead, bridge, body and ending.

The **LEAD** grabs the reader's attention and "sells" the story. Depending on the type of lead used, it could contain all five W's and the H, or it might answer just one of them. However, the remaining Ws or H must be logically answered elsewhere in the story.

- o Who -This can be personal, by mentioning the subject's name, or impersonal, by emphasizing a person's title or group's name.
- o What -This satisfies the reader's curiosity about what happened. "What" and "who" leads are used most often.
- o When -The time element of an event.
- o Where -Sometimes where an event or incident occurred or is to occur is the most important aspect of a story.

- o Why -The "why" element can be the most important fact when the answer directly affects the reader or otherwise is of importance to the audience.
- o How -Emphasizing the answer to the "how" question could add to the reader's interest in the story.

Sometimes called the "thesis paragraph," the **BRIDGE** is a transition between the lead and body and helps back up or add information to the lead.

The **BODY** develops the story with details.

The **ENDING** may leave the reader with a strong conclusion or summary, or it could leave the reader hanging when the outcome of a situation is still unclear.

Although various diagrams have been drawn up to show the structure or organization of the feature story, there is no one correct structure for a feature. Features may take one of two forms:

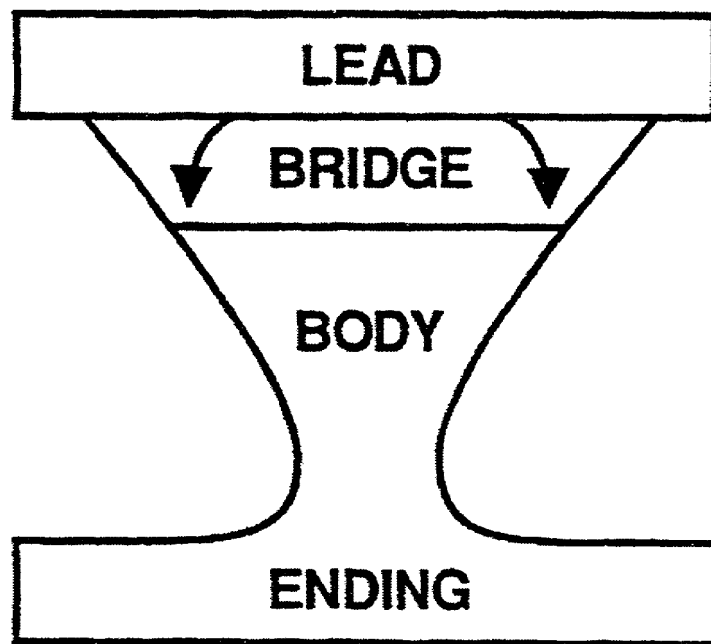


Figure 2-1
Feature Pyramid

The feature pyramid uses a strong lead and an ending that is equal, or nearly equal, in importance to the lead. It is perhaps the most common form used. Facts are given in order of increasing importance, and this is the most common structure in feature writing.

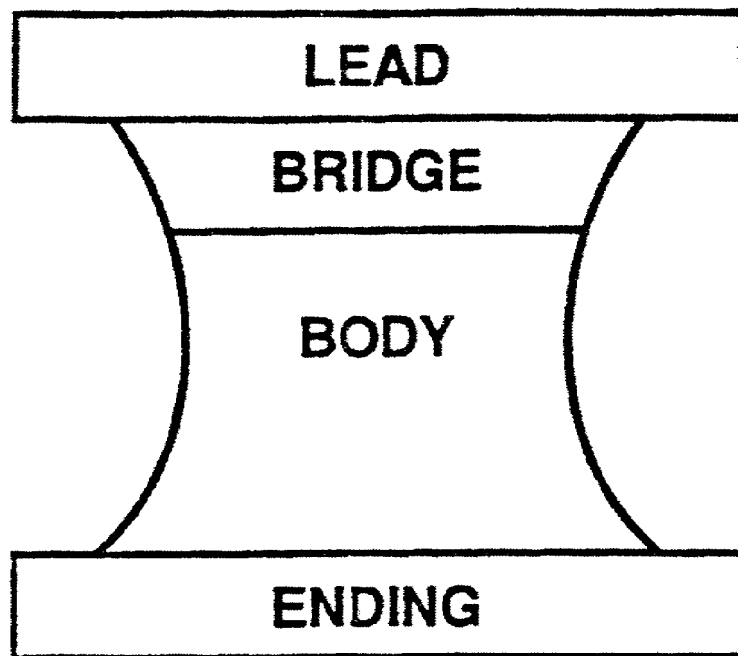


Figure 2-2
Chronological Pyramid

The chronological pyramid has a strong lead, a brief bridge, and the body is written in the order in which events happened. The body usually leads up to a strong, climactic conclusion.

Typical features which are written in this format include narrative, personal experience, confession and how-to articles.

Remember that the story content is often the best guide to help determine which format will best present your feature.

PRACTICE EXERCISE

LESSON 2

SUBCOURSE NO. DI 0240

ORGANIZING THE FEATURE STORY

INSTRUCTIONS:

Review the material in this lesson. Answer the questions below by circling the "T" or "F" next to each question. Compare your answers with the answer key on the next page.

- T F 1. Possessing sharp writing skills proves to be the feature writer's most valuable asset.
- T F 2. Focusing means to determine the main point you want to convey to your readers.
- T F 3. The lead of a feature story must contain all five W's and the H.
- T F 4. The body of the feature story serves as a transition from the lead and the bridge.

ANSWER KEY

PRACTICE EXERCISE

LESSON 2

SUBCOURSE NO. DI 0240

ORGANIZING THE FEATURE STORY

1. False (Page 8)
2. True (Page 9)
3. False (Page 10)
4. False (Page 11)

LESSON THREE

WRITING THE FEATURE STORY

46Q Soldier's Manual Task: 214-176-1305

OVERVIEW

LESSON DESCRIPTION:

In this lesson you will learn about the nine types of feature leads, the purpose of the bridge, how to build the feature's body and about the four types of endings commonly used in feature stories.

TERMINAL LEARNING OBJECTIVE:

ACTION: Recognize the nine types of feature leads, know the function of the feature's bridge, apply the given techniques in order to develop the story's body, and identify the four types of endings used in feature writing.

CONDITION: You are given the material presented in this lesson.

STANDARD: Perform all the duties described in this lesson.

REFERENCE: The material contained in this lesson was derived from:

STP 46-46Q14-SM-TG, Journalist
DINFOS Journalism Handbook
Feature Writing for Newspapers by Daniel R.
Williamson, Hastings House

WRITING THE FEATURE STORY

FEATURE LEADS

The purpose of a feature lead is to get and keep the reader's interest and to set the tone of the story. The feature lead may be as short as one or two sentences or it may take two, three or more paragraphs to fully develop.

Feature leads are classified into the following nine categories:

- o SUMMARY LEAD -- Gives the main point of the story, arouses interest and allows swift scanning of important facts.

Example: It's not easy for retired Sgt. 1st Class Martin T. Johnson to keep up on a 10K fun-run. He lost his left leg five years ago.

- o DESCRIPTIVE LEAD) -- Causes the reader to draw a mental picture of the subject or site and places the reader a few feet away, in position to see, hear and smell what is being written about.

Example: The last chopper sat down at Fire Support Base Ross in a whirl of reddish-brown dust amidst a hundred or so excited, jabbering Vietnamese men. It had been a long flight from Danang and the 30 passengers aboard suffered from ringing ears and buzzing limbs. As soon as the ramp was lowered, there was the usual rush on wobbly legs to solid ground. The search for a familiar face or landmark began by sweat-drenched, green-clad men loaded down with packs, cartons of cigarettes and mail bags.

- o QUOTATION LEAD -- Gives a short, attention-getting remark that is so important that it overshadows other facts of the story. It must also be striking to the reader and serve to lead him into the story.

Example: "I look death in the face every morning," Master Sgt. James K. Tennus exclaimed. "And I love it!"

CAUTION: Quote leads should be used sparingly and they must be well written. Boring "ho-hum" quotes will turn off reader interest. The quote should "hook" the reader into wanting to read the rest of the feature.

- o QUESTION LEAD -- Works best when it asks a question that applies to many readers. If used it should be answered quickly, so as not to leave the reader dangling. This is an effective, yet abused, type

of feature lead. Questions to which the reader can quickly answer "yes" or "no" must be avoided.

Example: Why should an infantryman spend countless hours studying toward a college degree?

CAUTION: A weak question lead could get readers to answer, "Who cares?" A strong question lead, however, will reap benefits since people are usually curious.

- o DIRECT ADDRESS LEAD --The writer communicates directly with the reader. The word "you" is inserted somewhere in the lead. (This second person singular address should be used sparingly.)

Example: If you play your cards right, you could get a free education at the college of your choice.

- o TEASER LEAD --Deceives the reader in a jesting manner and, by grabbing the reader's attention, gently leads him into the story.

Example: It has legs, a thousand toes, a hundred noses and scores of horns. No, it's not a science fiction monster. It's the newly formed 29th Infantry Division marching band.

- o FREAK LEAD --Uses a play on words, alliteration, poetry, or an unusual typographic device to produce the desired effect of luring the reader into the story.

Example: For sale: One town.

- o NARRATIVE LEAD --Puts the reader into the story and takes him through it. Narrative leads are especially effective in telling adventure stories. The writer "creates" a situation and skillfully lets the reader become the principal character, either by leaving a vacuum which the reader mentally fills or by allowing the reader to identify with a person in the midst of the action.

Example: The red taillights of the fleeing Cadillac grew smaller as Sgt. Dan Caper floored the accelerator of the military police sedan, pushing the speedometer needle past 90, in an effort to catch the speeder.

- o COMBINATION LEAD --Combines the best elements of two or more of the previously described feature leads.

Example: How can you stack the deck in your favor for the next promotion board? (Combines direct address and question lead forms.)

Whatever form of feature lead you decide to use for a particular story, you must try to sink the hook into the reader with the first few words. Many communication experts say if you don't get the reader's interest in the first few words, you won't.

THE BRIDGE

The bridge of a feature story could be a paragraph or a short sentence. The bridge backs up the lead or adds information to the lead. It should provide a smooth transition into the body for the reader.

Examples:

- (Lead) It's not easy for retired Sgt. 1st Class Martin T. Johnson to keep up on a 10-mile march. He broke both his legs in six places a year ago in an auto accident.
- (Bridge) The Army sergeant has overcome massive obstacles created by his "handicap." (Story goes on describing how he overcame the obstacles and his feelings about the "handicap.")
- (Lead) "I look death in the face every morning," Master Sgt. James K. Tennus exclaimed. "And I love it!"
- (Bridge) His job is not one many soldiers would consider making a career. Tennus is a demolition expert who got his start in the business during the Vietnam War. (Story goes on to describe the kinds of "death-defying" situations in which he has found himself in his job.)

THE BODY

The body of a feature story is often written in the "feature pyramid" form. Instead of giving details in their decreasing order of importance, you may want to save the most important detail for last to surprise the reader at the end of the article. If that is the case, you would use the "chronological pyramid" format. The vivid details of the feature body can be enhanced by using description, by describing the setting, through statistical information and by the use quotes.

Description

A well-written feature demands that the reader use precise detail and description. It paints a lively word picture of the subject to allow

the reader to form a mental picture of the person he's reading about.

The feature story gives insights that set the subject apart. These insights give the reader the feeling that he has actually met the subject.

Daniel R. Williamson, in his book, **Feature Writing for Newspapers**, calls the personality feature "the journalistic art of capturing a human being on paper." He adds that the writer must try to "capture the character within a reasonable amount of space. He must immediately plunge into the character, grabbing the reader's interest by emphasizing a fascinating facet of the subject."

Many military journalists mistake the use of adjectives and adverbs for colorful writing. Without attention to detail and description, all these words do is make for a lot of editorializing on the part of the writer. This is not to say that all adverbs and adjectives should be avoided. To the contrary, they should be used to give the all-important detail and description that makes a feature come alive. But it is the precision with which they are used, not their use, that marks the difference between a novice and a professional.

The novice might write:

The big man walked across the room to his large, dark desk, slowly sat down, leaned forward and in a friendly manner invited the visitor to make himself comfortable.

Reading this, you would have no idea if the subject is tall, short, slim, stocky, dark or light complexioned. Adjectives like "big" are unclear. You know nothing of the setting of the article. Instead, the writer has tossed adjectives and adverbs into the copy at random and has only told the reader about the scene. These detract from, rather than add to, the writing.

The professional, on the other hand, in describing the same scene might write:

He plodded across the carpet, his muscular 6-foot frame gliding as his ancestors might have slipped through the North American forests. Head forward, chin leading the way, he stalked the mahogany desk that filled the corner of the room near the window.

He pulled the padded chair from behind the desk and eased into the seat. A slit of a smile exposed two even rows of teeth made whiter by their contrast to his bronze skin. The light from the window flashed blue on his black hair.

The chiseled features softened.

"Make yourself at home," he said.

Note the details in the second example. What we have now are the writer's observations. He has shown you the scene.

Describe the Setting

Describing the setting helps a feature come alive. If the interview takes place in the subject's office, is it neat? Cluttered? If it's neat as a monk's cell, the writer should say so. If it looks like a monkey's cell, that should be said too, but in a way which is not insulting to your subject.

If the interview takes place in the subject's home, what is it about the place that reflects the subject's personality and character? For example, if a John Wayne-ish man has his den decorated with ruffles and lace and painted in pastel colors, this certainly tells something of his personality.

Statistics

Statistical material, when used properly, can create reader interest. The secret is to translate the figures into terms the reader can comprehend. Often this is done by reducing large figures to smaller ones:

About 150 Americans die in motor vehicle accidents every day.

Burglaries occurred in the United States at the rate of nearly five a minute, around the clock. That's one burglary every 12 1/2 seconds.

Figures can also be inflated to represent a largest idea:

This year traffic deaths on the nation's highways would fill Yankee Stadium.

Another useful technique which many writers miss is the effective use of mathematical, scientific and technical information. A Little imagination can help make the terms understandable to readers.

Often, similes, metaphors or similar word pictures can be used to make such information come alive. The alert writer might say that "An ounce of gold can be stretched, without breaking, into a 35-mile wire."

Quotes

A sprinkling of direct quotations by the subject will add zest to the feature. The secret here is to select the quotations that will illustrate an aspect of the personality that is being emphasized. If you want to show that the subject possesses a quick wit, use a quotation illustrating that point.

Quotations by the subject can say more than any number of words a writer could put on paper. The manner in which a person speaks, his accompanying gestures, and the actual words used can all create an image for the reader. (Omit profanity or obscenities.)

One caution on quotes: Make them count. Don't carry the story with one boring quote after another. Don't put statements of the obvious inside quotes. Summarize lengthy quotes with concise paraphrasing and use only the liveliest, most telling quotes to let the subject display his character or philosophy in his own words.

For instance, look at this quote:

"I've enjoyed all my assignments. You meet some great people in the Army."

This quote is nothing more than padding, pure and simple. The writer just filled some space by using this quote, a flatly obvious statement that half a million soldiers might make. It reveals little about the personality of the subject. The only thing we learn from that quote is that the writer lacked imagination.

"I used to play drums in a 60s rock band and our concerts made all the practice worthwhile, with the kids screaming and all. Once a bunch of girls came after us, though."

"At first I thought they just wanted autographs, but they cut off our hair and tore our clothes for souvenirs. But that was the only, what you would call, really 'bad' experience and it wasn't really so bad. Overall, I ate it up, even getting tore up. I was a big star in a little galaxy."

This quote is much too lengthy. Probably a faithful transcript of an interview, but some good material gets buried in a lot of slop: . Combining some tight paraphrasing with the brightest quotes fixes it. One way to do it:

Kids screamed at him. Women attacked him, tearing at his clothes and hair.

"I ate it up," he said of his time spent 5-pounding drums in a 60s rock band. "I was a big star in a little galaxy."

Also, make sure to attribute all information. Answer the S W's and H in feature writing as in straight news writing. feature writing style and format is more flexible, the reader still wants to know as much as possible about the feature subject. Be objective; save opinions for editorials. If you draw conclusions, be sure you've given evidence to support them. Avoid libel.

You are free to use more description and descriptive words, and to use more quotes, but you also will need more transitions between paragraphs to help make the story flow better, and to enhance readability. Transitions are words or phrases that link sentences or paragraphs together. Some common examples are:

again	as a result	finally
indeed	on the other hand	meanwhile
still	since	not only (that)
of course	on the contrary	why?
nevertheless	a case in point	on the whole
earlier	while	because

THE ENDING

The conclusion of all good feature stories should be appropriate to the mood of the story and to the type of structure in which the story was written. As in the lead, the writer is limited only by his ability in composing a conclusion.

There are several types of endings which are commonly used in feature writing:

- o SUMMARY ENDING -- Summarizes the story for the readers.
- o STINGER ENDING -- Presents a startling fact or surprise that jolts the reader.
- o CLIMAX ENDING -- An obvious or logical ending to a story told in chronological order.
- o UNENDING ENDING -- Leaves the reader hanging, or tells him the outcome is still uncertain.
- o WRAP-UP -- Ties up any loose ends, answers a question or solves a problem posed in the lead. An anecdote or strong quote often works in this type of conclusion.
- o TIE-BACK -- Refers back to an idea, key word or quote planted earlier in the story, often in the lead.

- o COMBINATION -- Any ending that combines two or more of the above types.

FINAL TIPS

Refer to the following to help develop your feature writing skills:

- o Use the lead to set the tone or mood of the story.
- o Make sure your lead is appropriate to the type of story.
- o Develop the bridge so that it links the lead to the body.
- o Carry the tone or mood of the lead throughout the story.
- o Maintain your story's focus.
- o Avoid using clichés, but do employ such literary devices as metaphors, similes, personification and hyperbole-
- o Use vivid verbs and nouns.
- o Give appropriate description of the people, places and things in the story.
- o Delete unnecessary, nonfunctional adjectives and adverbs.
- o Stay away from such relative terms as "tall," "old" and beautiful.
- o Use meaningful quotes to humanize the story and assist in its flow.
- o Add attribution when needed.
- o Use transitions to carry the reader from one thought to another.
- o Alternate sentence and paragraph length.
- o Translate numbers and statistical data into understandable terms.
- o Make sure that the conclusion to your feature story matches appropriately.
- o Ensure that your feature is free of any factual errors.
- o Ensure that your feature is free of libelous statements and does not violate security, accuracy, policy or propriety.

PRACTICE EXERCISE

LESSON 3

SUBCOURSE NO. DI 0240

WRITING THE FEATURE STORY

INSTRUCTIONS:

Review the material in this lesson. Answer the questions below by circling the "T" or "F" next to each question. Compare your answers with the answer key on the next page.

- T F 1. The purpose of a feature lead is to get and keep the reader's attention.
- T F 2. The question lead causes the reader to draw a mental picture of the subject and/or site of the story.
- T F 3. The narrative lead puts the reader into the story and leads him through it.
- T F 4. The body of a human interest article is often written in the "inverted pyramid" format.
- T F 5. When using quotes in a feature story, there is no need for paraphrasing.

ANSWER KEY

PRACTICE EXERCISE

LESSON 3

SUBCOURSE NO. DI0240

WRITING THE FEATURE STORY

1. True (Page 16)
2. False (Page 16)
3. True (Page 17)
4. False (Page 18)
5. False (Page 21)

LESSON FOUR

WRITING SIDEBARS

46Q Soldier's Manual Task: 214-176-1306

OVERVIEW

LESSON DESCRIPTION:

In this lesson you will learn about sidebars; what they are and how they are used with features.

TERMINAL LEARNING OBJECTIVE:

ACTION: Define a sidebar, recognize a sidebar's purpose, identify how to find a sidebar and understand the fundamentals of writing sidebars.

CONDITION: You are given the material presented in this lesson.

STANDARD: Perform all the duties described in this lesson.

REFERENCE: The material contained in this lesson was derived from:

STP 46-46Q14-SM-TG, Journalist
DINFOS Journalism Handbook
Feature Writing for Newspapers by Daniel R.
Williamson, Hastings House

WRITING SIDEBARS

PURPOSE

If you can visualize a motorcycle and sidecar, you can visualize the sidebar.

Think of the motorcycle as the news story and the sidecar as the sidebar. The sidecar accompanies the motorcycle; the sidebar accompanies the news or feature story.

Daniel R. Williamson, author of **Feature Writing for Newspapers**, defines the sidebar as "normally a brief account that relates directly to a major news story or in-depth story on the same page or at least in the same edition."

In effect, the sidebar rides the coattails of the story. It helps the reader relate to the news by explaining the importance or significance of related facts.

The sidebar may also expand on those facts presented in the hard news story. By using the sidebar for expansion or further clarification, the news story will not be cluttered with excessive detail.

Helping the reader relate to the cold, hard facts is another purpose of the sidebar. If the news story tells the reader 14 people were killed in a post construction accident, the sidebar may show what the victims' survivors are going through. If the news story tells the reader an Army commissary will start selling a new item --horsemeat --next month, the sidebar may show customer reaction.

This points out the difference between telling and showing. Let the facts in the news story tell; let the sidebar show. Readers get the five W's and the H in the news or feature story. The sidebar can help them relate to the facts and bring facts closer to home. Facts and additional information can be included in the sidebar to support the news.

FINDING SIDEBARS

How do you find the sidebar idea? Many reporters discover a sidebar idea while covering a news event. A journalist covering a routine change of command ceremony may find the new commander is a Medal of Honor winner. After interviewing the new commander, the journalist turns in the change of command ceremony story and a sidebar on the commander. Readers get not only the news of the change of command, they also get a story that lets them know something about the new boss.

For the most part, sidebars aren't planned. It will take some digging and some legwork, but even the most routine news story can be complemented with a sidebar.

WRITING SIDEBARS

In writing the sidebar, a brief tieback to the news story or news feature must be included in the lead to make it clear to the reader that the stories go together. The tieback may be as brief as "...a result of Friday's bridge collapse here..." or "... commissary customers' reactions to the addition of horsemeat here..." The tieback simply lets the reader know the news story and sidebar are like the motorcycle and sidecar --they go together.

Although it's a temptation, resist the urge to overwrite. Don't get carried away with your words. The sidebar story should be fairly brief so it can be placed next to or near the news or feature story.

How brief is brief? That depends on the length of your news story. Sidebars may be longer or shorter than the news story. However, if your news story is 20 column inches, chances are you can cut some of the sidebar. Be ruthless when you take pencil to your copy. It will help keep the sidebar brief. Placement of the sidebar, used in conjunction with the tieback, will show the connection between the stories.

A sidebar, however, should not be confused with a multi-part article or a straight second-day follow up story. It is an individual story which grows out of a larger overall story.

Focus your attention on:

- o description
- o transitions
- o mood
- o theme

Use words and phrases that will appeal to the reader's five senses. Show the reader what you have told him in the news or feature story. The following guidelines can be used when writing sidebars:

- o Focus the sidebar on a single aspect of the main story.
- o Write the lead to your sidebar with an appropriate tie-back to the main story.

- o Do not repeat information or quotes found in the main story.
- o Write the sidebar in news or appropriate feature style.
- o Make sure the story is free of factual error.
- o Make sure your sidebar is free of libelous statements and does not violate security, accuracy, policy or propriety.
- o Do not violate the Associated Press Stylebook, and ensure correct use of spelling, grammar, punctuation or syntax.

PRACTICE EXERCISE

LESSON 4

SUBCOURSE NO. DI0240

WRITING SIDEBARS

INSTRUCTIONS:

Review the material in this lesson. Answer the questions below by circling the "T" or "F" next to each question. Compare your answers with the answer key on the next page.

- T F 1. A sidebar can help a reader relate to the cold, hard facts of a news or feature story.
- T F 2. In writing a sidebar, a brief tieback to the news story or news feature must be included in the text.
- T F 3. The sidebar story should be fairly brief so that it can be placed next to the news or feature story.

ANSWER KEY

PRACTICE EXERCISE

LESSON 4

SUBCOURSE NO. DI0240

WRITING SIDEBARS

1. True (Page 28)
2. True (Page 29)
3. True (Page 29)

LESSON FIVE

WRITING EDITORIALS

46Q Soldier's Manual Task: 214-176-2422

OVERVIEW

LESSON DESCRIPTION:

In this lesson you will learn to recognize the concept, purpose, structure and different types of editorials.

TERMINAL LEARNING OBJECTIVE:

ACTION: Define the editorial, understand the purpose and structure of the editorial and identify the different types of editorials.

CONDITION: You are given the material presented in this lesson.

STANDARD: Perform all the duties described in this lesson.

REFERENCE: The material contained in this lesson was derived from:

STP 46-46Q14-SM-TG, Journalist
DINFOS Journalism Handbook

WRITING EDITORIALS

INTRODUCTION

Ask a journalist to write an editorial and he can think of a thousand things that need to be said. Military reporters are observers of one of the largest government agencies in the world, and they know what needs to be fixed and what doesn't. But before the young writer begins campaigning via "his" editorial page, there are a few things he must know. First, military journalists must understand the purposes of editorials in military publications. Then, they must know what to write editorials about.

Editorial pages exist to support the command. A military editorial writer's job is not crusading to defend First Amendment rights. The job of an Army editorial writer is to support the command and its command information objectives.

That doesn't mean your editorial pages can't be lively and useful. The best editorial pages cover controversy from all sides. They give voice to members of the command as well as the commander. They treat repetitive, even boring, subjects inventively.

EDITORIAL TOPICS

The editorials you write must be of interest to the Army audience. The topics must be written to comply with the commander's command information objectives and may not violate Army policies or regulations.

Often your editor or commander will assign the topic. You may have opportunities to write editorials on a variety of subjects to support community goals, local and Armywide command information programs. Sometimes you will determine the subject of the editorial. When you get to choose the topic, be sure to select one of interest to your audience while also supporting command information goals.

The following subjects are not allowed in military editorials:

- o taking positions on political parties, candidates or politically active groups
- o criticism of a host country or discussion of its politics
- o subjects that discredit the Army or your post, even if the civilian press publicizes the matter
- o attacks on, or ridicule of, the military, its policies, or its members

- o belittling any race, religion, or culture
- o personal pet peeves

DEFINING THE EDITORIAL

Editorials can best be understood by comparing them to other journalistic forms and describing the function each serves.

Straight news stories report the facts without embellishment or conclusions. Interpretative reports explain the news in terms of cause and effect, adding much more in-depth coverage and analysis. Features provide human interest information. Editorials offer opinions and views about events and their effect on people.

For example, a publication might run a straight news story about a woman officer taking command of an all-male unit. A feature story about the event might emphasize her personality and background. An interpretative story about the same event might give more details and expert testimony explaining the role of women in the Army. An editorial on this subject might urge men to give women equal respect and treatment.

TYPES OF EDITORIALS

Whatever the definition, editorials usually serve one of three functions. They:

- o inform
- o influence
- o entertain

Inform

Many military editorials are informative. Some examples include explanation of a new dress code, effects of drug abuse in which the conclusion is only implied and safety precautions for holiday driving.

Influence

This editorial tries either to convert the reader to the writer's (or the command's) viewpoint, or to help him crystallize thoughts on an issue. It uses argument to sway readers to a point of view. These editorials usually include a call to action asking the reader to do something or avoid something.

A good approach in editorials designed to influence is to state the problem, define it, suggest possible solutions and offer a decision on which of the alternatives would be the best choice. Another approach is to state your subject and point of view in the lead, then back up your editorial opinion with logic. No matter what approach is chosen, this editorial must show evidence of sound reasoning and diligent, accurate research.

A good balance of information considering all possible points of view will give the reader the idea that the article and the publication's editorial policy are worthy of consideration.

Entertain

Editorials written to entertain provide insightful, colorful and sometimes humorous commentary. They may present an ironic poke at man's weaknesses or shortcomings. They may look back at the "good old days," reflect a human interest angle at changes in the news or simply reflect on some aspect of life.

A well-written entertainment editorial uses a quick jab of humor or insightful quip to make an editorial point much quicker and more effective than can a dry sober article on the same subject.

Use caution with this technique. Entertainment, particularly humor, is difficult to master and is easily overdone by novices. Also, some people might not appreciate the humor, depending on the subject.

MAINTAINING OBJECTIVITY IN EDITORIALS

An editorial generally forces the writer to take a side. Still, the writer must remain objective, to the degree that all sides of an issue are presented in the editorial. The key to objectivity is research. The editorial writer should arrive at a subjective viewpoint through objective research.

Research

Writing an editorial or an opinion statement is easy. However, writing an opinion that will sway others requires thorough research on the editorial subject.

Compile as much information as possible before writing the editorial. Read books, magazine and newspaper articles about the topic,. interview people who know a lot about the topic. You should know more about the topic than most readers after your research is done. You'll know the good parts of the point of view and the bad parts. You should anticipate what an opponent to the point of view will say, and address those areas in the editorial.

Presenting opinion

Avoid references like "I think," "we feel," or "as I see it" in editorials. These words indicate the editorial is the opinion of one writer, and that its conclusions are not based on research. Remember the editorial is written to support command objectives. It should be anonymous and reflect the views of the command. When you express opinion, be sure your logic is correct. Conclusions must be drawn from stated facts. Your editorial's effectiveness depends on your reasoned argument.

Look at the following examples:

Poor "I think that NCOs should spend more tie listening to soldiers and trying to help them solve their problems."

Better "NCOs are charged with taking care of soldiers. One way of doing this is for NCOs to spend time listening to soldiers and helping them find solutions to their problems."

Presenting all sides

Include all sides of a topic to make it credible. Sometimes it will be like having an argument with yourself. If you find you lose the argument, it's a good idea to select a different topic. Avoid topics on which you have strong views -- unless you're sure you can present a fair, unbiased appraisal of the issue.

Attributing facts

Identify examples and sources fully. Remember that the reader may not have the same background you do and may not know the same people or references. However, too many references may bog down the reader.

While the editorial is an "opinion piece," it must be based on facts. Those facts should be easily identified. If you use facts that are not common knowledge, be sure to attribute your information.

MAINTAINING SECURITY, ACCURACY, POLICY AND PROPRIETY

As with all Army journalism, editorial writing must conform with the principles of SAPP -- security, accuracy, policy and propriety.

Security

Operational security is a must in the Army. In addition to classified information, the editorial writer must be on the lookout for sensitive information. In an editorial you may provide information to potential enemies without realizing it, Think security, especially when you are write about unit strengths and capabilities or about plans for exercises and operations.

Accuracy

Accuracy is a must in all journalistic writing. For the editorial writer to maintain credibility, he must ensure the facts on which the editorial is based are correct.

Policy

Basic public affairs policy is spelled out in Army Regulations 360-5, Public Information, and in 360-81, Command Information Program. In addition, editorial writers must be aware of the Army's policy to protect the privacy of individuals.

Propriety

Propriety is doing what is right or proper. As an editorial writer it is your responsibility to ensure that the editorial is in good taste and doesn't violate the sensitivities of your readers.

THINGS TO AVOID IN EDITORIALS

There are several elements that you should avoid in editorials:

- o vulgarity
- o obscenity
- o lewdness
- o gore
- o perversion
- o excessive violence
- o information which holds the service or its members up to ridicule

COMMENTARIES

Commentaries usually are a recurring portion of the editorial page written by one writer, who takes readers on a verbal trip to get readers to think and be aware of their surroundings and other people.

The commentary is informative and tries to influence. It offers insightful, colorful and sometimes humorous entertainment. Well written, they can often make an editorial point quicker and more effectively than a dry, somber piece on the same subject.

PRACTICE EXERCISE

LESSON 5

SUBCOURSE NO. DI0240

WRITING EDITORIALS

INSTRUCTIONS:

Review the material in this lesson. Answer the questions below by circling the "T" or "F" next to each question. Compare your answers with the answer key on the next page.

- T F 1. It's okay to write an editorial on subjects that discredit the Army or your post, provided the civilian press publicizes the matter.
- T F 2. Informative editorials use argument to sway readers to a point of view.
- T F 3. The editorial writer should arrive at a subjective viewpoint through objective research.
- T F 4. When you express opinions in an editorial, you can voice your own opinion with phrases such as "we feel."
- T F 5. In addition to conforming to Army policy, editorial writers must also be aware of the Army's efforts to protect the privacy of individuals.

ANSWER KEY

PRACTICE EXERCISE

LESSON 5

SUBCOURSE NO. D10240

WRITING EDITORIALS

1. False (Page 34)
2. False (Page 35)
3. True (Page 36)
4. False (Page 37)
5. True (Page 38)

LESSON SIX

EDITORIAL CONSTRUCTION

46Q Soldier's Manual Task: 214-176-2422

OVERVIEW

LESSON DESCRIPTION:

In this lesson you will learn about the four parts of an editorial, the different approaches to editorial titles and the three types of conclusions most commonly used in editorial writing.

TERMINAL LEARNING OBJECTIVE:

ACTION: Recognize the four parts of an editorial, understand the various approaches to developing editorial titles and identify the three most commonly used types of editorials.

CONDITION: You are given the material presented in this lesson.

STANDARD: Perform all the duties described in this lesson.

REFERENCE: The material contained in this lesson was derived from:

STP 46-46Q14-SM-TG, Journalist
DINFOS Journalism Handbook

EDITORIAL CONSTRUCTION

INTRODUCTION

Editorials have four parts:

- o title
- o lead
- o body
- o conclusion

The title and lead -must grab the reader's attention and hold it long enough to get him into the body, which is the real meat of the article. The conclusion helps direct action or summarize the argument or point of view.

TITLE

The title serves as the headline for your editorial. The title should attract reader attention. It can also indicate the subject of the editorial. The title can be constructed in normal subject-verb-object form like other headlines, but --unlike news headlines --it may also be in label form without a verb.

Some editorial titles do not indicate the subject, but tease the reader into reading the editorial to learn more about it. For example, an editorial about venereal disease may have a title, "How did it all start?" Or an editorial about acronyms might have a title like, "FDR started it all."

The following list gives you a start in developing a variety of approaches to editorial titles:

- o Label or descriptive --a simple phrase title giving the subject of an article. These titles may not generate much reader interest unless the subject itself is interesting or provocative.
- o Striking statement --a brief phrase or sentence designed to provoke reader interest such as "Smoking can kill you, even if you don't smoke!"
- o Quote --a short, notable quotation, taken directly from the text. These usually center on the main point of the article. For example, "I have a dream."
- o Parody or literary allusion --a take off on some literary work, quote, movie or well-known saying. Just make sure the

majority of readers will easily recognize the reference, such as, "Give me liberty or give me breath. "

- o Alliteration --a phrase or sentence with words repeating the initial sound. (EXAMPLE: wet and wild)
- o Question --a device used to arouse the reader's curiosity or interest with an important issue or light twisting of a common phrase. Be careful when using a question title not to use a question that can be answered with a simple "yes" or "no," or "I don't care."
- o Direct address --talks directly to the reader, is usually a command or request.

LEAD

The lead indicates what is to come in the body of the editorial. The editorial lead is not limited to one sentence. It may consist of more than one paragraph. Unlike the news lead, the editorial lead does not have to summarize the article, or include the important W's and the H. The tone of an editorial is set by the lead. You can build leads for editorials around any of the title types that help explain or introduce your point of view. The lead should entice the readers much like feature leads do. Leads are usually written after the outline for the body of the story is developed. By knowing how the editorial will be structured, you can design a lead that more effectively "grabs" or pulls the reader into the body.

BODY

The body is the meat of the editorial. It contains the support for your position. The reasons the reader should agree with the editorial are contained in the body. The body of an editorial represents the largest amount of information. Unlike straight news writing (important facts first and significant details in descending order) editorial writing offers the essence of the article in the body.

Your first step in developing the body is listing the main points the editorial will cover. From these points you can often develop an outline for the body. This outline guides you through the body and helps you in organizing the lead and conclusion of the editorial.

Whatever method or purpose you use,. the title, lead, body and conclusion must flow from one to the other in logical order, with a definite purpose. Don't trick the reader by starting with a joke and ending with a serious call to action. Don't pose a problem without offering some kind of solution. Don't attempt to change a reader's point of view or to gain

acceptance of an idea or policy with poorly researched, haphazardly organized material.

CONCLUSION

In an editorial written to persuade, the conclusion wraps up and calls for action. In an editorial written to inform, the conclusion will put all the data into perspective and tie back to the main theme or issue. The entertainment editorial's conclusion might offer a humorous or insightful aspect saved just for that purpose.

The three conclusions most commonly used in editorials are:

- o Call for action --Ask the reader to do something or not to do something. Don't confuse this type of conclusion with making demands by using expressions like "In our opinion...." or "As we see it" or "We demand that...." Avoid the imperative voice. Don't give orders.
- o Summary --Summarize your main points. You have a point to make, so make it simple and clear.
- o Quotable --Leave the reader with a brief, appropriate, quotable statement. Use quotes to support a position or for rebuttal.

The editorial conclusion can be any combination of the three types. You will learn from experience how to match a conclusion with different types of editorials.

ADDITIONAL GUIDELINES

Other tips to keep in mind when writing editorials:

Don't embarrass your commander. Controversy may be appropriate in your editorial, but the conclusion should reflect command policy. Explain what is being done about a problem. Also, don't take on Congress, governmental agencies or the local community.

Avoid references like "I think," or "We feel" or "As I see it" in editorials. Remember editorials are anonymous and reflect the views of the command.

Include all sides of a topic to make it credible. Sometimes it will be like having an argument with yourself. If you find you lose the argument, however, it's a good idea to select a different topic. Avoid subjects on which you have strong emotional views --unless you're sure you can present a fair, unbiased appraisal of the issue.

Take a novel approach to commonplace subjects. Topics such as safety, the Combined Federal Campaign and drug abuse require innovative, descriptive, action-packed writing to entice and convince the reader. Reverse psychology may work in some cases.

Avoid editorial topics that are too political or unsuitable for your command level. Remember that your post commander does not set national defense policy. You cannot say editorially that a given deployment or military action is good or bad.

Make sure everything is clear to readers seeing the editorial for the first time. Can they easily figure out your meanings?

Identify examples and sources fully. Remember that the reader may not have the same background you do and may not know the same persons or references. However, excessive references will bog down the reader.

Make sure your logic is correct and direct. Your editorial's effectiveness depends on your clear, reasoned argument.

Avoid preaching or demanding that readers do something. Don't say, "Soldiers will..." or "Soldiers should.. ."

Profanity is not allowed in military newspapers.

Reduce statistics to conversational examples. Instead of just saying "54,135 square miles," also say "about the size of Illinois."

" Keep it short. Many readers tend to shy away from long editorials. Keep them crisp and interesting.

If you can support command policies with appealing editorials, you'll more likely get commander confidence, enabling you to tackle some of the sensitive issues on your installation. Don't look for dirt. Look for solutions.

Finally, editorials for military publications should meet the following criteria:

- o The editorial's topic must be appropriate, without violating or criticizing Army or command policy.
- o The editorial should be written to inform, influence or entertain the reader.
- o Ensure that the story includes four parts: the title, lead, body and conclusion.
- o The subject must be thoroughly researched.
- o All facts must be presented objectively, and all sides of the argument addressed.

- o Make sure that all facts that are not readily verifiable are attributed.
- o The story should be written so that it flows from one thought to the next in logical sequence.
- o Unnecessarily long words or sentences should be avoided.
- o The editorial and its subject matter must not violate security, accuracy, policy or propriety.
- o Ensure that the story is written without violating the Associated Press Stylebook and without errors in spelling, punctuation, grammar or syntax.

PRACTICE EXERCISE

LESSON 6

SUBCOURSE NO. DI0240

EDITORIAL CONSTRUCTION

INSTRUCTIONS:

Review the material in this lesson. Answer the questions below by circling the "T" or "F" next to each question. Compare your answers with the answer key on the next page.

- T F 1. The lead serves as the headline of your editorial.
- T F 2. Editorial titles must indicate the subject.
- T F 3. Alliteration is a brief phrase or sentence designed to provoke reader interest.
- T F 4. The body is the meat of the editorial.
- T F 5. The intent of the conclusion of an editorial written to persuade is a call for action.

ANSWER KEY

LESSON 6

SUBCOURSE NO. DI0240

EDITORIAL CONSTRUCTION

1. False (Page 44)
2. False (Page 43)
3. False (Page 44)
4. True (Page 45)
5. True (Page 45)

FORWARD TO APPENDICES

The following stories have been reproduced as appendices to illustrate the effective use of the key elements of feature stories and editorials.

Appendix A, **"Air Force engineers fire feathered fodder using new 'rooster booster' gun to test jet aircraft windshields"** uses the standard feature story format. It was written by Joan Carter, a former DINFOS student.

Appendix B, **"Mildred doesn't drink here anymore,"** a feature detailing the struggles of a recovered alcoholic, was written by Army Capt. John H. Colt.

Appendix C includes two editorials, **"Mistakes are for learning,"** and **"You pay for vandalism."**

Appendix D contains another editorial which is informative and addresses a medical problem common among black men -- pseudofolliculitis, or ingrown beard. This editorial comes from the American Forces Press Service, a branch of the American Forces Information Service.

Appendix A

AF engineers fire feathered fodder using new 'rooster booster' gun to test jet aircraft windshields

An ironic teaser lead. The writer resisted some of the more ridiculous possibilities.

The thesis describes a serious problem. It shows the need for such testing. We know why this story is being told. Notice how the five W's and H are covered in these first four sentences.

The body includes data and explanation. Note the action verbs and concrete nouns. Note how the quotes are bright. Other material is paraphrased.

A wrap-up ending, simple and effective.

Chicken is on the menu at Arnold Air Force Station Saturday, but it won't be served in the dining hall. Instead it will be blasted out of a new "chicken gun" at 300 miles per hour in a special test of aircraft windshields.

The Air Force tests windshield strength because flying birds can damage them and endanger aircrews. Last year, 1,072 "birdstrikes" cost \$5.5 million in damages to 446 aircraft, according to the Bird Aircraft Strike Hazard team of the Engineering and Services Center.

The tests use chicken carcasses because experiments with water bags and simulated birds didn't give accurate data, said Peter M. Helmbock, project manager.

Willie F. Williams, the man who fires the gun, said, "Plastic chickens don't have the same consistency or bone structure as real birds."

The chicken gun, known as the "rooster booster," hurls chicken carcasses through a 33-foot tube at the windshield of a simulated cockpit. At 300 miles per hour the poultry projectiles smack the windshields with a force of five and one-half tons.

An open shed houses the high technology equipment used to measure the results of the blasts. Space-age pulsars throb their radio waves rhythmically at the carcasses in flight. Ultra-high-speed motion picture cameras record the birds' flights and impact.

These tests help engineers develop lightweight, transparent windshields able to withstand impact forces without breaking, shattering or excessive bending, Helmbock said.

Saturday's test will feature an instrumented mannequin for the first time. This life-sized test dummy will help engineers measure hazards to the jet aircraft crews.

The process has aroused some controversy, Helmbock said.

"I never thought we'd have so many problems with public opinion. The American Society for the Prevention of Cruelty to Animals was concerned about the use of real chickens," he said. "We finally worked out an arrangement they can live with."

Testing uses dead chickens culled by local chicken farmers, Helmbock said.

Lt. Col. Deborah J. Lowe, commander of the 923rd Engineering Squadron, said the chickens would be sold "as tough old roasters" if the Air Force didn't buy them.

"ASPCA finally gave us their blessing when we explained our program to them," she said.

Although these chickens will never end up on Arnold's dining hall table, they are useful. They help make flying safer so aircrews can enjoy their next chicken dinners.

Mildred doesn't drink here anymore

It's a Saturday afternoon and all around the Fort Harrison Golf Club happy young soldiers from the Troop Brigade are taking long pulls from frosted glasses of beer. They are listening to the juke box and enjoying a blessed afternoon off from their training week.

Pvt. 2 Mildred N. Adams has the same flushed expression as the rest. She is relieved, she said, that her first week as a basic journalism student at the Defense Information School here is over.

She taps a slender finger absently against her frosted glass as a "Men at Work" tune blares from the juke box. She smiles broadly at the antics of a young trooper at the next table.

But Mildred's glass is full of diet cola, not beer. And this day is special, like every other in her life since June 21, 1981. She has been sober since then.

Mildred Adams, 23, is a recovered alcoholic.

"I used to be ashamed to tell anyone. I thought I was the only person in the world who had the problem," she said.

She has been in the Army six months. She made no secret about her former drinking problem when she enlisted, Mildred said.

"I told the recruiter in Los Angeles that I was a recovered alcoholic," she said. "He looked me right in the eye, as if he knew something from personal experience, and he answered, 'Who isn't?'"

She said the recruiter was the first in a long line of Army people who would help her bolster a self-image that had been tarnished by two years of problem drinking.

During the normal medical examination process for enlistment into the Army, Mildred underwent an extensive psychiatric evaluation. She passed with flying colors, she said.

"It was one of the happiest days of my life," she said.

She is the daughter of a Chicago steel worker who was divorced from her mother when Mildred was in 4th grade.

She said she now realizes that much of her negative self-image had to do with the childhood pain of imagined rejection by her mother.

After high school, she went to Marquette University for a year. Soon disenchanted with college life, she decided to see more of the country, to live a totally independent life.

She left on a Greyhound bus for Los Angeles. When she arrived there on a muggy February morning she had only \$7 left.

"I had a friend there and she met me. I went out to find a job. The only one I could get was as a waitress working for tips in a diner," Mildred said.

She slept on a couch in her friend's apartment. They had different schedules. Mildred was alone at night, barely 20 years old at the time, and she was afraid, she said.

"That's when my drinking progressed," she said. "I would come home from work at night exhausted. But I couldn't sleep. I didn't have but one friend, and she wasn't around that much.

I started drinking to go to sleep at night."

After a year of living in fear and loneliness, Mildred began to realize she had developed a problem with drinking. She went to an Alcoholics Anonymous meeting.

"That was the beginning of a new me, a new life," she said.

She enrolled in a junior college in Los Angeles and studied music, art and general education subjects. She soon became interested in the ROTC unit on campus.

She said she liked the order, the precision and the discipline of the unit.

She had always enjoyed physical activity. At 5 feet 6 inches tall and 115 pounds, she thought she could compete in a military environment. She met the Army recruiter through her ROTC contacts and enlisted.

Basic training at Fort Ord, Calif., was the most formidable challenge of her life, she said.

"I was afraid and bewildered, which I guess is the common reaction to basic. But I had so much support in the AA meetings that I felt cut off in basic. I was afraid I'd slip," she said.

Nagging at the back of her mind all the time was the notion that she might fall, might fall back into a drinking pattern because of the stress of basic training, she said.

In her sixth week of basic training, she broke down and cried, she said. Her drill sergeant saw her and called her into his office.

She told him that she was a recovered alcoholic, that she was afraid, that she needed to attend the AA meetings for support.

"He told me that all I needed was self-confidence. He said he would be there every time it looked like I was going to stumble. He told me I was a good troop and he was going to see me through, that he would be the support I needed," she said.

"He never made it any easier," she said. "But he reinforced everything I did right. I owe him a lot."

Mildred took another sip of her diet cola, and smiled. Her long brown hair was combed out and she looked trim and fit in a pair of black jeans and a striped shirt. Her eyes are blue, expressive of a clear determination.

Becoming an Army journalist, she said, is the fulfillment of a dream.

"I had a secret desire to be a writer," she said. "I can hardly believe that I'm learning how to be one."

Her other hobby is music, she said, and writing songs.

But for now it is the Army and journalism for her.

"I feel very grateful. They could have said no to me back in L.A. They might not have taken a chance on me," she said.

Air Force Tech. Sgt. James A. Dowd, Mildred's public affairs instructor at the Defense Information School, summed up his own feelings about her.

"She has a lot of guts," he said. "She's open and honest about her former problem. If they gave medals for that kind of bravery, I'd put her in for one."

Mistakes are for learning

The following editorial is reproduced from the Sept. 2, 1983, Seacoast Flyer, attributed to Maj. Ronald A. Roye of Goodfellow Air Force Base, Texas. The editorial was distributed by the U.S. Air Force Air Training Command News Service. The information was taken from an editorial written by Ted W. Engstrom, president of World Vision International.

One obstacle we all face in attempting to reach our potential is the fear of making a mistake. Yet achievement is based upon failure, usually one failure after another.

After 700 unsuccessful experiments to develop the incandescent light, Thomas Edison encouraged his dejected assistants, "Don't call it a mistake, call it an education. Now we know 700 things not to do."

Mistakes. No one is immune. Yet when we look at ourselves, we tend to be mercilessly critical. We speak of ourselves as failures.

American inventor Charles Kettering once said: "You will never stub your toe standing still. The faster you go, the more chance there

is of stubbing your toe, but the more chance you have of getting somewhere." Which translates: When you don't know what to do, do SOMETHING!

Psychologists say that action—any kind of action—is a tremendous cure for depression, even if it's no more than a walk around the block.

Today is a good day to start believing you don't need to live a life of quiet desperation, fearful of any new challenges. You can begin to enjoy using and developing your gifts.

Fear of failure is no excuse for doing nothing. Remember, to do nothing for fear of making a mistake could be the greatest mistake of all.

Make today the day you begin to chip at that mountain of self-doubt. You can read books about how to do it. You can attend seminars. You can think about it until the cows come home. But only you can put mallet to chisel.

Remember, it's OK to stub your toe!

'Somebody' did it

You pay for vandalism

The following is edited from an editorial written by Spc. Steve Lawrence from the July 29, 1982, Fort Campbell Courier.

Mr. Somebody is a special breed of criminal at Fort Campbell.

The victims of almost every one of his crimes are you and I. A percentage of our tax dollar pays for Somebody's kicks.

Have you ever wondered why none of the post parks and outdoor recreational facilities have public restrooms? You can thank Somebody for that!

Somebody literally destroyed all the public restrooms on post. What stands in their places

today are portable toilet facilities, themselves targets of our anonymous vandal.

Ever wondered why so many signs on post are either missing, mangled or full of bullet holes?

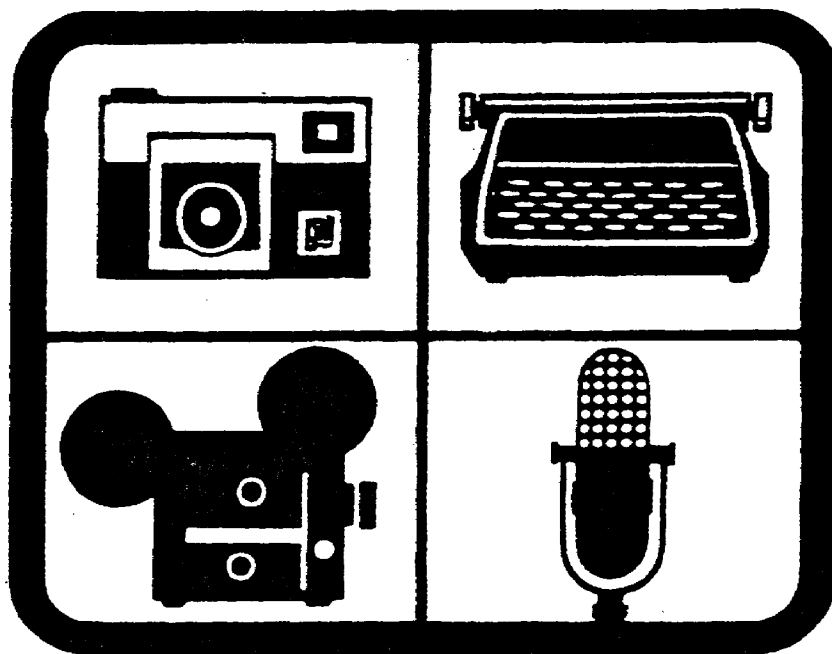
Or why the military police have had to beef up patrols around the Cole Park Golf Course, Pratt Museum and outdoor recreation areas?

The answer, plain and simple, is vandalism! Somebody's at it again.

Somebody ought to report these vandals. How about you and I?

PHOTOJOURNALISM I

PUBLIC AFFAIRS



THE ARMY INSTITUTE FOR PROFESSIONAL DEVELOPMENT
ARMY CORRESPONDENCE COURSE PROGRAM

**A
I
P
D**



PHOTOJOURNALISM I

Subcourse number DI0251

EDITION 9

Army Public Affairs Center
Fort George G. Meade, Maryland ity

5 Credit hours

Edition Date: July 1989

SUBCOURSE OVERVIEW

This subcourse contains five lessons, giving the trained photojournalist advanced information in photojournalism.

These lessons will provide an understanding of photojournalism, a knowledge of obtaining, recording and writing a photograph cutline, cropping a photograph for publication and establishing a field photographic darkroom.

There are no prerequisites for this subcourse; however, you may want to take Basic Photography for Journalists, DI0250, and TEC Lesson 570-214-1098-A, Develop Black and White Film.

This Subcourse reflects the doctrine which was current at the time the subcourse was prepared. In your own work situation, always refer to the latest publications.

The words "he," "him," "his," and "men," when used in this publication, represent both the masculine and feminine genders unless otherwise stated.

TERMINAL LEARNING OBJECTIVE

- Task: In this subcourse you will learn how to obtain and record cutline information, how to write a photograph cutline, how to crop and scale a photograph, and how to establish a field photographic darkroom.
- Conditions: You are given the material presented in this lesson.
- Standards: You will demonstrate a basic understanding of obtaining, recording and writing cutlines, cropping and scaling a photograph, and establishing a field photographic darkroom.

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LESSON ONE

UNDERSTANDING PHOTOJOURNALISM

46Q Soldiers' Manual Task: None.

OVERVIEW

TASK DESCRIPTION:

In this lesson you will learn basic precepts of photojournalism, how to isolate a subject, how to use lenses, and photographic composition.

LEARNING OBJECTIVE:

ACTIONS: Isolate a subject, use lenses and compose photographs for publication.

CONDITIONS: You are given the material presented in this lesson.

STANDARDS: You will be able to perform all the duties described in this lesson.

REFERENCES: The material contained in this lesson was derived from the following publications:

STP 46-46Q14-SM-TG
DINFOS Journalism Handbook
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UNDERSTANDING PHOTOJOURNALISM

INTRODUCTION

Photojournalism is a form of journalism in which a story or news item is communicated largely by means of pictures.

A well-written news story, containing all the facts, will suffice for telling the reader what happened, where it happened, who was involved, etc. But, this is only if the reader reads the story. Display elements must be offered to attract the reader's attention to the story, such as headlines, artwork and photographs. By sheer impact, a good photograph will attract a reader's attention faster than most headlines or art work. In addition, it reinforces the information contained in the written account or presents new information that is not written. Headlines are seldom remembered from day to day. News stories, too, fade from memory rapidly, but the "you are there" aspect of a good news photograph may live in one's memory for years to come. Remember the photograph of Jack Ruby shooting Lee Harvey Oswald? How about the headlines or even one sentence of the lead? The military photojournalist fulfills his mission as a vital member of the military establishment either as a photographer or as a photo editor. As a military photojournalist, his mission is to take, process and print photographs for publication.

The military picture editor has a mission which includes planning, selecting, editing and releasing photographs that tell the story of his service. It may also include the taking, processing, and printing of these photographs by himself or by working as a team with the photographer in the field.

TAKING PHOTOGRAPHS FOR PUBLICATION

If you are taking this subcourse you should already be familiar with the basics of photography. In addition to these fundamentals, three requirements are necessary before you can take a photograph for publication. You must:

- o know your subject.
- o know your publication.
- o know your target audience.

Know Your Subject

Millions of photographs are taken every year by amateur and professional photographers alike. Most photographers use people as their prime subject. Photojournalism is a form of communication that portrays people and their environment; therefore, your subject choice is relatively simple. Or is it?

Think of people you have known and select some of the differences between them. The obvious fact is that "all people are different." To photograph people, you must understand their individual differences and explore "in depth" the world in which they live and work. Not the world, but their world.

Some questions you will have to ask yourself and your subject are:

- o What does this man, woman or child do?
- o Where does he live?
- o Why do I want to photograph this subject?
- o What do I wish to show?

In people photography the list of questions is endless.

Know the Publication

Every publication is designed for a particular group of people. Just as we have individuals in life, we have individuals in publishing. Each publication has its own method of reaching viewers with the information that it is putting out.

Consider the possibility of getting the editor of "Good Housekeeping" magazine to use your photograph of tanks on an FTX...not a good idea. But the same photograph sent to "Army Times" might be published because you have chosen the correct outlet for your work. The best way of getting your photograph and text published is to submit them to the publication that can use them.

Know Your Target Audience

Each article in a publication is designed for an individual audience. Not only feature photographs and stories, but even advertising is slanted toward a particular reader. The photographer must know who is going to be reading or viewing his work (Target Audience).

Army subjects will be more interesting to soldiers if-the subject matter lends itself to their particular "world." Farmers read the almanac and "Farmer's Weekly." Soldiers read "Army Times" and the post newspaper (among other things). Generally, people look for newspapers, magazines, and articles that affect their lives or is related to their work.

With this in mind you must know the many different outlets for your work and slant each shooting session toward that "target audience." Armed with this information, you can communicate with viewers concerning timely subjects of interest to them.

Leafing through a magazine, do you stop and examine some photographs more closely than others? What makes us stop and look at a photograph more closely? It might be the subject matter, the composition, the color or lack of color that attracts us.

TWO VISUAL CONSIDERATIONS

Effective storytelling photographs will almost always share one quality -- simplicity. Large images, uncluttered backgrounds, dramatic action and the human element are a few of the devices available to the creative photographer. The application of these devices and the ability to speak clearly with the visual image should be the objective of all serious photographers.

Skilled photographers, when shooting photographs for publication, must know and use two visual considerations --stopping power and impact.

Stopping Power

Stopping power is the quality in a photograph that forces the observer leafing through a magazine to consciously notice a picture. When a photograph makes the reader stop and look it over, it has stopping power.

The majority of photographs depict ordinary people and events, subjects that are all too familiar. Without stopping power, photographs of such subjects would go unnoticed in a mass of pictures --and "unnoticed" in photography is a wasted effort, a worthless product.

Stopping power is one of the essential qualities of any good photograph. It is the device which a photographer uses to ensure that his pictures attract attention. Stopping power can be achieved by:

- o using an unusual treatment that makes commonplace subject matter graphically exciting.
- o recording only unusual subjects.
- o photographing unusual subjects in a graphically exciting form.

Commonplace subjects can be rendered interesting through the use of wide angle lenses, telephoto lenses, filters, screens and other devices. Distortion is one of a number of mechanical means of giving a photograph the "unusual" touch.

Unusual subjects make good photographs and are simple to produce due to their attraction, but unusual subjects are difficult to find.

A photographer must make commonplace subjects interesting to attract a viewer's attention. Simplicity is the key to success. The simpler and more direct, the clearer and stronger the stopping power. Try to isolate the subject as much as possible and eliminate all else. One of the few universally accepted principles for effective presentation of any subject matter is simplicity. For instance, imagine an all-black, large page. Within the page is a one-inch pure white square. In leafing through a magazine, would this get your attention? It should. It makes you stop, look, and wonder, and thus has "stopping power." Posters have surprising stopping power if the composition is simple and the lines and forms are clear, bold and strong.

When shooting for publication, you must try for "stopping power" in your photographs to cause the viewer to look at your work.

Impact in Photographs

Stopping power has gotten the attention of the viewer. Now you must give him something to view with interest and emotion, something to hold his attention.

"Impact" can be defined as holding power, stopping power that affects the observer visually and emotionally. Impact depends upon the content --the visual meaning --of the photograph. When a photograph has emotional stopping power or impact, it commands a deeper kind of attention. A photograph of a child crying, sitting in trash and rubble has stopping power, but when you stop, look, and begin to get a small measure of life in the ghetto, you are experiencing impact in photography. Stopping power makes you look, but "impact" gives you the emotional feeling.

Before you can create photographs with impact, you must first have a genuine interest in the subject. If you do not have a reaction to your subject, you won't produce work that contains any emotional quality. An observer seeing such work will remain unaffected.

To hold the viewer's attention, a photograph must have something to give. It must have meaning. It must be informative, educational, exciting, amusing, or inspiring. The meaning may constitute an appeal to the viewer's heart (like a March of Dimes poster), or it may have sex appeal. It may be the intent to deliberately shock the viewer into an awareness of some condition or situation by calling attention to it. A meaningful photograph is one of the most powerful instruments for arousing public reaction.

In photography, the cardinal sin is the meaningless photograph. Look for "stopping power" and "impact" in your photographs. Your job will be to portray people, Army people. Let your camera become an extension of yourself and consciously strive for meaningful photographs.

DEPTH OF FIELD

Depth of field is the instance from the nearest point of acceptable sharpness to the furthest point of acceptable sharpness.

When a lens is focused on a nearby object, the depth of field is short. If the distance setting is increased, the depth of field increases. This is why it is important to focus more accurately for nearby objects than for distant objects. When focusing a lens so several objects are at different distances, best results are obtained by focusing on a point one third into the distance between the nearest and farthest point. Depth of field always ranges from one-third before to two-thirds after the point of focus (see Figure 1-1).

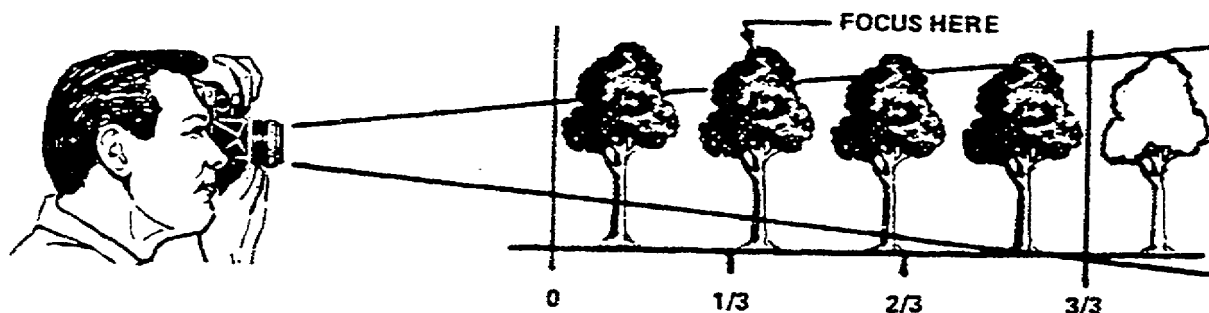


Figure 1-1. Depth of Field

You can tell what will be included in the depth of field by using the depth-of-field scale on your camera lens. In Figure 1-2 the aperture is set at f/8. The depth of field ranges from less than 10 feet to about 20 feet. At f/16 the depth of field would range from a little over seven feet to a little over 30 feet. Of course if the focus ring were moved then these minimum and maximum distances would change.

This scale is useful in presetting your camera for anticipated shots. When the action starts happening fast and furious you may not have time to focus.

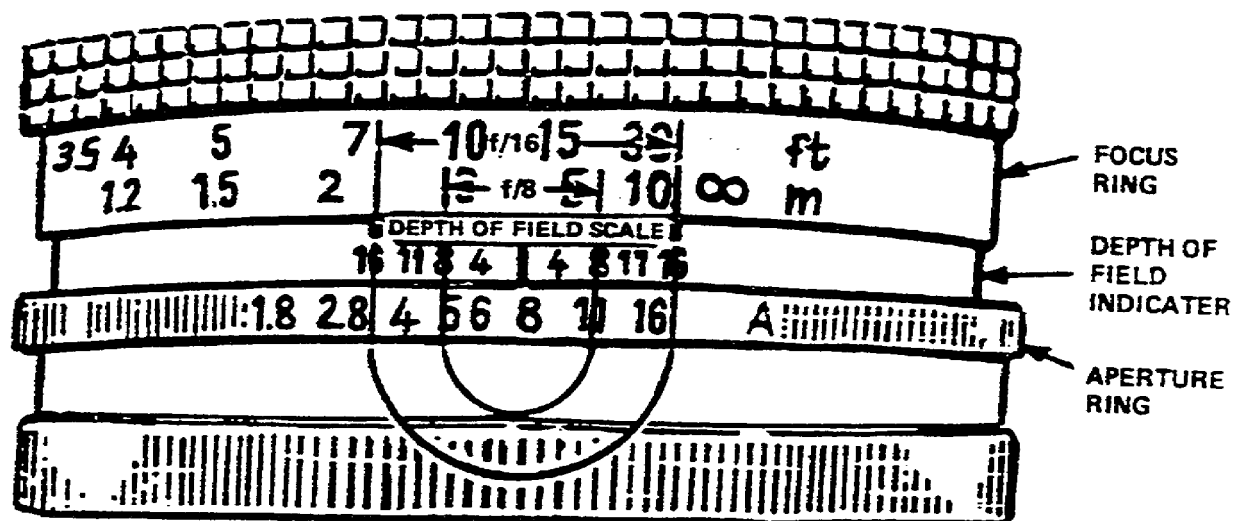


Figure 1-2. Depth of Field Scale

If you know that all of the action will happen between 10 and 20 feet than the camera should be set as in Figure 1-2. For more depth-of-field you would use a smaller aperture.

ISOLATING A SUBJECT

Consider an IG inspection with the company personnel in a neat formation. Everybody is in Class A uniform. SFC G.I.

Jones is the subject of your photograph. Using a standard 1/125 of a second and f/16, you photograph SFC Jones in formation. Does SFC Jones stand out from all the other people in formation? In looking at your photograph, can the viewer isolate SFC Jones from the rest? Probably not. You need to isolate him. Two popular methods for isolating subjects are "framing" and "selective focus."

Framing the Subject

Framing the subject gives the viewer "tunnel vision." His eyes automatically go to the subject in a photograph because

you have channeled his vision. Go to an old building and look through the windows. Do you look at the wood or at the scenic view outside? Let's hope you look at the scenic view. You can use this technique to direct a viewer's attention to your subject.

Frames can be made of anything in the area. The standard frame, at least in landscape photography, is the branches and leaves of a tree. Old as this technique is, it still works, and your prime reason for "being" is to get viewers to look at your work. Door frames, pipes, shelves and windows are common frames you can use to do your job (see Figure 1-3).

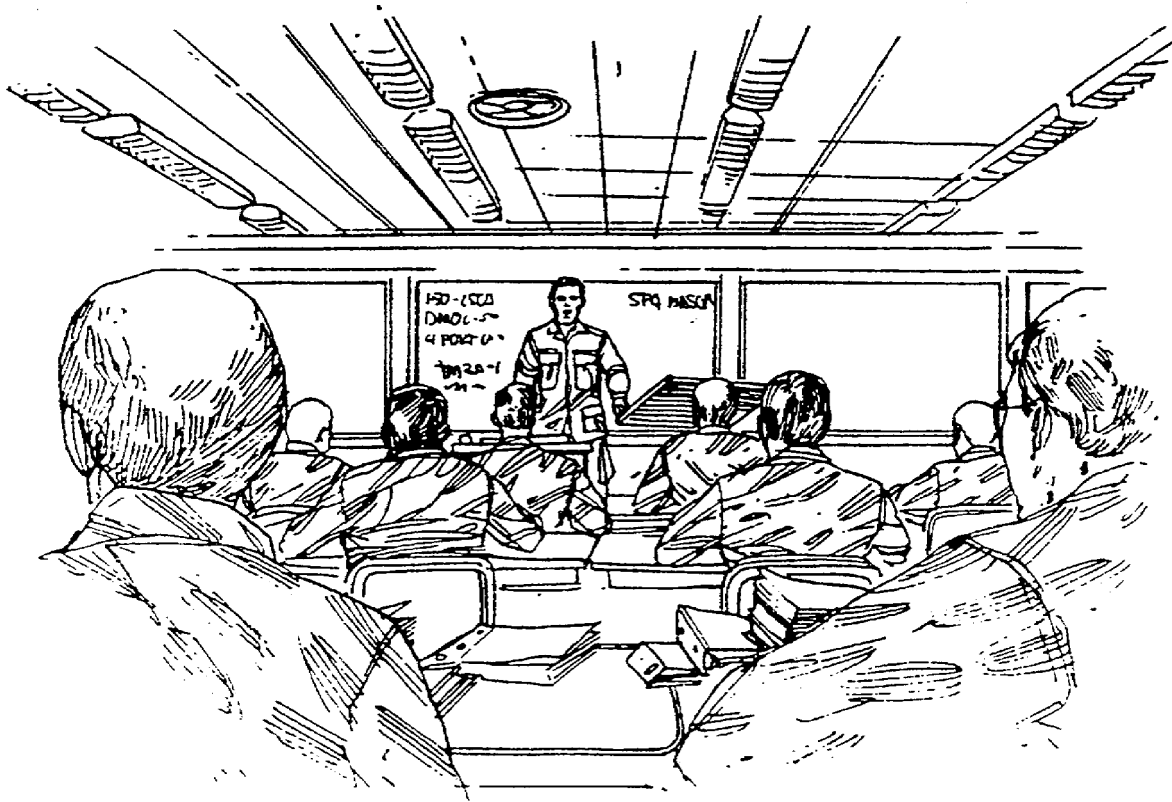


Figure 1-3. Framing

Use the frame technique when appropriate. It will work effectively to allow you to communicate with your viewers.

Selective Focus

Remember SFC Jones standing inspection? Under the circumstances you can't very well frame him. Probably the best method of isolating him is to use selective focus. Here's how:

SFC Jones is still in the formation, and you wish to reshoot him using selective focus. You focus sharply on SFC Jones and from your light meter reading choose a faster shutter speed which will allow you to open up the lens diaphragm, decreasing the depth of field. Again, you focus on SFC Jones. This time SFC Jones is in sharp focus, but the foreground people and background are fuzzy. Everything is still in the photograph but you have successfully isolated your subject. Now the eyes of the viewer will not wander, but will stay on the subject of your photograph.

Using another example, you shoot a photograph of a classroom. The instructor and all students are in sharp focus. But when looking at the photograph, the viewer is left to wonder what the subject of the photograph is. Using the selective focus technique you could isolate the instructor or an individual student, focusing the viewer's attention where you want it.

Framing and selective focus are tools for helping photographers direct viewer's attention to the subject matter.

LENSES AND PERSPECTIVES

When working with an interchangeable-lens camera, one of the photographer's variables is perspective. The photojournalist must be aware of the mechanics of so-called "wide-angle distortion" or "telephoto compression," which are distortions of perspective. He must understand how they influence his message.

Wide-Angle Lens

Some photographers select a lens focal length just for image size, without much thought given to perspective. There are times in photography when you will want to use a lens which will exaggerate perspective. Consider a low-angle photograph taken with a wide-angle (35mm and wider) lens of the front view of a 155mm Howitzer. The Howitzer muzzle looks awesome and the viewer gets the impression of strength and power, the exact message the photographer wished to give the viewer. Combined with the extreme depth of field of a wide-angle lens, the subject leaps from the realm of the usual to an interesting portrayal of the photographer's vision. A wide-angle lens is said to give apparent "wide-angle distortion" to a photograph.

Normal Angle Lens

The normal angle lens (50-55mm) is the "working lens" of the photographer. In retrospect, some photographers neglect the normal angle lens because they prefer the distortion and compression effect of other lenses. The normal angle lens is used effectively when the subject matter is not confined to limited areas. If there is room to move around the subject and placement is all that is required, a normal angle lens works effectively.

Telephoto Lens

Telephoto lenses (75mm and longer) are used effectively in "selective focus" situations because they give a more shallow depth of field than shorter focal length lenses. A telephoto lens creates "compressed perspective" which, when used properly, gives a viewer the impression of closeness.

A photograph of a line of traffic taken with a telephoto lens shows automobiles close to each other, and thus lets the viewer see the congestion of our highways. Telephoto lenses are used by the photographer to give compressed

Lenses are tools. Use them to portray your subject in an interesting way. Whether "wide-angle distortion" or "telephoto compression" is used, it is simply another method of holding the viewer's attention and interpreting a subject.

Use the lens that portrays your subject in the manner in which you wish to show it. Never use a lens because it is normal to do so. Let the lens enhance your story-telling capability. Rule your lens; do not let the lens selection rule you.

COMPOSITION

Every now and then you see a photograph that does not communicate, even though it is technically perfect. This is usually because it lacks a creative touch. You may also see a photograph which is creative but not effective because it lacks technical expertise.

The Nature of Composition

Photographic composition is the orderly or pleasing arrangement of the elements within the pictured area. The difference between a snapshot and a strong photograph is how

well the photographer applies the elements and principles of composition.

Learning the art of good composition is similar in many respects to learning any other skill or profession. A good photographer does not just record whatever he sees; he puts together or composes the picture. To do this the photographer either waits until all objects are properly related, or select a camera angle, or he places the objects in their proper relationship.

Good composition serves a purpose, sets a mood, and tells a story. Your camera will record whatever it sees, exactly as it sees it, without any consideration or feeling for what is happening, or why. It is up to you to capture the location, excitement, and attitude of the event. If you properly place objects in the picture, you will give the photograph more meaning by clearly showing the situation and reflecting the feeling of the occasion.

Composition is an elusive concept which involves such factors as camera position, selective focus, perspective, angle of view and proportion. The important thing to remember is that each is an element of choice, to be used the right way at the right time. If the correct elements are not included in a photograph, or if they are included but used incorrectly, the photograph will appear disorganized. When used correctly, however, the elements provide organization, the key to effective photography. Thus, the nature of composition is organization. It depends on you, the photojournalist, to organize your photograph by making a conscious decision to include certain elements or leave them out. Your success in applying the correct elements of composition will determine how effective and how well organized your pictures are.

The Purpose of Composition

The purpose of composition is to emphasize the subject of the photograph, present it in the most effective form and heighten the total effect of the picture. Knowing and applying the elements of composition will play an important role in your photojournalism efforts. Knowing the elements also will give you a set of general standards by which you can critique your work as well as the work of others.

THE PRINCIPLES OF COMPOSITION

Although there are no rigid rules to govern the correct composition of a photograph there are certain principles. You can make sure a photograph is both dynamic and

communicates what you intend if you follow these three principles: explore, isolate and organize.

Explore

Think about the word "explore." Exploring your subject is a comprehensive approach involving much more than a mere glance at the scene before snapping a picture. It is an in-depth approach, involving analysis of the light, awareness of the physical surroundings and knowledge of the particular requirements of the job.

Light

Light is one of the most important considerations in any photograph. You must always be aware of the nature and direction of what is called "incident light." This is the light that strikes the surface of the subject.

There are two types of incident light: direct light and diffused light.

- o Direct light. This light can come from the sun on a cloudless day, a flash, a lightbulb, or spotlights. It is almost always harsh and contrasty, casting strong shadows. Generally, it is not a photojournalist's favorite light because detail is frequently lost in the shadow areas.
- o Diffused light. This light is considered "soft" light because the contrast between highlights and shadows is relatively low and there is detail in the shadow areas. You will find diffused light outdoors on overcast days or in open shade, and from reflected light, such as bounce flash or light bouncing off the walls from the normal light fixtures.

The direction of the light can also affect the composition of the photograph. The basic directions are:

- o Frontlight. This comes from behind the photographer when he faces the subject and casts very few shadows. Because of the lack of shadows, the subject lacks dimension and appears flat.
- o Sidelight. This casts shadows and gives depth. In terms of direction, it is usually the preferred type of light.
- o Backlight. This comes from behind the subject and is the most contrasty. The side of the subject facing the camera is almost totally in the shadow area, but is surrounded by strong light.

- o Light from above. This is usually the least desirable because of the harsh unnatural shadows formed. For example, a photograph taken of a person outdoors in direct light at high noon would show the light striking the top of the head but leaving unwanted shadows in the eye sockets, under the nose and below the chin.

Physical Surroundings

A second area you must explore is the physical surroundings. As you look at the area around your subject, you must remember that, usually, neither the camera nor the subject must be fixed. Generally either or both can be moved, or at least the views changed.

In those instances when the camera is mobile and the subject stationary, such as a ship at dock or a statue, you can change the composition of your photography by shifting your position until the angle of view eliminates or de-emphasizes an unwanted area. You can change to a wide-angle or telephoto lens to alter the perspective, or you can use selective focus. That is, opening up your lens to decrease the depth of field until only the subject is in sharp focus.

When the camera is stationary and the subject mobile as when you are shooting an aerial show or field maneuvers, you can produce the best results by having enough advance information to know what to expect and taking more film than you think you will need. Remember, film is cheap. Don't miss a "million dollar shot" for want of "one roll of film." In a situation such as this you will also want a variety of lenses so you can better control the distance and space between you and your subjects.

When you find yourself in a situation where both you and the subject are mobile, your best bet is to be aware, as the opportunities for excellent shots come and go quickly.

Job Requirement

The third area you must explore is the actual job requirement. How will your photographs be used and when? These will often dictate where you should be during the event, how much coverage you should plan for and what type of photographs you will be expected to produce. For example, you are to prepare a feature picture story for the base newspaper on the military police assigned to your command. Here are some requirements that could influence your coverage:

- o The public affairs officer wants a "positive" image of the military police.

- o The provost marshal would like you to do some night shooting to show the military police are on the job around the clock.
- o The base newspaper editor says he can use "about six" good photographs.

As you can see from just these requirements, you know the approach you will take, the number of "good photographs" you want, and even the type of film you will use.

As you "explore" each shooting assignment, remember there are three areas to keep in mind: how the light can affect your subject, whether the camera and/or the subject are mobile and the actual requirements of the job. If you fully explore these areas, you will be following one of the three basic principles of good composition.

Isolation

Now that you have learned the first principle --how to explore your subject from the standpoint of light, physical surroundings and job requirements -- we come to the second principle: isolation. For your purpose, isolation is that means which the photojournalist applies to de-emphasize or eliminate those objectionable objects discovered while exploring the subject. There are many ways you can do this; the following is a partial list.

- o Relocate the subject. This is surely the easiest and most obvious solution if the subject is one that can be moved.
- o Change the surroundings. If the subject cannot be moved, then perhaps objectionable things around it can.
- o Fill your viewfinder. This simply means, step in close so that the subject will fill or nearly fill the negative, a very simple way to remove unwanted objects.
- o Use selective focus. Open up your lens to decrease the depth of field until only the subject is in sharp focus.
- o Alter the perspective. Take the photo from a different point of view.
- o Frame the subject. Use items such as branches of trees, door frames, windows or pipes to surround the focus of the photograph.
- o Use light. You can emphasize the subject and minimize other areas by lighting the subject only.

Keep in mind that these seven techniques for isolating the subject may-be used individually or in combination. In fact, you will often find it necessary to use more than one to lift your subject from a confusing setting. Also, you may find unique solutions to unique problems. The key is to keep in mind that your subject must not be lost in the other elements of the photograph. This is why isolation is one of the basic principles of composition.

Organization

At the beginning of this lesson, you will remember that the nature of composition was defined as organization, the orderly arrangement of elements within a photograph. Organization is the third principle which, if followed, can greatly aid in the composition of your photographs.

There are many ways to organize a photograph. Usually it depends on the creativity of the photojournalist and the effect he is trying to achieve. For example, a photograph which reflects speed or violence is not organized in the same way as one showing a peaceful or tranquil situation. The elements would be arranged in a different manner, and if you are not aware of the impact of the organization of these elements, you can confuse your viewer or create an impact that is the opposite of what you saw or planned.

There are no rigid rules governing the organization of elements in a photograph. Anyone who goes beyond the snapshot stage of photography learns that working with organization is almost like putting together a puzzle designed to go together in many ways. The following discussion of the organization elements and the impact they create will help you to understand why organization is one of the three basic principles of composition.

Illumination

Without light there can be no photographs. With light there can be both good and bad photographs. Amateurs, the snapshot shooters, consider light only as something that illuminates the scene. Their main concern is to have enough light to take a picture.

As a photojournalist, you must think of light in terms of quality and quantity.

Of course you must have enough light to expose the film. But you must attempt to control and use that light to accomplish other things. Light can be used to give a three-dimensional look to your photograph. It can also be used to de-emphasize unimportant aspects --like the background.

Cropping

There are a few problems with this element of composition, cropping. The main problem seems to be where to draw the line, and the experts do not agree on this. Some say "Crop severely and purposefully; do not make it look like an accident." Others say, "Approach this gently and with trepidation."

No matter what approach you take, you will soon find that cropping can have a dramatic effect on a photograph. As you progress, you will develop your sense of where to draw the line. Apply your own standards and develop your own style.

There are actually two methods of cropping: in the camera, and when enlarging the negative.

- o Crop in the camera. This is usually the best approach, as you will find it is difficult to make major corrections when enlarging the negative. No amount of cropping in the darkroom can save a part of the subject omitted in shooting, or shift light and shadows, or change a background.
- o Crop in the darkroom. The darkroom is a convenient place to "tighten up" a photograph by cropping minor extraneous detail when enlarging the negative. You can also enlarge a portion of the negative when the subject is too small in the negative.

Proportion

Certain scenes frequently dictate the best format. Almost without thinking you use a vertical format for tall things and a horizontal format for a panoramic scene. Other scenes, however, are more subtle and call for more thought on your part. It is then up to you to decide when to use a horizontal and when to use a vertical. There are a couple of things to remember about the impact that each format creates:

- o Horizontal format emphasizes the "right and left" in a picture, the horizon and horizontal lines within the scene.
- o Vertical format strengthens the impression of height and emphasizes the "up and down" and vertical lines in the scene (see Figure 1-4).

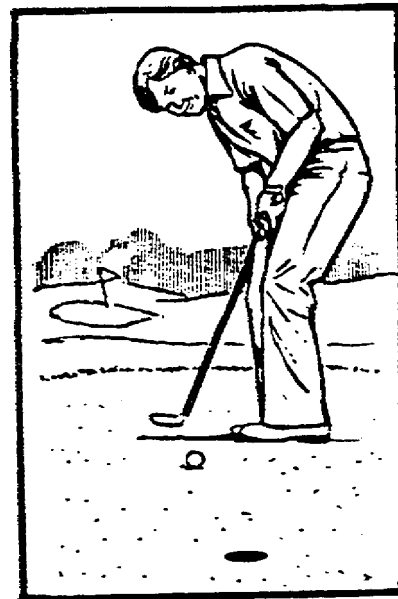
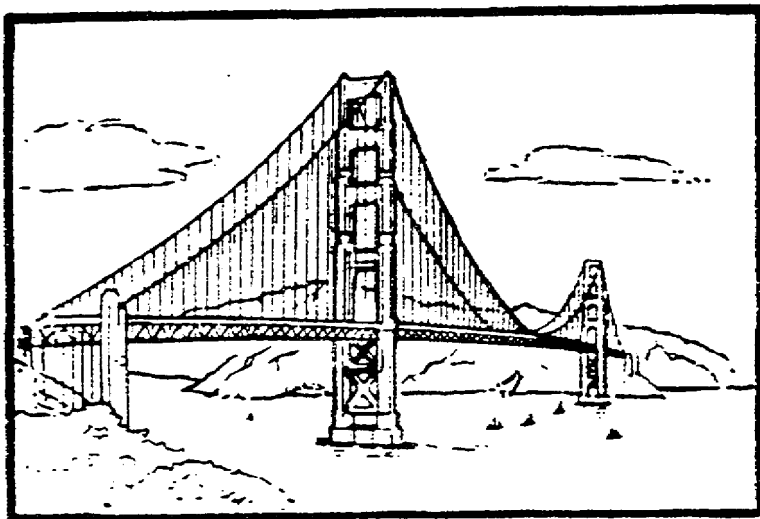


Figure 1-4. Horizontal and Vertical Formats

This is very basic, of course, but the point is you must decide the proportions of the final product at the time you take the photograph. You cannot wait till you reach the darkroom only to discover that you have to create a vertical print from a horizontal negative.

Angle of View

The angle of view from which you choose to take your photograph can make or break your photograph. It can add impact or destroy the message you want to communicate. One of the military's top photojournalists once declared part of his success was due to the fact that "I know my knees bend." He was referring to his willingness to get into just about any position to obtain the best angle of view. This sort of person does not hesitate to climb up on a desk (with permission, of course), stretch out on the floor, or even hang by his toes to compose his picture from the best angle.

You too, must remember that your knees bend. Do not settle for the flat-footed, camera-at-eye-level position that is the hallmark of the snapshot shooter. Search for and get into the position that provides the angle of view you need to communicate your message.

A word of warning: don't fall into the trap of believing that an unusual angle of view will automatically assure you of an award-winning photo. Remember, this is just one of many elements of composition that you must use to your best advantage.

Lines

Regardless of the content, most photographs consist of only two elements: shade and lines. In black and white photography, the shades are tones of gray including black and white, and the lines give form to these tones.

The strength, position and direction of lines in a photograph cause certain feelings in the viewer. Here are five types which you should be familiar with:

- o Horizontal Lines. These suggest stability and tranquility. These lines are static, motionless and can become boring if used excessively.
- o Vertical Lines. These lines evoke feelings of height, power, strength, and extend in a vertical direction. There is a certain amount of stability in a vertical line, but it is not usually considered an "active" line suggesting motion or action. However, it is not as static as the horizontal line.
- o Diagonal Lines. These run more or less from one corner to the opposite one and are considered the most dynamic of all lines. They serve as the most graphic symbol of movement and action.
- o Curving Lines. These lines suggest grace and motion, though it is a quiet, frequently rhythmic motion, Lacking the forcefulness of the diagonal line.
- o Motion and Force Lines. Lines of motion and force are actually lines placed in a photograph by the viewer. They occur, for instance, in a picture of a speeding car when the viewer's eyes travel ahead to determine the car's direction. They also occur in photographs when two people are looking at each other. The line of motion is created by the viewer following the "line of sight" from one person to the other. Although technically lines of motion and force are not graphic lines and are actually created by the viewer, they must be considered by the photographer as an integral part of the composition of the photograph (see Figure 1-5).

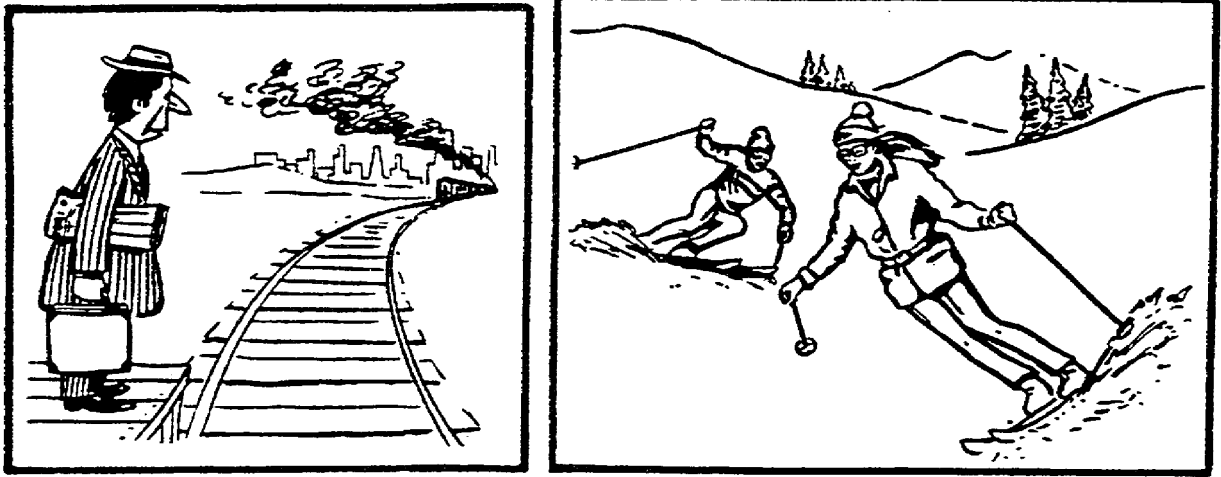


Figure 1-5. Lines of Force

Forms

There are four basic forms the composition of photography may take-If you are aware of these forms, then you will have more control over the message your photograph gives the viewer. These are:

- o Static. In this form, the graphic elements seem to be at rest. Through this form, the photojournalist can convey tranquil feelings such as restfulness, peace and dignity (see Figure 1-6).
- o Symmetry. You probably know that symmetry is a similarity of form or arrangement on either side of a dividing line or plane. The human body, a butterfly and a leaf are only a few of the many examples of symmetry. In photographic composition, symmetry can suggest perfection or harmony, or even boredom (see Figure 1-6).
- o Central. This form of composition gives a bull's eye impact since it draws the eye of the viewer to the center of the photograph. It is most effective when the major lines in the picture converge at or near the center.
- o Dynamic. This is the most active of the forms. It gives the impression of motion. Photojournalists use it to convey a feeling of action, speed, excitement, drama, violence, strong emotions or struggle. A photograph which is dynamically composed usually has few or no vertical or horizontal lines, and the subject will be made of primarily diagonal or tilting lines in an asymmetrical arrangement.

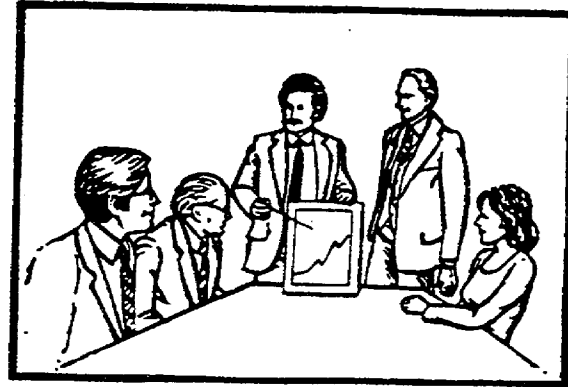
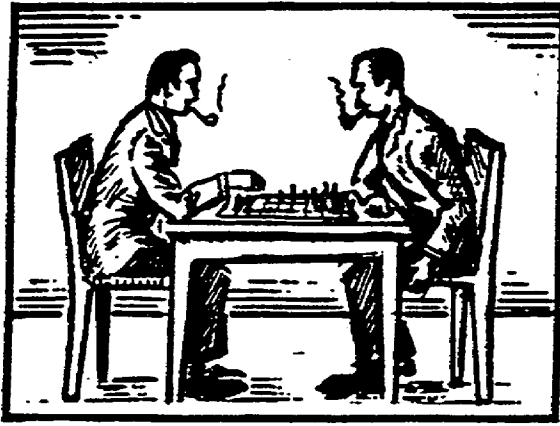


Figure 1-6. Forms

ACTION IN STILL PHOTOGRAPHY

Composition for Action

You can show motion in still photographs, motion that is real or posed. To get the feeling of motion in a still picture, the viewer must know what occurred the second before the exposure or what will occur in the next second. Place your subjects in positions that suggest motion is about to happen, is happening, or has just finished. A complete action can be divided into three parts --preaction, when the subject is getting ready; midaction, when the subject is in motion and cannot turn back; and postaction, when the subject has completed the motion and is regaining equilibrium.

Time of Change

The best action photographs are taken at the time of change from preaction to midaction to postaction. The first change, the point of tension, is the beginning of the motion. It is the time when the greatest stress and strain is applied. The effort of putting things in motion is evident in the tension of the subject's muscles and his facial expressions.

The time of the change from midaction to postaction is the point of release. At the point of release the effort is reversed. While momentum is carrying the motion forward, the stress and strain is being applied as a break. The effort by the subject at the point of tension or release provides the greatest expression of motion for a still photograph.

Midaction

Midaction is also a good time for photographing if the motion is obvious. Catch the subject in a position that would be impossible without motion. Example: When the subject is in midair or is leaning over so far he would surely fall down if it were not for his motion, or even when he is falling down.

Posed action

The subject need not stand still for posed action pictures. Re can rehearse and then move through the actions as you photograph.

Although posed action provides time for planning and composition, you record the truest expression by photographing the real thing at the scene while it's happening.

Adding Action

You can also add action to your photocomposition by using diagonal lines (leaning bodies), blurring part of the subject (hands or feet) as though they were moving too fast for the camera and blurring or placing the background out of focus as though you're moving with the subject.

Panning for Action

The technique used to blur the background while getting a sharp image of a moving object is called panning. To pan, you move the camera in step with the moving object so that the object is standing still with respect to the camera and the background or other stationary objects are in apparent motion.

Use the following procedure when panning:

- o Get a firm grip on the camera.
- o Plant your feet about 18 inches apart for a firm foundation.
- o Begin your motion before the exposure.
- o Swing the camera with the object so that the object remains centered in your viewfinder.

- o Move the entire top of your body in swinging the camera.
- o Use a smooth, steady motion.
- o Make the exposure during your motion.
- o Keep moving for a short time after the exposure.

The reason you start moving the camera before the exposure, and keep it moving until after the exposure, is to assure a smooth steady motion during the exposure.

STOPPING ACTION

Stop Action Photographs

Panning allows you to get a clear, sharp picture of a moving object; however, the background is blurred. To get both the moving and stationary objects in sharp detail on the same still picture you have to stop the action.

Photographically, you stop the action by using an exposure time so short that the moving object hardly moves at all during the exposure. Usually 1/125 is the slowest speed needed to stop normal human movements.

To take a good stop action photograph, you must have knowledge of the subject and the action so that you can visualize what will happen and plan ahead. You must be alert to follow the action and make the exposure at exactly the right moment, and you must quickly and automatically adjust and operate your camera.

Bright Light for Stop Action

You take stop action photographs with very fast shutter speeds so there is almost no time for motion during the exposure. Usually you increase the lens opening to compensate for an increase in shutter speed, but with stop action you often need the depth of field of small apertures. So opening up the lens is not always the best way to get the proper stop action exposure. When you operate with fast shutter speeds and large f-numbers, you must use fast film and bright lights to get sufficient exposure. For stop action, you need artificial lights, flood or flash, except in brilliant sunlight.

You can use electronic flash to stop action for a scene too dark to record on film without additional illumination. Use the proper speed to synch with the flash, and the exposure time will be the duration of the flash. Speed lamps or

electronic flash units have very high intensity illumination and the flash may be as short as 1/10,000 of a second or faster. You can also use flash units to get the effect of high shutter speeds when the scene is moderately illuminated.

PRACTICE EXERCISE

LESSON 1

SUBCOURSE NO. DI0251

PHOTOJOURNALISM I

INSTRUCTIONS:

Review the material in this lesson. Answer the questions below by circling the "T" or "F" next to each question. Compare your answers with the answer key on the next page.

- T F 1. Effective storytelling photographs will almost always share one quality -- simplicity.
- T F 2. Stopping power is the quality in a photograph that forces the observer leafing through a magazine to consciously notice a picture.
- T F 3. Telephoto lenses are not very effective in "selective focus" situations.
- T F 4. The two types of incident light are direct light and diffused light.
- T F 5. The best action photographs are taken at the time of change from preaction to midaction to postaction.
- T F 6. In photography, the cardinal sin is the meaningless photograph.
- T F 7. Depth of field is the distance from the lens to the point of nearest focus.
- T F 8. The depth-of-field scale is useful in presetting your camera for anticipated shots.

ANSWER KEY

LESSON 1

SUBCOURSE NO- DI0251

PHOTOJOURNALISM I

1. True (Page 4)
2. True (Page 4)
3. False (Page 10)
4. True (Page 12)
5. True (Page 20)
6. True (Page 6)
7. False (Page 6)
8. True (Page 7)

LESSON TWO

OBTAIN AND RECORD CUTLINE INFORMATION

46Q Soldiers' Manual Task: 214-176-1308

OVERVIEW

TASK DESCRIPTION:

In this lesson you will learn to use a photo caption log while shooting a photo assignment.

LEARNING OBJECTIVE:

ACTIONS: Record the Who, What, Where, When and Why to explain the action in a photograph, at the same time the photo is taken.

CONDITIONS: You are given the material presented in this lesson.

STANDARDS: You will know the duties of a photojournalist when obtaining and recording information while shooting photos. You will be able to perform all the duties described in this lesson.

REFERENCES: The material contained in this lesson was derived from the following publications:

STP 46-46Q14-SM-TG
DINFOS Journalism Handbook
AR 360-81

OBTAIN AND RECORD OUTLINE INFORMATION

INTRODUCTION

Every photograph intended for publication needs a outline to explain the action, and to identify the people, places or equipment shown. The outline is written to help everyone see the same thing --the action, words and meaning presented in a picture. Otherwise, a photograph will fall short of explaining itself; each person viewing it will develop a different interpretation of it. Outline writing is a specialized form of news, feature and sports writing. In most cases, you must tell the Who, What, When, Where and Why in a single paragraph.

WHO GATHERS OUTLINE INFORMATION

Because this information is sometimes impossible to gather later, it should be recorded at the same time the photo is taken. Recording this information is the photographer's responsibility. Even when a reporter is doing the story that will accompany the photos, the photographer is the one who should record the outline information.

HOW TO RECORD THE INFORMATION

The information may be recorded in a notebook, on a locally designed "caption log" or on DA Form 3315 (Photographer's Caption) . The method is not important, but a log may serve as a handy reminder of what information should be recorded, especially for inexperienced photographers. The log's columns for frame numbers, dates and times, names, equipment nomenclature, action, and type of event would help inexperienced photographers remember to gather more than just names and ranks. An example of a locally designed log is at Fig. 2-1, with an example of a filled out log at Fig. 2-2.

PHOTOGRAPHER'S NAME		DATE AND TIME
SUBJECT/SLUG		LOCATION
POC NAME AND PHONE		ROLL #
FRAME #	ACTION	I.D. (NAMES, EQUIP. LANDMARKS)

Figure 2-1. Example of a locally designed caption log.

PHOTOGRAPHER'S NAME DAVIS		DATE AND TIME 18 SEPT 89 1330
SUBJECT/SLUG FTX		LOCATION MARSHALL RANGE
POC NAME AND PHONE SFC GRASSO (GB)		ROLL # 1
FRAME #	ACTION	I.D. (NAMES, EQUIP. LANDMARKS)
1-6	DRIVING 61-MED. STAKES	PFC STEVE CARROLL, HHC Co., 757 FA. SWINGING HAMMER.
7-9	POTTING CAMO NETS UP (MIDIA SP)	PFC KEVIN LANE, A 6TY., AND SGT ERNIE STONE (GLASSES), A 6TY.
10-14	HEATING HRED WGR STONE	SSG KELLY KIRSCH (LEFT) + SGT DAWN TAYLOR BOTH PRACT. NURSES WITH 117TH FIELD HOSP.
15-A	N/A	AERIAL VIEW OF TENT CITY

Figure 2-2. Example of a filled out caption log.

WHAT TO RECORD

Keep in mind when recording cutline data that someone else besides yourself may actually write the cutline. Your notes should allow anyone to match up the photos to the notes and write a good cutline. At a minimum, the information recorded during the photo assignment should answer the following:

Who

Identify people in the photo by rank, full name, title, hometown, etc. Also note relative positions of people in the photo when there are more than one and if it's not obvious who's who by action, age, gender or rank. Sometimes it's helpful to note the clothing or physical characteristics of the people being photographed. Keep in mind that when you are shooting black and white film it will do little good to note "yellow T-shirt" or "red dress." But notes such as "Yankees T-shirt," "sunglasses," or "curly blond hair" would help identify the subjects. If the photo is of a crowd or large group --the start of a Fun Run or a crowd scene at the community fair, for example -- individual ID isn't necessary.

What

The "What" can apply to two things:

- o What's happening in the photo. The "what's happening" refers to the action of the photo. In the log or notebook, it may be necessary to only jot down a word or two to describe the action --"slicing cake," "mixing concrete" or "removing oil filter," for example.
- o What equipment is in the photo. Often unusual equipment will be included in a photo. The equipment should be identified. An M-16 rifle might not require identification, but an M-16 with an M-203 grenade launcher might. Radios, tracked vehicles, aircraft and watercraft should always be identified. Never guess or suppose you know the proper nomenclature; ask an expert on the scene. Sometimes minor differences in equipment models result in different nomenclatures, and readers love to point out such things to editors.

Where

Be sure to record the location of the action. Write down the name or number of ranges, street names, building names or numbers, etc. If there are landmarks, either natural or man-made, identify them as well. These might include rivers, lakes, statues, bridges, mountains, etc.

When

Record the time and date the photo was taken. This is especially important for "wild" or "stand-alone" art that will not be accompanied by a story.

Why

Unless it's obvious, record why an action is taking place. Is it part of an annual FTX, a post basketball championship, or monthly awards ceremony? This is especially important for "wild" or "stand-alone" art that will not be accompanied by a story.

MATCH UP THE INFORMATION WITH THE PHOTO

The photographer should record the cutline information for each frame he shoots by noting the number in the frame counter on the camera or by simply writing in his log or notebook "Frame 1, 2, 3," etc. Obviously, if several frames are shot of the same subjects and action, it is not necessary to record the information each time. For example, several shots of the same person taking a PT test would not require you to record "running," "doing push-ups," and "doing sit-ups."

WHEN TO RECORD THE INFORMATION

You should record the needed information immediately after each shot or series of shots. Don't let subjects get away without getting the information. They will be hard or impossible to track down later, and you may forget who you shot or who was doing what in the photo if you wait until later. The exception would be sports or other activities where it is impossible to interrupt the action. In such cases, you should let the subjects know in advance that you will be taking pictures and will need to get identification as soon as possible after the event. Note uniform numbers, clothing or physical characteristics when the photos are taken, then get names afterward. Or, record information during breaks in the action.

WHEN SHOOTING MORE THAN ONE ROLL OF FILM

When more than one roll of film is shot on the same assignment, the photographer should number the rolls and correspond his log or notebook to each roll. The rolls can be marked with a permanent felt-tip pen on masking tape attached to the film canister. You can also write "Roll 1," "Roll 2," etc. on a page in your notebook, then take a picture of the page after you load a new roll of film. When you develop the film, your first frame should be of the notebook page with the roll number written on it.

SPORTS PHOTOGRAPHY HINTS

Sometimes film can be identified as Roll 1 or Roll 2 by taking pictures of clocks or scoreboards during the shooting assignment. This technique is especially handy when shooting sports. After photographing a key play, the photographer can quickly-shoot a picture of the scoreboard to record the score and at what point in the game the play occurred. When shooting team sports, it is also a good idea to get a copy of rosters or lineups that match names with uniform numbers to submit with the photos to the editor or supervisor. Be sure to have a coach verify the numbers and names are correct, though. Often programs have misspelled names or incorrect uniform numbers.

FILING OUTLINE INFORMATION

After the photos are printed, the outline information should be filed permanently with the negatives or contact sheets.

PRACTICE EXERCISE

LESSON 2

SUBCOURSE NO. DI0251

OBTAIN AND RECORD CUTLINE INFORMATION

INSTRUCTIONS:

Review the material in this lesson. Answer the questions below by circling the "T" or "F" next to each question. Compare your answers with the answer key on the next page.

- T F 1. Cutline information should be recorded on a caption log, notebook or DA Form 3315.
- T F 2. The photographer should record the cutline information because he will always be the one to write the cutline.
- T F 3. The "what" can apply to more than just what's happening in the photo.
- T F 4. The best source for verifying names and uniform numbers is the program guide.
- T F 5. When shooting more than one roll of film you should keep track of them by folding your notes and putting them in the film canister.

ANSWER KEY

LESSON 2

SUBCOURSE NO. DI0251

PHOTOJOURNALISM II

1. True (Page 28)
2. False (Page 30)
3. True (Page 31)
4. False (Page 33)
5. False (Page 32)

LESSON THREE

WRITE A PHOTO OUTLINE

46Q Soldiers' Manual Task: 214-176-1309

OVERVIEW

TASK DESCRIPTION:

In this lesson you will learn to write a cutline for a photograph.

LEARNING OBJECTIVE:

ACTIONS: Write a four-part formal or normal cutline that identifies the people, equipment and landmarks in the photograph.

CONDITIONS: You are given the material presented in this lesson.

STANDARDS: You will know the duties of a photojournalist when writing a cutline. You will be able to perform all the duties described in this lesson.

REFERENCES: The material contained in this lesson was derived from the following publications:

STP 46-46Q14-SM-TG
DINFOS Journalism Handbook
DINFOS Public Affairs Handbook
AR 360-5
AR 360-81
AP Stylebook and Libel Manual

WRITE A PHOTO OUTLINE

INTRODUCTION

In the previous lesson, you learned how to gather and record outline information as you took your photographs. In this lesson, you will learn how to use that information to write outlines.

Outlines are the reader's anchors, the only sources of common information to tell all your readers what's happening in a photograph.

THE FOUR-PART OUTLINE

At times, the words "outline" and "caption" have been used interchangeably, but it's important to draw a distinction between them.

A outline has four distinct elements, all of which must be addressed: identification, action, background and credit. The caption usually deals only with the action taking place.

At times, the caption may be just a "mini" or "skeleton" headline, or short line of type beneath or near a picture, giving just enough information to describe what's going on in the shot. At other times the caption goes between the photo and the larger outline.

Here, we will dwell on the formal, four-part outline, its content, its placement and a bit of typography.

Identification

The first sentence in the outline, called the action sentence, should identify people, equipment, landmarks and location in a photograph.

- o Equipment. Identify equipment that is not familiar to most of your readers. Most readers know what an M-16 looks like, so you don't need to identify it. However, if the M-16 has a grenade launcher attached, you may need to identify it as an M-203 Grenade Launcher in the action sentence.
- o Landmarks. The identification of significant inanimate objects such as buildings, mountains or lakes in a photograph should be included in the action sentence. This is especially necessary if the landmark cannot be readily identified from the photograph. For instance,

most people know what the Statue of Liberty looks like if they see it from top to toe. However, a photograph of a soldier looking out of the observation deck in the statue's crown will require identification of the statue.

- o Location. If your cutline is not destined for an external publication (and therefore will not begin with the dateline), you should include the location of where the photograph is taking place in the action sentence. We will talk more of datelines later.
- o People. Identify people by rank or title and first and last name (the middle initial is usually not needed). Give enough identification to identify who's who in the sentence, describing those directly involved. Save long, detailed titles and descriptions for later sentences to avoid a cumbersome action sentence.

There are several ways of identifying more than one person in a photograph. They are as follows:

- o Position identification. Whenever a specific position identification is necessary, simple methods prove the most effective. Identify people with (left) or (right) or (center), or (from left). Give position identification when a person is first mentioned. Some publications will use (l.) or (r.) rather than spelling out the words left and right. Be consistent with your style throughout your publication.

EXAMPLE: Spec. David Smith (left) and Spec. Ralph Jones march across the finish line at the end of this year's annual Fort Jackson 25-Mile Road March.

- o Contrast. Common sense tells you that in a picture showing an Army male and Miss America, you don't need to say who is who. Similarly, in a picture showing a general pinning an award on a sergeant's uniform, when both ranks are clearly prominent, you don't have to say, "Gen. Myers (left) pins..." Clearly visible rank insignia, gender or age differences usually won't need a list of the positions of the people involved.

EXAMPLE: Julia Henderson, 3, daughter of Sgt. Henrietta Henderson, shakes the hand of post commander Maj. Gen. Sam Donaldson at the opening of the new Davis Child Development Center.

- o Obviousness. Obviousness takes contrast a step further. Portions of the photograph will make it unmistakably clear who is doing what.

EXAMPLE: Choo-Choo the Clown hands a balloon to disabled veteran Cliff Debuque during a recent visit to the VA hospital.

- o Action. This form of identification goes by the action being performed. A picture with one person throwing a football and another getting ready to catch it needs no position identification to tell who is doing what.

EXAMPLE: "Jumpin'" Joe Harris throws a 30-yard pass to Hogs teammate Willie "Hands" Wilkerson to win 17-14 and qualify for the playoffs in this season's Orange Bowl.

- o Elimination. Position identification will reach a point that allows identification by elimination. When three people are featured in a picture, and two have already been identified, the third's name can appear with no designation as to position. His identification will be obvious by elimination.

EXAMPLE: Sgt. Jim Carver (kneeling), Sgt. Andrew Anderson (sitting) and Sgt. Tony Guccione read a map in preparation for the upcoming Common Task Testing.

Pictures showing large groups must be handled on an individual basis. Impersonal identification may be necessary when discussing a "team" or "crew." Standard identification methods may prove adequate when writing a cutline for a picture in which only two or three people in the group are involved in the action. However, when the time comes to identify several people, the best method might be a simple (left to right) or (left to right, front row). Never cram a group listing of names into the action sentence.

There may also be situations when everyone in a picture need not be identified. They -may be far in the background, part of an audience, etc. The decision to identify someone will depend on involvement in the action, prominence in the photo, or a question you feel may arise in your reader's mind. In these cases, there is no all-inclusive rule. Just use your judgment, or ask your editor.

Action

Use the historical present tense to write the first sentence in a cutline, just as they are used in new headlines. Use verbs such as "runs," "walks," "plays," "presents," "shoots," etc. Do this because pictures, like paintings or sculptures, freeze a moment in time. Of course, the picture is now past tense, but the reader is viewing it for the

first time and the verb describes the action as if it's taking place now. The present tense adds immediacy. Compare the two following action sentences:

- o Army Pvt. 2 Alvin C. Klink swims through swirling flood waters to rescue six-year-old Wendy B. Flora.
- o Army Pvt. 2 Alvin C. Klink swam through swirling flood waters and rescued six-year-old Wendy B. Flora.

Which has the more drastic impact?

One problem that arises in using this verb tense is dealing with the "when" element. Notice the contradiction in: "John Terry slams a home run over the center field fence in league action Friday." Mixing tenses is not only a grammatical error, it's jarring to the reader. So don't use the "when" of a picture in the first sentence. Shift to the past tense immediately after the action sentence (Example: "The game was held at the post baseball field Friday.") The rest of the cutline should be entirely in the past tense.

Background

The third element of cutline writing is background information. This is the additional data necessary for complete understanding or perspective of the photograph. This information could take up one or more additional sentences. The amount of information necessary will depend on the picture's use, subjects involved, whether it will appear with a related story or stand alone, and how and where the picture will appear.

This part of the cutline should explain any of the W's or H that was not explained in the action sentence. This is a good place to put the "when" element to avoid mixing tenses in the action sentence.

If a picture appears in a military publication keep short your explanation of common military terms and equipment. If the same picture is to appear as a public news release in a civilian publication, a more detailed explanation may be necessary. Background information may be omitted if the photo accompanies a story that explains the photo. In this case, the cutline will consist only of the first sentence, a "skeleton" cutline.

Credit

Photo credit is the fourth element of a cutline. You should give credit to the photographer or releasing agency in the

final sentence of a cutline. The sentence should be separated by parentheses from the rest of the cutline, like this: (U.S. Army Photo by Staff Sgt. Henry J. Moran). In some publications, the photographer gets credit only in the masthead, and photo credit only appears with a picture when taken by a photographer not working for the publication. For releasing agency credit without the photographer's name the credit would look like this: (U.S. Army Photo).

Most publications use a blanket statement for consistency. Credit for a picture story may appear as a tagline on the main cutline (Photos by...) or as a small headline in the layout. Whatever method is used, photo credit should be addressed, and the style used should be consistent. Proper credit for pictures can also go a long way in fostering good relations with photographers and local photo labs.

Datelines

Datelines are used on external releases, and precede the action sentence in the cutline. Datelines contain the city, town or installation name (in all capital letters) and the state, country or territory where it is located.

EXAMPLE: FORT WAINWRIGHT, Alaska -- Soldiers from the 6th Infantry Division dig into a snowbank during Brim Frost 89 (U.S. Army Photo by Pfc. John Everest).

Be sure that "Fort" is never abbreviated in the dateline, and that the state is abbreviated (or not) according to the AP Stylebook.

Datelines may also contain the source of the story. The source would follow the city name, in parentheses.

EXAMPLE: NEW YORK (AP) -- Snow falls on the Varrazano-Narrows Bridge entrance near Fort Hamilton, N.Y.

Typography

When writing cutlines for use in your publication, pay attention to typography. When cutlines are set in a larger or different type face than body copy, pictures will show up better. Boldface 10-or 12-point type would offer a decent contrast in a publication using standard 10-point body type. Or, consider setting the cutline in Italic type. Something should be done, in any case, to set off the cutline, so the reader cannot confuse it with standard body type.

Cutlines may also have a boldface or all-cap "lead-in" to draw a readers attention.

EXAMPLE: THREE TIME WINNER -- Capt. Elwood Houndsberger captures the
Columbus Marathon for the third consecutive year with a time of
2:49.

Position

Cutlines may be moved around the picture for various effects or design requirements. They most commonly appear directly beneath the picture, set in the same column width as the photo. They may, however, appear alongside a picture, as a side cutline, for various design reasons.

The cutline should be set in block style, with left and right margins even with the sides of the picture.

PRACTICE EXERCISE

LESSON 3

SUBCOURSE NO. DI0251

WRITE A PHOTO OUTLINE

INSTRUCTIONS:

Review the material in this lesson. Answer the questions below by circling the "T" or "F" next to each question. Compare your answers with the answer key on the next page.

- T F 1. A cutline's four elements are identification, action, background and credit.
- T F 2. The first sentence in the cutline is called the "credit sentence."
- T F 3. You should use historical past tense when writing the first sentence of a cutline.
- T F 4. Datelines are used on external releases.
- T F 5. If a picture is to appear as a public news release in a civilian publication then you should keep short your explanation of common military terms and equipment.

ANSWER KEY

LESSON 3

SUBCOURSE NO. DI0251

WRITE A PHOTO OUTLINE

1. True (Page 38)
2. False (Page 38)
3. False (Page 40)
4. True (Page 42)
5. False (Page 41)

LESSON FOUR

CROP AND SCALE A PHOTOGRAPH

46Q Soldiers' Manual Task: 214-176-1'326

OVERVIEW

TASK DESCRIPTION:

In this lesson you will learn to crop and scale photographs to be printed in newspapers.

LEARNING OBJECTIVE:

ACTIONS: Crop a photograph to safeguard information or to eliminate unnecessary or distracting elements in the photograph using the Rule of Thirds and Cropping L's.

CONDITIONS: You are given the material presented in this lesson.

STANDARDS: Determine the cropped and reproduction dimensions of a photograph to within plus or minus .125. Scale a photograph using the diagonal method to within plus or minus .125. Scale a photograph using the proportional wheel method without error. Write a guideline for a scaled photograph to include, in order, the elements of column width, reproduction depth and percentage of enlargement or reproduction. You will be able to perform all the duties described in this lesson.

REFERENCES: The material contained in this lesson was derived from the following publications:

STP 46-46Q14-SM-TG
DINFOS Journalism Handbook
DINFOS Newspaper Production Techniques
AR 360-5
AR 360-81

CROP AND SCALE A PHOTOGRAPH

INTRODUCTION

Poorly cropped and improperly scaled photographs clearly point out a training weakness within a newspaper staff.

Cropping a photograph requires that you eliminate distractions, ensure the quality of composition within the photograph and that you properly frame the subject. When finished cropping, the center of interest should be clearly defined.

The cropped photograph then must be scaled to fit a hole in your newspaper design. Scaling a photograph is the act of enlarging or reducing a cropped photograph to fit a hole on a newspaper page. Scaling starts with at least three known dimensions: the cropped width and depth and either the reproduction width or depth. When a photograph is scaled, the depth is enlarged or reduced proportionately with the width, or vice versa. Scaling the photograph identifies an unknown dimension for the soldier, either the reproduction depth or width. A photograph is scaled before it is screened (the halftone dot pattern used for newspaper reproduction of artwork). Scaling is accomplished using either the diagonal method or the proportional wheel, or possibly an alternate method, the mathematical formula.

In this lesson, you'll learn to crop a photograph. You'll also learn to scale that photograph to fit a given space within a newspaper design.

CROPPING

Cropping a photograph is the act of eliminating unnecessary or distracting elements in the photograph, ensuring pleasing composition and the smart framing of the center of interest. This is done by trimming away parts of the photo from the right, left, top, bottom or all four sides. Photos are seldom used in publications just as they come out of the darkroom. There are many considerations involved in cropping a photograph.

SAFEGUARD INFORMATION

As a public affairs practitioner, your first responsibility is to ensure security, accuracy, propriety and policy are not violated. Army Regulation 360-5, Public Information, spells out the public affairs audiovisual policy.

The public information regulation reinforces the guidance that we must not compromise safeguarded information. Intelligence and counter-intelligence matters are a function of the G-2. Security matters are a function of the G-3. Seek guidance from the experts on questionable matters. If still in doubt about a subject matter, don't use the photograph. Ideally, journalists will have been trained to avoid secure or sensitive areas. If, however, there is a lapse of security and photos are taken in a secure area, that film should be turned in to G-2 for disposal.

Security

Some areas of concern in security include command post and field training exercises. During exercises, operations plans, maps and equipment can be easily compromised by a photographer. Access is usually limited and photographers are kept away from secure areas, but breaches of security may occur in the heat of battle. As the saying goes, operational security is everyone's business. When cropping a photograph for reproduction in the newspaper, be especially aware of the background areas that might reveal classified information. Remember, exercises test war plans, and those plans cannot be compromised.

Policy

Policy considerations are spelled out but are not limited to the provisions of AR 360-5. The Department of Defense and Department of the Army have release authority over certain types of information. Information on weapons systems, nuclear, biological and chemical warfare, controversial national and international subjects, and certain Army contracts will have to be approved for release. In overseas locations, local policies come into play. Photographs of antigovernment protests in your host country, for example, normally should not have been taken in the first place. If you allow the photograph to be published in your newspaper, no matter how good your cropping job, you may enrage the host country and your superiors. Policy considerations also include uniform violations, unsafe acts (e.g.--the soldier sleeping on a tracked-vehicle), and promotional activities favoring one organization over another (e.g. --Association of the United States Army publicity about the Non-Commissioned Officers Association).

The Privacy Act

Guidance regarding The Privacy Act is included in AR 360-5. The Act is designed to safeguard individual privacy. AR 340-41 implements The Privacy Act of 1974.

Propriety

Beauty pageant swimsuit competitions, a soldier in an embarrassing pose, and ethnic misrepresentations are but a few of the many propriety violations you might face. Although a photo editor should catch such violations during the process of photo selection, you also must check for violations in the cropping phase.

Accuracy

Make sure the photograph reflects reality. A photograph taken from the wrong angle or at the wrong time can, in fact, misrepresent the facts of the story. A road race taken at the finish line can show the second place finisher ahead of the winner, if taken from the wrong angle. A sneeze or facial twitch during a somber ceremony can make the subject look like a fool in addition to misrepresenting the story.

DISTRACTIONS

When cropping, narrow the cropped area to the center of interest as much as possible. Crop ruthlessly; enlarge generously.

Distractions come in the form of anything that takes the eye away from the center of interest and action taking place. It could be a spectator in the stands at a baseball game. It could be a student looking away from the teacher in a class. It could be anything that takes away from the purpose of the photograph. Eliminate everything that does not contribute to the photograph.

Try to limit the number of people in the photograph to three, or only those necessary to tell the story. When cropping people, do not crop them at the neck, waist, knees or other joints.

DEAD SPACE

The center of interest should be contained to avoid unnecessary dead space in the photograph. But in cropping out dead space, leave enough space to accommodate the action of the center of interest. If, for example, a car is traveling to the left in the photograph, leave room on the left for the vehicle to travel. Do not cut it off at the front bumper. The car needs dead space in which to travel. If the subject or center of interest is looking to the right in a photograph, you must allow enough dead space for him to

look into. However, many times too much dead space is left in a photograph. Too much background may make the center of interest get lost or not stand out.

Do not crop a photograph into a square shape. Square photographs are uninteresting and unappealing to the eye. Photographs should always be cropped into a rectangular shape, either vertical or horizontal.

The cropping marks are made at or near the corners of the photograph. A china marker normally works best when making your cropping marks in the borders of photographs. China markers allow you to make changes without difficulty and mess (see Figure 4-1)

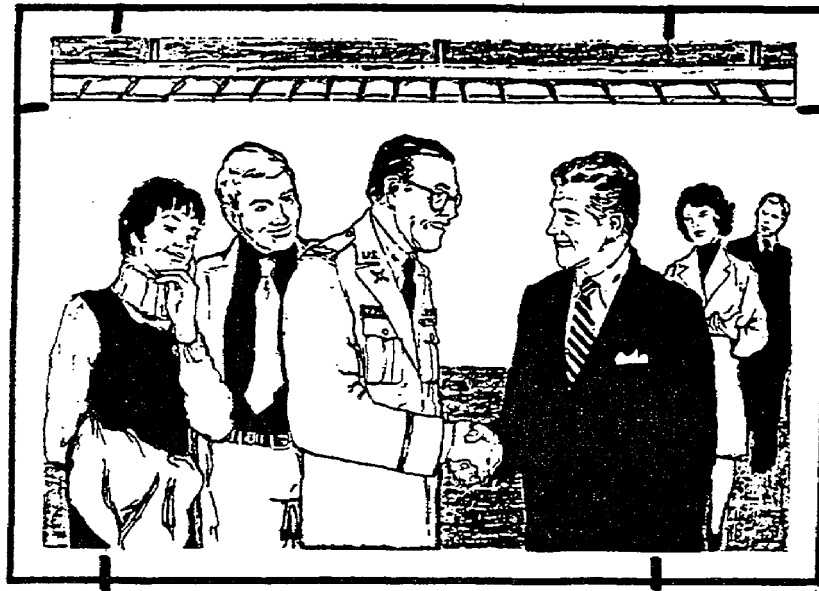


Figure 4-1. Cropping Marks on a Photograph

AESTHETICS

The aesthetics, or beauty, of the photograph should be improved by cropping. The Rule of Thirds, as shown in Fig. 4-2, suggests that the center of interest be roughly positioned at one of the four intersections created by equally spaced horizontal and vertical lines that divide the photo into horizontal and vertical thirds. If the subject is centered in the photograph, as is frequently done by amateur photographers, the photo is often static or boring.

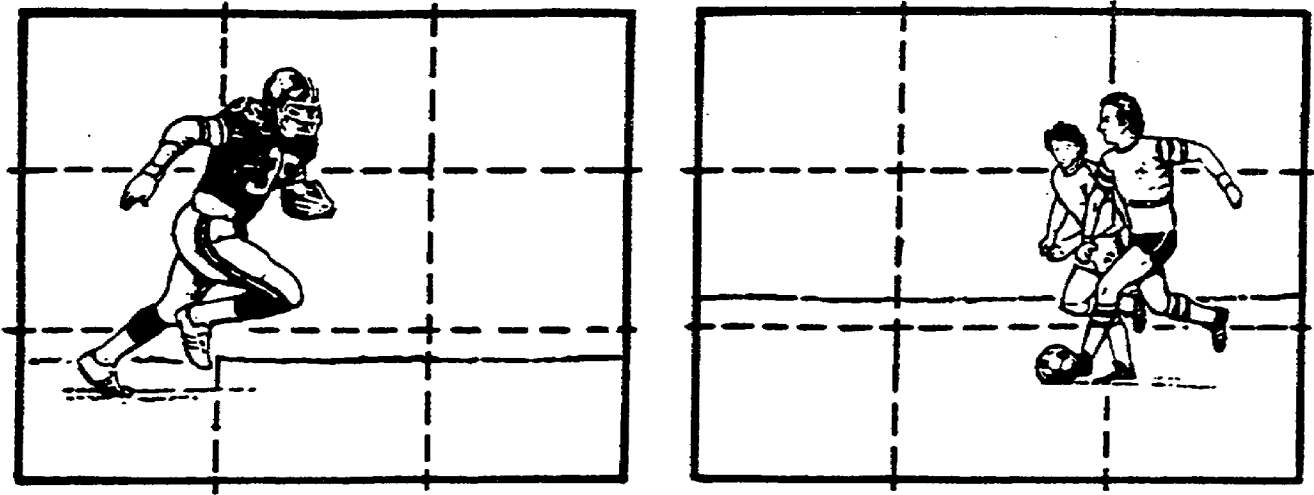


Figure 4-2. Rule of Thirds

Additionally, when considering the aesthetics, cropping should be based on movement of the subject, leading lines, lines of force, and other framing considerations. Leading lines draw the reader to the center of interest or action. Leading lines can be real, or implied or suggested. A tabletop, for instance, may lead to the center of interest.

SHAPES

The shape of the photograph also must be considered when cropping it. Normally, a 3: 5 proportion is most pleasing to the eye. Proportions of 2: 3, 3: 4, 4: 5, 4: 7 and etc. are acceptable proportions. Simply cropping a photograph square, 3: 3 in this case, ultimately leaves a newspaper page dotted with square blocks putting up little fight for attention. Square shapes are boring.

When considering the shape of the photograph, there are times when a strong vertical or horizontal will improve the look of a newspaper. Obvious examples where extreme horizontals and verticals work well include tall buildings, parades, travel photo features and many sporting events.

PHOTO WITHIN A PHOTO

Careful examination of a print may allow you to extract two or more reproduction-quality photographs from a single print. There may be two centers of interest or separate actions taking place that separately qualify as photographs. In a football game, an offensive lineman may be holding the star defensive end while a wide receiver catches a short

pass across the middle of the playing field. Both actions could be stand-alone photographs.

CROPPING L's

A useful tool when narrowing the photograph to its center of interest is the "cropping L." Cropping L's are L-shaped cardboard devices, often black in color, used to eliminate dead space. Placed over the photograph in the form of a rectangle, they can be adjusted to see the effects of cropping before a crop is actually made. An editor uses them to frame the photograph prior to cropping. (See Figure 4-3.)

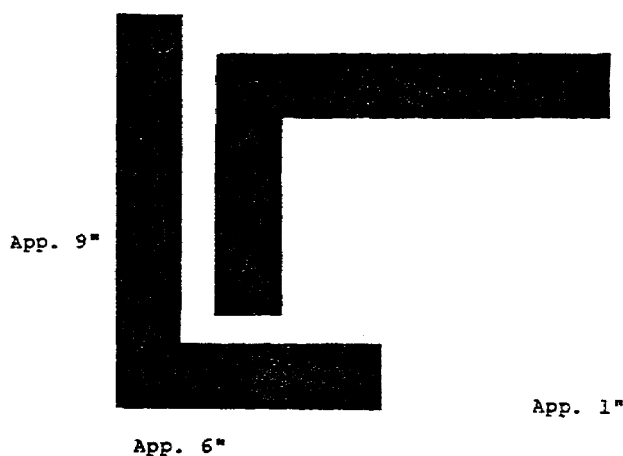


Figure 4-3. Cropping L's

PHOTO DIMENSIONS

Before you can scale a photograph, you normally will know three dimensions: cropped width, cropped depth, and reproduction width or reproduction depth.

Cropped Width (CW)

The width of the photograph in picas, columns or local unit of measurement after cropping has been completed. In scaling artwork, width is usually represented in picas, columns or the local unit of measurement. Width is not usually represented in inches. (This is because most other

horizontal measurements in newspaper design are in picas, columns or a local unit of measurement, such as ciccros.)

Cropped Depth (CD)

The depth of the photograph in inches after cropping has been completed. Depth is usually represented in inches, NOT picas or columns. (Again, this is because most other vertical measurements in newspaper design are in inches.)

Reproduction Width (RW)

The actual width of the photograph for reproduction. This is the predetermined space allotted for the photo before cropping or scaling takes place. The measurement usually is given by columns, 2 columns, 3 columns, etc. You must know the standard width of the column and alley, the space between the columns: one pica, one-eighth inch, etc. (See Figure 4-4.)

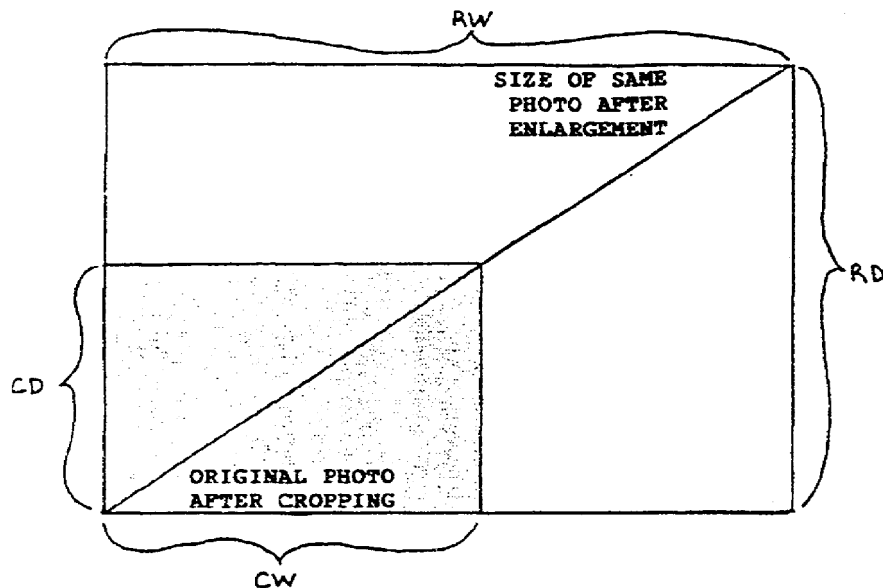


Figure 4-4. Photographic Dimensions

You will use the three known dimensions (CW, CD and RW) to determine the unknown dimension, usually the reproduction depth.

Reproduction Depth (RD)

The number of inches deep the photo will be after enlarging or reducing to fit in the space allotted for it on the newspaper page.

Many times you will have set aside a vertical space to fill on a newspaper page design. In such a case, you are using the cropped width, cropped depth and reproduction depth to establish the "unknown" reproduction width. This "backwards" procedure frequently is used in photo layouts where standard column widths may not apply.

SCALING

Scaling is the act of either enlarging or reducing cropped artwork to fit in a hole on a newspaper page. You cannot scale a photograph before you crop it, since you must first know the cropped dimensions. Once you know them, you can scale the photograph to snugly fit that hole. In scaling a photograph, you are trying to determine either the reproduction depth or the reproduction width. As you enlarge or reduce the photo to reproduction width, the reproduction depth will change proportionately. And vice versa. As you scale for reproduction depth, the reproduction width will change proportionately. There are two simple ways to scale the artwork to size:

- o The Diagonal Method
- o The Proportional Wheel

An alternate method of scaling is **The Mathematical Formula**, which will be briefly discussed later.

THE DIAGONAL METHOD

The diagonal method of scaling artwork is a mechanical procedure. This is the least accurate method of scaling. It does not require great mathematical skill or special tools. (Figure 4-5 is an example of diagonal scaling.)

To use this method, follow these steps:

1. On a separate sheet of paper, draw a rectangle which has the same dimensions as the cropped artwork.
2. Draw a diagonal line from the lower left corner through the upper right corner. Extend the line beyond the corner if you are enlarging the artwork.
3. Measure from the lower left corner, along the base line, to the width desired for the picture. Make the base line extend to that point.
4. Draw a vertical line up from the column width mark. Stop where it and the diagonal line intersect. Measure the vertical line. That measurement will be your reproduction depth.

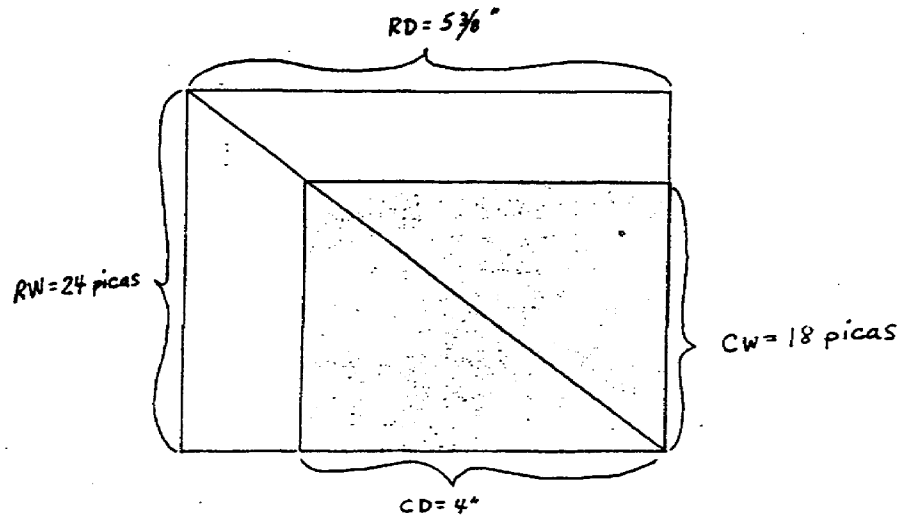


Figure 4-5. An example of diagonal scaling

THE PROPORTIONAL WHEEL

Perhaps the most common way of scaling is the proportional wheel method. The proportional wheel has a movable inner disc with a window mounted on an outer disc. Both discs have unit graduations from 1 to 100 (see Figure 4-6). Any unit of measurement can be used with the proportional wheel. To use the wheel, you will need to know three of the four measurements involved in scaling. You must know the cropped width, cropped depth and reproduction width, or the reproduction depth if establishing a reproduction width.

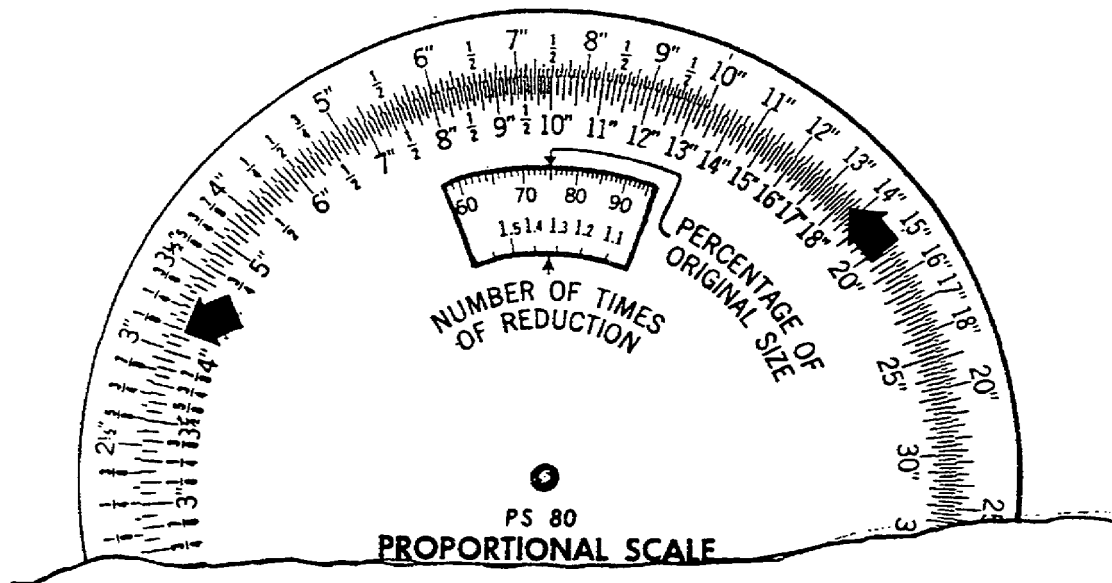


Figure 4-6. Finding inches

EXAMPLE:

The cropped width of a piece of artwork is 18 picas and the cropped depth is 4 inches. The artwork is to be used in a one-column, 13.5-pica wide space.

First, align the cropped width (18 picas) on the inner disc, with the reproduction width (13.5 picas) on the outer disc.

Next, find the cropped depth (4") on the inner disc and read the reproduction depth opposite it on the outer disc.

The reproduction depth is 3".

The window on the inner disc displays the "Percentage of Original Size." In this example, the artwork will be reduced to 75 percent of the cropped size. Figures less than 100 indicate a reduced size. Figures higher than 100 mean the artwork will be enlarged. Your printing contract may stipulate maximum reduction and enlargement percentages and sizes.

AN ALTERNATIVE: THE MATHEMATICAL FORMULA

An alternative to the previously described procedures is The Mathematical Formula. This is the simplest mathematical formula:

$$\text{Reproduction Depth} = \frac{\text{Reproduction Width} \times \text{Cropped Depth}}{\text{Cropped Width}}$$

$$RD = \frac{RW \times CD}{CW}$$

EXAMPLE: Cropped Width (CW) = 2 inches
Cropped Depth (CD) = 2 1/2 inches
Reproduction Width (RW) = 4 1/8 inches
(2 columns plus an alley)
Reproduction Depth (RD) = unknown

Fill in the known measurements:

$$RD = \frac{RW \times CD}{CW} \quad RD = \frac{4 \frac{1}{8}'' \times 2 \frac{1}{2}''}{2} \quad RD = 5 \frac{1}{16}''$$

ESTABLISHING PERCENTAGES

To establish a reduction of enlargement percentage, simply divide the reproduction width by the cropped width, or:

$$\frac{RW}{CW} = \frac{5}{3}$$

In the situation above, the reproduction width of 5" is divided by the cropped width of 3" to obtain an enlargement of 167%.

The same formula applies whether enlarging or reducing.

$$\frac{RW}{CW} = \frac{2.5}{4.5}$$

In the situation above, the reproduction width of 2 1/2" is divided by the cropped width of 4 1/2" to obtain a reduction of 56%. (Figure 4-7 shows how to determine percentages using a calculator.)

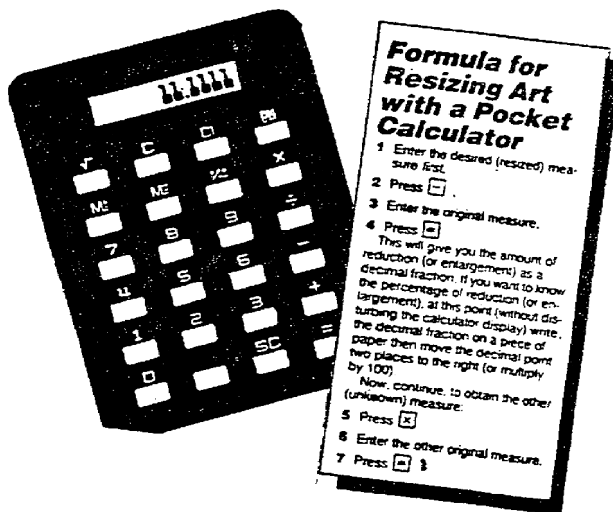


Figure 4-7. Measurements and percentages with a calculator

GUIDELINING ARTWORK

After scaling the artwork, you must guideline it to tell the printer what to do with it. The guideline is a notation that you write on the back of the artwork. It includes the photo/art slugline, the reproduction width and reproduction depth, and percentage of enlargement or reduction, in that order.

The formal method of writing artwork guidelines resembles the writing of a headline. When you write the artwork's guideline, the first number of the dimension identifies the number of columns or the reproduction width (in inches, picas, or local measurements). The second number identifies the reproduction depth.

EXAMPLE: 2 X 4". The first number (2) is the column width, or two columns. The second number (4) is the reproduction depth; in this case it is four inches.

Affix a piece of white paper to the back of the photograph.

Use a grease pencil or non-bleeding type of felt-tip pen to guideline artwork on the paper. Never use writing instruments which could leave an impression on the emulsion of photographic paper. Such impressions will likely be reproduced.

Proper guidelines for a photograph would look like the following:

SLUGLINE 3 X 5" 135%

PRACTICE EXERCISE

LESSON 4

SUBCOURSE NO. D10251

CROP AND SCALE A PHOTOGRAPH

INSTRUCTIONS:

Review the material in this lesson. Answer the questions below by circling the "T" or "F" next to each question. Compare your answers with the answer key on the next page.

- T F 1. Policy considerations are spelled out but are not limited to the provisions of AR 360-5.
- T F 2. When cropping a picture of a person it is best to crop at the neck, waist, knee or other joints.
- T F 3. Normally, a 3:5 proportion is the most pleasing shape of photograph.
- T F 4. In newspaper design the cropped depth of a photograph is usually represented in picas.
- T F 5. Scaling is the act of either enlarging or reducing cropped artwork to fit in a hole on a newspaper page.
- T F 6. The diagonal method of scaling is the most accurate method of scaling.

ANSWER KEY

LESSON 4

SUBCOURSE NO. DI0251

PHOTOJOURNALISM I

1. True (Page 49)
2. False (Page 50)
3. True (Page 52)
4. False (Page 54)
5. True (Page 55)
6. False (Page 55)

LESSON FIVE

ESTABLISH A FIELD PHOTOGRAPHIC DARKROOM

46Q Soldiers' Manual Task: 214-176-2301

OVERVIEW

TASK DESCRIPTION:

In this lesson you will learn to supply, set up and operate a photographic darkroom under a variety of field conditions developing black and white photographic film and prints for publication.

LEARNING OBJECTIVE:

ACTIONS: Inventory and store photographic equipment and prepare a darkroom site.

CONDITIONS: You are given the material presented in this lesson.

STANDARDS: The photographic film, paper and equipment must be stored to prevent damage and the darkroom must be set up so that the photographic image taken will result in a photograph suitable for publication.

REFERENCES: The material contained in this lesson was derived from the following publications:

STP 46-46Q14-SM-TG

AR 360-5

AR 360-81

FM 46-1

TEC Lesson 570-214-1098-A Develop Black and White Film

ESTABLISH A FIELD PHOTOGRAPHIC DARKROOM

INTRODUCTION

Photographic facilities, or photo labs, are used for film loading, chemical mixing, film and paper processing, photographic printing and storage. Central to the photo lab is the darkroom. Because photographic materials are light sensitive, they must be handled in total darkness or in subdued or filtered light. Darkrooms must be designed to provide for efficient work in the dark and to ensure safety of the workers.

During exercises or operations, public affairs personnel will go to the field with their units. During deployment, they often send the exposed rolls of film back to garrison for processing. However, they may, as part of their mission in the OPLAN, be required to set up and operate a field photographic darkroom. The PA annex to the OPLAN should include instructions on what supplies should be brought, how materials will be resupplied, how the darkroom should be manned, how the darkroom should operate, and liaison procedures.

At the end of this lesson you will be able to pack photographic equipment and supplies, set up the darkroom at the field site and operate the darkroom.

PA ANNEX TO THE OPERATIONS PLAN

The peacetime Army of today is in a go-to-war posture. To support this mission, your public affairs office should be prepared for deployment at all times. There must be a PA annex published for every OPLAN. In the PA annex should be instructions for setting up and operating a photographic darkroom in the field to support the command. The photographs you develop and print in the field are used for publication release. There must be standards and procedures established to ensure you get a quality photographic product. The annex should include instructions for the following:

SUPPLIES PACKING LIST

Include in the list requirements for film, paper, chemicals, equipment and supplies, depending on the mission. The

supplies should be packed or stored prior to deployment so that they are available when you are ready to deploy. You may need to include a requirement to bring containers of water if you will travel by ground transportation (the water is too heavy to transport by air). Further in this lesson there is a section on packing, to include a recommended packing list.

FIELD DARKROOM SITE LOCATION

The PA annex should state that a fixed site with running water that can be made light-tight is the optimum site for the darkroom. Other options should be listed besides fixed sites (such as a scratch-built or tent darkroom). The annex should include instructions to the headquarters commandant (or whoever decides who gets what at an exercise site) to provide a tent, or part of a tent, for use as a facility in case no fixed site is available. By listing site requirements and the type of facility needed, the annex will assist a site survey team or advance party in locating a darkroom site. Remember, however, that PAO requirements are "low on the totem pole" and you may need to be aggressive in making your needs known.

MANNING REQUIREMENTS

Establish what personnel will be required to support the mission and man the darkroom. Plan for taskings, if needed.

ESTABLISH LIAISONS FOR SUPPORT OR RESUPPLY

The field darkroom may require support from other units or organizations, especially since it will need a source of water, and, in hot weather, refrigeration. If deploying with intelligence or signal units with photographic capabilities, plan to share facilities. The annex must address resupply actions.

STANDING OPERATING PROCEDURE (SOP)

In addition to a PA annex, you should write an SOP giving detailed instructions on how to operate the field darkroom. You can include the following in an SOP:

Establish Procedures for Setting Up the Darkroom

Include instructions on how the darkroom should be laid out for ease in operation. Instruct how to set up the enlarger

and safe lights so that they work properly. List the procedures for testing the darkroom.

Supply Storage Procedures

Include instruction on the storage of chemicals, film, paper and equipment to lessen the chance of damage. The SOP should include instruction on chemical disposal.

PRACTICE DARKROOM USE

It may be a good idea to practice setting up and using a field darkroom at the normal peacetime location once or twice a year. If the darkroom is used for a week, most problems would show up and could be worked out before deployment.

PACKING

The items you choose for packing should be chosen for the job. Because you may not know much about the site you will be deploying to, the items you bring should be versatile. Film that is versatile when used in different levels of light, lenses that will give you a variation of magnification and paper that develops an image quickly and with a short washing time will prove most useful when you must work in the field.

Once you pack for deployment, you cannot just leave the items lying in storage until you need them for a deployment. You should check the stored items at least monthly to be sure the items are in good condition. Make sure that film, paper, chemicals, batteries and other supplies are fresh, their original seals intact. Rotate after six months; put the stored items into daily use and replace with new supplies.

Some items, such as the enlarger, may or may not be kept stored for a deployment, based on whether they are needed for day-to-day operations. If this is the case, you should check the storage cases for the items and any spare parts the equipment may have. Film should be placed in a refrigerator or freezer so that it lasts well beyond its expiration date, and taken out when needed for deployment. Above all, soldiers that will be using this equipment in the field must be familiar with the equipment and know how to use it.

PACKING LIST

The following is a basic packing list of items you will need when you deploy. For containers you will need two footlockers, a case for the enlarger and at least one camera bag. This list is only a guideline because your mission and available equipment might require exceptions.

Inventory the items as you pack them, and clearly mark them as your office/unit's property. Tape a copy of the inventory list onto the inside of the lids of the footlockers. Wrap the film and photographic paper in waterproof bags, such as plastic garbage bags, to keep out moisture. If you are deploying to a desert environment, you may want to bring liquid chemicals that require only dilution. Remember that if they leak everything in the footlocker could be ruined.

Footlocker No. 1

- o One-month supply of basic darkroom supplies.
- o Film. 100 rolls of 400 ASA/ISO black and white film and 20 rolls of color slide film.
- o Photographic paper. 1,000 to 2,000 sheets of variable contrast photographic paper. Cut 8x10 inch paper to 5x7 inches before storing it for deployment use. You use 5x7 paper to conserve chemicals, paper and water.
- o Film development chemicals. Store enough developer, stop bath, fixer, hypo-clearing agent and wetting agent to develop the film.
- o Paper development chemicals. Store enough developer, stop bath, fixer and hypo-clearing agent to print the photographs you will take in the field.
- o Miscellaneous supplies.
 - Negative sleeves.
 - Dodging and burning tools.
 - Anti-static brush.
 - Grain magnifier or other focusing device.
 - Lens-cleaning tissue and fluid.
 - Blower brush.
 - Printing filter set.
 - String and clothespins.
 - Film/paper dryer and dryer bag.
 - Masking tape.
 - Black electrician's tape.
 - Duct tape.

- Film changing bag.
- Extra enlarger bulbs of 110 and 220 voltages.
- Multivoltage hotplate and immersion heater.

Footlocker No. 2

- Four trays. For developer, stop bath, fixer and wash, at a minimum. You should also pack a replacement tray and a tray for a water bath, if used.
- Four graduated beakers.
- Film-development tanks.
- Film-development reels or ribbons.
- Bottle opener.
- Scissors.
- Two or three thermometers.
- Film washer.
- Paper safe.
- Cans of compressed air (such as Dust-off).
- Contact print easel.
- Print easel.
- At least two safelights, matching the power source at the field site, with plug adapters, if required.
- Tongs.
- Sponges.
- Paper towels.
- Broom and mop.
- Tools. A hammer, nails, screwdriver, screws, regular pliers, needle-nose pliers and extension cords.
- Caulk.
- Clear plastic bags.

Enlarger

If you do not need the enlarger for day-to-day operations, you could pack it in its original container, a machine storage crate or have the post engineers build a shipping crate. Keep the enlarger in storage with the footlockers. You should periodically remove it from its container and check it for damage. Otherwise, you must prepare the enlarger for shipping when you are preparing to deploy. Check the crate or container to make sure it is not broken or damaged, and that it will close and lock. Make sure the container is marked with your office identification. If the container checks out, carefully disassemble the enlarger and pack it in the container. Be particularly cautious when packing the optical system of the enlarger. The optics can be easily scratched or broken by mishandling. When packing, include the manufacturer's instructions for assembling the enlarger.

Tables

Prepare two tables for transportation; one for use on the "dry side," the other for use on the "wet side" of the darkroom. The table for the dry side should be sturdy enough to support an enlarger. The table on the wet side will be used for the darkroom trays. The PA annex could include coordination instructions for the site survey team to locate, if possible, a field darkroom site with a sink or table already in place. You may eliminate the need for bringing the "wet" table if an adequate sink or table already is in place at the field site, but count on bringing the tables.

Camera Bag

If possible, store at least two camera bodies with short, medium and long lenses, an electric flash unit, filters, lens-cleaning tissue and fluid, a blower brush and split-beam card (an index card that can be used to split the beam of the flash) in a camera bag for use during deployments. You should periodically check the cameras, lenses and flash to make sure they operate properly. Keep a supply of freshly charged batteries in the camera bag, at least enough to last a month. If you cannot keep a full camera bag ready due to day-to-day operations, pack the camera bag with as much as you can spare, and just load it with the additional items prior to deployment. You may want to place a few rolls of film into the bag to take photographs of units as they travel with you to the field.

DEPLOY

The footlockers, tables and enlarger case are packed and locked, ready for loading to take to the field. Load the van, truck or pallet, securing the footlockers and enlarger case with tie-downs to reduce damage. If the items will be loaded onto an aircraft, you will probably be told to bring them to a central location for loading onto pallets. Soldiers or airmen trained in properly loading an aircraft will load your items; if the items will not be flying on the same aircraft as you, be sure to find out which aircraft they will be on. Make sure you can read the identifying marks on each item so that you can find them when they are off-loaded. Carry the camera bag with you; this will protect it from damage and secure it against theft or loss, and you can photograph the soldiers on their way with you to the field. Make sure to get a copy of the lading of/for shipment.

THE FIELD SITE

At the field site, unload the darkroom equipment and supplies and place them away from bright light and moisture while you prepare the field darkroom for operation. There are three types of darkrooms you can establish: scratch-built, tent and fixed site.

SCRATCH-BUILT DARKROOM

If there is no fixed site available and you do not have a tent, you could build your own darkroom. This must be identified before deployment so you could bring building materials, or get them issued to you once at the site. Locate the darkroom, if possible, near a source of water and electricity. The darkroom should be large enough to hold you and the two tables you brought, giving you room to work (Fig. 5-1). Separate the tables so that you have a "wet" and a "dry" side. Or, you may want to build shelves to place the trays on. Try to assemble the 2x4s and plywood so that they fit tightly and allow little light to leak in. Use caulk to fill in the cracks. You could either fashion a door out of wood, or you could use a blanket or shelter-half. Cover the roof with shelter halves or plastic bags; they will probably protect the darkroom from moisture during a light rain, but could be useless in a downpour.

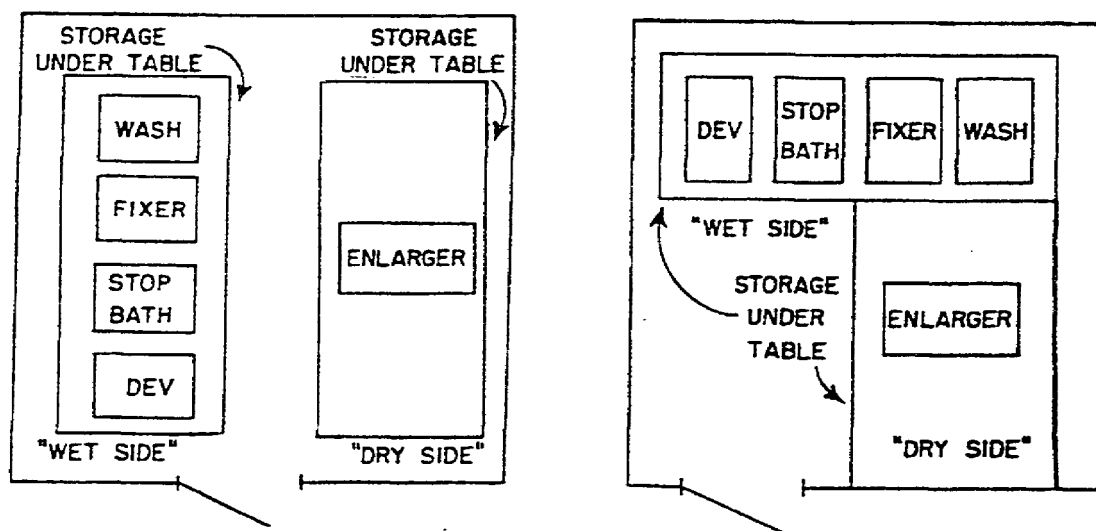


Figure 5-1. Two examples of laying out a darkroom.

Once the darkroom is built, go inside, wait for your eyes to adjust, and check for light leaks. You will probably have leaks where the wood meets; putting in a few extra nails

along an edge of plywood will tighten it down and cut down on the amount of light coming in. On the inside of the darkroom, use black electrical tape and the inside of film paper boxes to block out any last light leaks. If you still see leaks and feel that they will cause the film to fog, use a film changing bag to load the film onto reels and into the developing tank, or use the darkroom to develop film only at night. You can sweep and mop the scratch-built darkroom if you lay a plywood floor.

TENT DARKROOM

A tent darkroom will probably be more weather-tight than the scratch-built darkroom, but may be just as difficult to make light-tight. It will help to place the tent where it is naturally shaded from the sun, by trees or in the shadow of a building or cliff. Camouflage covering will cut down on light reaching the tent, and will make it cooler and less dusty as well. A tent liner will trap light also. You may be able to make the tent dark enough to print during daylight, but most likely you will have to wait until it is dark. To develop film, either wait until it is dark, or use a film changing bag. If you do not have a film changing bag, you can fashion one from your field jacket. Snap and zip the jacket, tie off the bottom and neck and put your arms through the sleeves to work.

FIXED-SITE DARKROOM

A fixed-site darkroom is the optimum facility, especially if it has electricity and running hot and cold water. To set up a fixed-site darkroom for operation you would clean it, make it light-tight and turn on the electricity. Cleaning, power and darkness is easier to achieve than in the tent and scratch-built darkroom facilities because:

- o Cleanliness. Because a fixed-site is in a building, dust, moisture and dirt can be controlled.
- o Power. You can usually expect electricity at a fixed-site. In many instances, you may work in a vented washroom or bathroom (which will give you running water as well).
- o Light control. The fixed-site darkroom can be made quite light-tight. Although the room may appear absolutely dark at first, it may in fact be unsafe for handling unprocessed film. To check for light leaks, close the door, place a white piece of paper on the table in front of you and turn out the lights. If, after 30 seconds, you cannot discern the paper, your darkroom is light-tight.

Ventilation openings, windows, cracks around the door and even the ceiling could be a source of light leaks. Use black cardboard and duct tape to mold a vent cover that allows ventilation but eliminates the light (black cardboard is available from the empty boxes of photographic paper). Use duct tape to seal cracks around the door, windows, or anywhere else that light comes in.

SET UP ENLARGER

Set up the enlarger by the manufacturer's instructions. Check to make sure there has been no damage. Clean the optics, being careful not to scratch the glass. Ensure the darkroom's power source is compatible with the enlarger and timer, whether 110 or 220 volts and 50 or 60 kilohertz. Test the timer by setting it for several seconds and checking it against your watch. Make sure the light bulb works; if not, replace it with one of the extra bulbs you have brought. Check the aperture settings from lowest to highest, making sure the aperture moves easily without sticking or jamming. Once you are satisfied that the enlarger works properly, dust it and cover it. When not in use, always unplug the enlarger and keep it covered.

SET UP SAFELIGHTS

Check your safelights to make sure they work and have not been damaged. Place both safelights on the wet side of the darkroom within reach of an electrical outlet. The method of hanging them up will depend on how your darkroom is made. If you have built your darkroom out of wood, you could nail your lights up. If your darkroom is in a tent, the lights can be suspended from the tent poles. A fixed facility may already have nails in the walls for hanging your lights. When hanging the lights, make sure they are placed so that you can reach them in the dark and turn them on and off easily.

STORE SUPPLIES

Retrieve your supplies, unpack them and store them off the floor, away from dampness and light. Separate your storage into three areas: one for chemicals, one for film and paper, and one for cameras and accessories.

Chemical Storage

Chemicals should be stored in a cool, dark, dry place. They must be stored carefully both before and after mixing. The containers used for shipment of liquid chemicals should make excellent containers for storage. The containers should be arranged so that as little damage as possible occurs if any container is accidentally broken. Do not store dry chemicals on the floor; dampness, leaking liquid chemicals, overflowing sinks or rainwater could damage them. Store them on a shelf or a pallet. Liquid chemicals should be stored lower than dry chemicals, so that if a container leaks the contents will damage only the floor.

Film and Paper Storage

Proper storage should be maintained if you expect good photographic results. Photographic film and paper are perishable. Poor storage conditions can cause the photographic properties of sensitized materials to deteriorate. Adverse storage conditions may cause changes in color and tone reproduction, and the speed of films and papers. Color materials are more seriously affected by heat and moisture than black and white. You must protect them from the harmful effects of heat and moisture.

Temperature. Normal room or outdoor temperatures are easily withstood; storage at 65 degrees F is adequate for conventional materials when there is a reasonably rapid turnover of stock. A moderately high temperature for a short time is not particularly destructive, but extended storage at high temperature causes the film to fog. Do not store film or paper in hot, unventilated storage rooms or lockers, in the direct sun or under bright lights. If possible, freeze or refrigerate the film and paper.

Humidity. Humidity during storage becomes a problem once the package seal is broken. Hot, humid air may cause fog, fungus growth, condensation, mold and mildew. The enlarger could rust from humidity.

Ideally, storage during high temperature and humidity should be in an air-conditioned room with relative humidity between 40 and 60 percent. If an air conditioner is not available, seal film and paper into plastic bags to keep out moisture and place them in a refrigerator. Check with medical, mess or commo units in your area. They may have air-conditioned or refrigerated space where you may store your film and paper. Otherwise, seal the film and paper into plastic bags and do the best you can in the field to store them away from water, heat and light.

Camera Storage

The camera bodies and accessories should be stored in the camera bag. At the end of each day, or before each assignment, load the bag with enough film to accomplish the next day's assignments. Before using the film, if refrigerated, allow it to come to room temperature in its unopened package, which will prevent moisture condensation. Cameras should always be loaded with film, ready to go. Check each item for cleanliness, maintenance and serviceability before an assignment.

MIX CHEMICALS

If you must mix dry chemicals for stock, do so, following the manufacturer's instructions. Otherwise, dilute the liquid chemicals as needed.

OPERATE THE FACILITY

Your field darkroom is now established. Clean it, and make sure that you can secure it. Do not forget to use a sign indicating that the darkroom is "in use" if others are able to walk in on you as you work.

You are now ready to develop black and white film in your field photographic darkroom. The steps for the black and white process are contained in TEC Lesson 570-214-1098-A, Develop Black and White Film.

Run a test roll of unexposed film through the development process as a test of the darkroom. Do NOT use a roll of film that has been exposed. The film should come out clear, with frame numbers and film information along the bottom edge. If the film is fogged, you probably have a light leak. If the marking on the edges is missing, something is wrong with the chemicals, probably the developer.

Contact the liaison(s) established in the PA annex to the OPLAN. Should the deployment be lengthy, a liaison with higher headquarters, sister units or a depot for resupply of photographic materials will be very important. You may consider locating a local civilian photographic supply source if necessary.

ADVERSE WEATHER OPERATIONS

Most likely you will go to the field when the weather is less than perfect. You should be prepared to operate the field photographic darkroom in any type of weather. This chapter will cover operations in cold, heat and humidity.

COLD TEMPERATURES

Cold temperatures are found year-round in the polar regions, on high mountains, and during the winter in temperate areas of the world. Because the possibility exists that you will participate in exercises in cold temperatures, you must be aware of how cold weather affects your equipment.

Cold Weather Equipment Preparation

Cold weather can make your SLR camera malfunction if the temperature is low enough to cause the mirror to stick, the shutter to break and the aperture to freeze open or shut. The film could also break when being wound. Synchronization cords will be less flexible and may snap, damage that may not be noticed. Take the following precautions to protect your film and equipment in cold weather:

- o Prevent moisture condensation. Condensation is formed when cold objects are brought into contact with warm air, and the moisture can freeze when the objects are brought back into the cold. Although the moisture can be wiped off the outside, it can penetrate inside the equipment and cause permanent damage when it freezes.
 - Never place cold film in a warm camera, or warm film in a cold camera.
 - Carry the camera in a plastic bag to keep out moisture which might freeze when you go outdoors.
 - Do not breathe on cold lenses or eyepieces; it causes a fog that forms frost on cold glass and metal that is difficult to remove.
- o Keep the lenses and camera covered.
 - Use a UV haze filter as a protective cover at all times to prevent frost damage and to prevent the lens barrel from filling with snow.
 - Careless removal of snow or frost that does form can result in lens damage.
 - Keep the camera covered when not in use to prevent dustlike snow particles from entering the camera mechanism and causing damage.
- o Static electricity. Reduce static marks on your film by winding and rewinding the film in the camera very slowly, and onto the development reel as well.
- o Batteries.
 - Batteries lose power rapidly in cold weather.

- Use fresh batteries; they will hold a charge better than older ones.
 - Use body heat to keep batteries warm so they will work better and last longer.
 - Carry spare batteries in a warm pocket.
 - Carry batteries for your flash close to your body in a battery pack.
 - Store the batteries in a warm place when not in use.
- o Warm water before use. Cold temperatures slow down chemical processes. Use a field stove, hot plate or immersion heater to warm water before mixing the chemicals.
 - o Adjust film use to the cold. At low temperatures, film becomes brittle and stiff, and cracks occur in the emulsion.
 - Handle film gently when winding it on the take up reel or developing reel.
 - Adjust f/stops and exposure time because the reaction of film to the exposing process is slowed, reducing film speed.

HOT TEMPERATURES

Hot, humid weather is bad for photographic equipment, causing corrosion, fungus growth, insect damage, rust, mildew, mold and warping. Photographic film and paper, when stored under hot, humid conditions, will deteriorate. Some crystalline chemicals will absorb the moisture and dissolve in it, or give up their own moisture to the air and become powdery.

Hot Weather Equipment Preparation

Try to store your film, paper, chemicals and equipment in a cool, dry place. Use any of the following suggestions open to you to keep your equipment and materials in good shape:

- o Keep darkroom cool.
 - Locate in-shade, use fans or air conditioners when available.
 - Seal film and paper in a plastic bag and store in a refrigerator.
 - Freeze containers of water in the mess hall daily and place them in storage with film and paper.
 - Operate darkroom at night if daytime temperatures are too high.
- o Keep equipment, chemicals, film and paper dry.

- Store crystalline chemicals in brown glass or plastic bottles sealed with wax or tape at the neck.
 - Keep the film and paper, and especially color slide film, sealed in their original packaging as long as possible; open them just before use.
 - Once the packages are opened, seal film and paper in plastic bags.
 - Place a desiccating agent, such as silica gel, in the bags of film and paper to absorb moisture.
 - Clean and dry equipment before storage.
- o Process film quickly. Film, especially color slide film, should be processed as soon as possible after exposure. This will avoid shifts in color balance, fading of the image and fogging.
- o Inspect regularly.
 - Inspect photographic equipment and materials weekly for dust, corrosion, mildew, insect damage or fungus growth.
 - Keep the darkroom as clean as possible.
 - All exposed metal parts should be covered with a corrosion/rust preventative such as WD-40, or even the anti-corrosive oil used on weapons.
 - Leather should be treated with leather dressing.
- o Protect equipment.
 - Protect lenses from scratches caused by dust, sand or prop wash.
 - Protect a lens with a UV haze filter at all times, and with a lens cap when the camera is not in use.
 - Waterproof the camera by placing it in a clear plastic garbage bag, with holes cut for the lens and eyepiece. Seal the bag against the camera with electrical tape. The bag should be loose enough for you to operate the camera from the outside.
 - Avoid dropping the camera into water.
 - Keep the camera and the enlarger covered when not in use.
- o Use proper water temperature. When temperatures are high, it may be difficult to obtain water between 65 degrees and 75 degrees F for film and print development. At water temperatures above 75 degrees F, developer could fog or stain from rapid oxidation, and gelatin could swell, causing reticulation (wrinkling).

You can use the following to cool the water used for processing (not necessarily used as water for processing):

- Ice (from the dining facility or aid station).
- Melted ice.
- Air conditioner run-off
- Heat exchanger run-off
- Air compressor run-off
- Cool water from any other source.

Conserve Water

If in a desert environment, water may not be available except for consumption and hygiene. Because large quantities of water are essential for photographic processing, you should examine your operation for ways to economize your water usage. If possible, bring containers filled with water when you deploy. Use liquid chemicals versus dry. Use resin-coated paper, which requires a shorter washing time than fiber-based paper. Follow manufacturer's instructions for processing and washing film and paper, using the minimum time listed. Consider the following when water is scarce:

- o Sources of water. If there is a shortage of fresh water, you may need to reuse water. It is safe to assume that water is satisfactory for photographic washing if it is clear, colorless, and does not have a sulphur odor. Filter debris out of the water and bring it to the temperature needed for processing. You can use water from:
 - Air conditioners.
 - Heat exchangers.
 - Refrigerator units.
 - Ice or melted ice.
 - Mess facilities.
 - Shower facilities.
 - Seawater.
 - Any other water source, potable or non-potable.
- o Use hypo-clearing agent. Hypo-clearing agent is a fast and efficient means of removing residual hypo in black and white film. Seawater is also an efficient remover of hypo in film. If you use seawater for washing film, you must remove the salt with a final wash of at least five minutes in fresh water.
- o Reduce water use.

- When developing film, use the slowest rate of water flow and the smallest tank that will accommodate it.
- Develop enough rolls of film to fill a developing tank.
- Save water used from film washing and use for print washing.
- When printing, reduce unnecessary water depth in washing trays.
- Paper cut into one-inch strips can be used to test exposures; the strips will conserve both water and chemicals by reducing trial prints.
- Use replenishers rather than dumping exhausted chemistry and mixing fresh.
- Avoid making prints 8x10-inch and larger.
- Make contact sheets to avoid printing bad negatives.

Conserve Chemicals

Some chemicals can be reused many times before they become exhausted. Once chemicals are exhausted, dispose of them according to local SOP.

- o Developer. Most developers are for one-time use only and must be discarded. Some are reusable; follow manufacturer's instructions if reusing developer.
- o Stop bath. Stop bath is reusable. Most require keeping track of how many rolls of film have gone through. Kodak's Indicator stop bath turns purple under safelights when exhausted. It can be recycled as long as it remains yellow.
- o Fixer. Fixer can be used for a long time before it becomes exhausted. Pour the used fixer into a container separate from the unused fixer to use once the unused fixer is gone. Follow manufacturer's instructions to tell when fixer is exhausted.
- o Hypo-clearing agent. Hypo-clearing agent can be discarded after use.
- o Wetting agent. Wetting agent can be discarded after use.

PRACTICE EXERCISE

LESSON 5

SUBCOURSE NO. DI0251

ESTABLISH A FIELD PHOTOGRAPHIC DARKROOM

INSTRUCTIONS:

Review the material in this lesson. Answer the questions below by circling the "T" or "F" next to each question. Compare your answers with the answer key on the next page.

- T F 1. The camera bodies and accessories should be stored in the camera bag.
- T F 2. The enlarger should be packed without disassembling it.
- T F 3. Photographic film and paper are perishable.
- T F 4. Dry chemicals should be stored on the floor below the liquid chemicals.
- T F 5. Cleaning, power and light control is easier to achieve in a tent.
- T F 6. Seawater is an efficient remover of hypo in film.
- T F 7. In the field you should avoid making contact prints in order to save water.

ANSWER KEY

LESSON 5

SUBCOURSE NO. DI0251

PHOTOJOURNALISM I

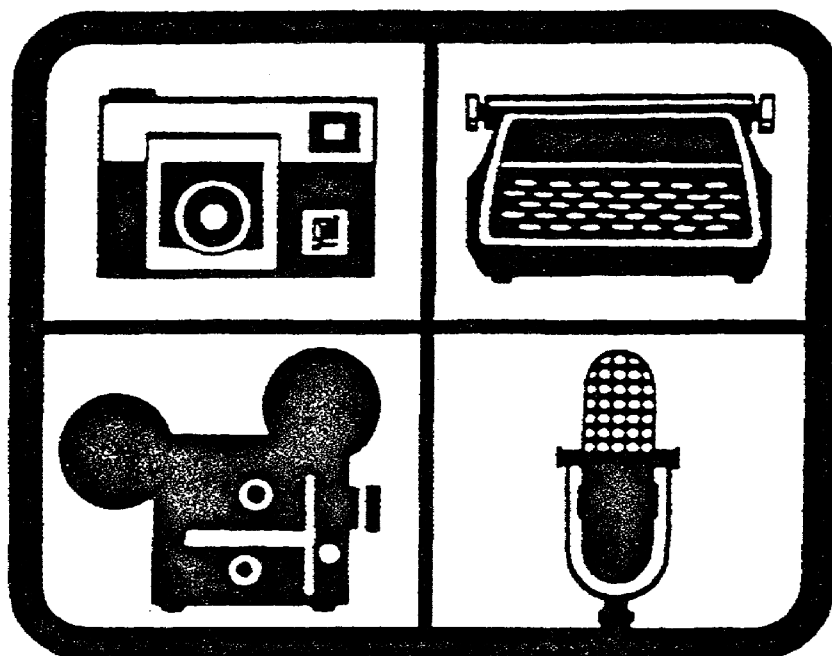
1. True (Page 74)
2. False (Page 68)
3. True (Page 73)
4. False (Page 73)
5. False (Page 71)
6. True (Page 78)
7. False (Page 79)

SUBCOURSE
DI 0350

EDITION
A

ELECTRONIC
JOURNALISM

PUBLIC AFFAIRS



THE ARMY INSTITUTE FOR PROFESSIONAL DEVELOPMENT
ARMY CORRESPONDENCE COURSE PROGRAM

**A
I
P
D**

READINESS/
PROFESSIONALISM



THRU
GROWTH

ELECTRONIC JOURNALISM

Subcourse Number DI 0350

EDITION A

Army Public Affairs Center
Fort George G. Meade, Maryland

10 Credit Hours

Edition Date: March 1991

SUBCOURSE OVERVIEW

We designed this subcourse as part of the Broadcast Journalist course to introduce you to an entry-level understanding of Electronic News Gathering/Electronic Field Production Equipment, Lighting For Electronic News Gathering, Framing And Composition, Video Scriptwriting and Electronic Editing. This subcourse is presented in five lessons.

You must have a basic knowledge of military broadcasting prior to taking this subcourse. There are no prerequisites to this subcourse.

This subcourse reflects the doctrine current at the time the subcourse was prepared. In your own work situation, always refer to the latest official publications.

Unless otherwise stated, the masculine gender of singular pronouns is used to refer to both men and women.

TERMINAL LEARNING OBJECTIVE

- ACTION:** You will learn the basics of electronic news gathering/electronic field production, lighting for electronic news gathering, video scriptwriting, framing and composition, and electronic editing.
- CONDITION:** You are given the material presented in this lesson.
- STANDARD:** To demonstrate competency of this task, you must achieve a minimum of 70 percent on the subcourse examination.

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LESSON ONE

ELECTRONIC NEWS GATHERING/ELECTRONIC FIELD PRODUCTION

46R Soldier's Manual Task: 214-177-1315

OVERVIEW

LESSON DESCRIPTION:

This lesson will provide you an overview of Electronic News Gathering/Electronic Field Production (ENG/EFP) and the equipment necessary to perform these functions.

TERMINAL LEARNING OBJECTIVE:

ACTION: After you complete this lesson you will be able to describe common ENG equipment, its purpose and its functions.

CONDITION: You are given the material presented in this lesson.

STANDARD: Perform all the duties described in this lesson.

REFERENCE: The material contained in this lesson was derived from the following publication:

STP 46-46Ri4-SM-TG Soldier's Manual & Trainer's
Guide, Broadcast Journalist, MOS 46R Skill
Levels 1/2/3/4/, August 1988

ELECTRONIC NEWS GATHERING/ELECTRONIC FIELD PRODUCTION

INTRODUCTION

The age of the high-quality, portable "mini-camera" is here to stay. The same technology found in the pocket calculator and the computer is responsible for small, lightweight video systems, which are revolutionizing the television industry. Where once we could only take a film camera, the Electronic News Gathering (ENG) /Electronic Field Production (EFP) videotape camera has effectively replaced this older system with cost-effective, portable news gathering equipment. Not only is it portable, it can even allow the broadcaster to play back the recording on the spot and gain instant confirmation of success or failure. With the older film format, the process was time consuming, and expensive.

This subcourse discusses the equipment, operation and capabilities of the small-format video camera system. As an Army broadcaster, you will be dealing extensively with ENG/EFP recording systems used primarily for command information and electronic news gathering. You need to have a basic understanding of the mini-cam system, as well as television in general to perform effectively in your position either as a field reporter or producer of command information material. This subcourse will give you the basic knowledge required to function in these positions.

Commercial television stations use many different terms to describe their mobile production units. However, civilian and Army broadcasters agree on the use of at least two terms: ENG and EFP. There is a difference.

- o ENG is the coverage of uncontrolled events such as a training accident or fire. The pictures and story are gathered on the scene, as the events take place.
- o EFP uses the same equipment, but under controlled circumstances. A story or script is written in advance. The event is carefully planned and executed until the final product is finished with predetermined results.

ENG/EFP serves two primary purposes in Army broadcasting. They are command information and public information, which will be anything from an uncontrolled event to a carefully planned event. Either could be a news story, in which case, it would be treated the same as ENG, or a produced spot on the other end of the spectrum. Most likely it will fall somewhere in between. EXAMPLE: A training exercise where the event itself is planned, but your coverage of it will be with less control than an EFP.

Most of today's soldiers grew up with television. The last war, Vietnam, came into America's living rooms through television sets. The ability of television to communicate information and ideas by using pictures as well as words far outdistances other media. With all its advantages, however, television poorly produced can lose the audience's interest and attention just as any other medium. You, the broadcaster, must learn, practice and properly employ television production techniques to be most effective in ENG/EFP.

Since television is normally a team effort with every member concentrating on his specialty, the ENG team faces a far greater challenge in that there are fewer members to accomplish all of the tasks necessary to complete the production. In addressing the different aspects of television production it would be simple to concentrate in one specific area with regards to one specific task. However, since the ENG team member must wear many hats, it will sometimes be necessary in this lesson to refer to certain topics in a number of different places. For that purpose, this lesson will explain each facet of the subject, and label it in bold type in order for you to find it more easily whenever it is referred to again. There will be different size letters in bold type to indicate topics and subtopics. It may be necessary for you to refresh your understanding of a particular topic by going back when you find it mentioned again. Don't hesitate to do so.

THE CAMERA

The most obvious production element, the camera, comes in many sizes and configurations. Each has three main parts, the body, the lens and the viewfinder. Some cameras may be easily carried and operated by one person, while others are so large and heavy they must be placed on a special camera mount or **dolly pedestal**. The camera dolly is wheel mounted, enabling the operator to move the camera through a studio, on wheels, with relative ease. However, the chance of you being involved in an EFP requiring studio cameras, is extremely remote. Therefore, the camera we will discuss is the portable camera, the most often used in ENG/EFP.

Whenever possible ENG/EFP cameras should be placed on a **tripod**. A tripod is a stand with three legs having a mounting plate to which the ENG/EFP camera is attached. It is the field equivalent of the studio dolly pedestal. ENG/EFP cameras are automated and fully operational within seconds after switching them on. Adjustments to extreme production situations may be made quickly and easily (see Figure 1-1, Basic Camera).

Almost all important productions are done with color cameras- Black and white cameras are used for inexpensive taping, surveillance, and industrial applications.

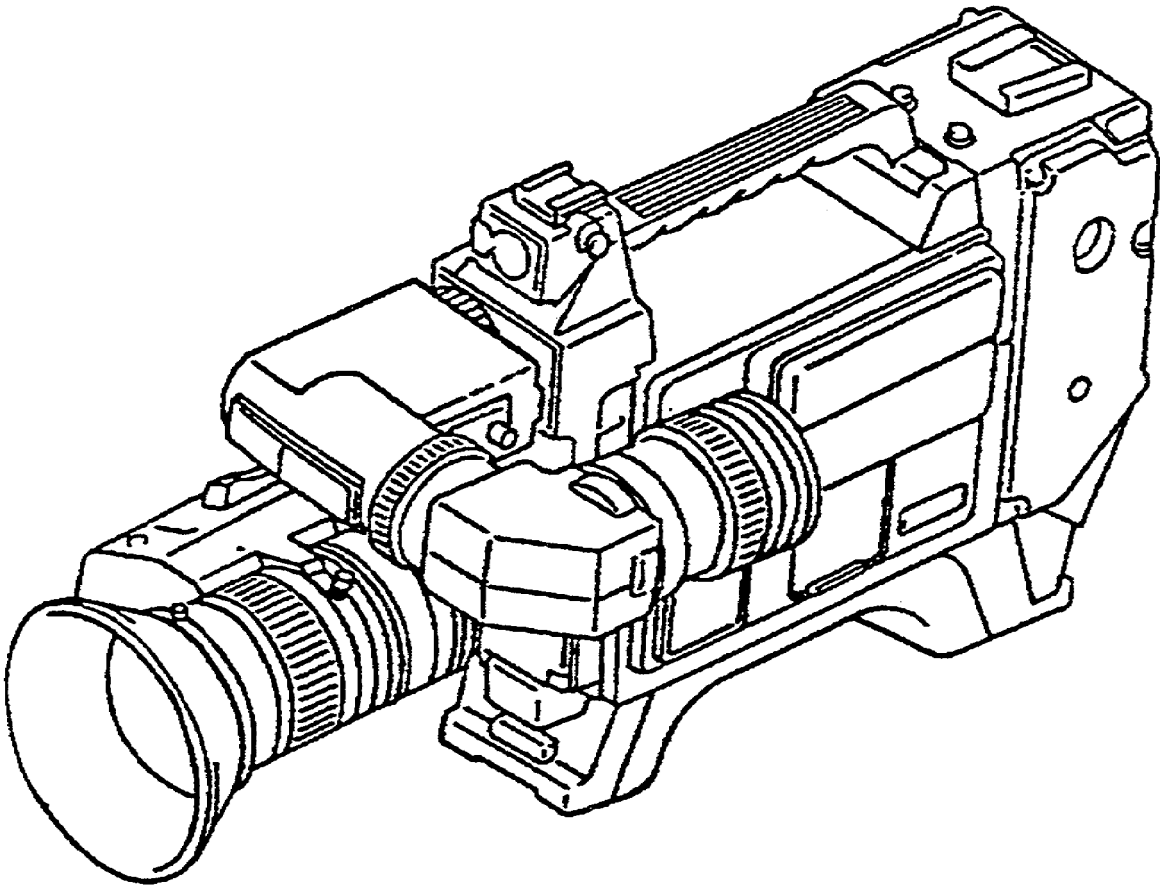


FIGURE 1-1. BASIC CAMERA

HOW THE CAMERA WORKS

All TV cameras, whether color or black and white, studio or portable, operate on the same basic principle. They convert an optical image into electronic information that is then reconstructed by a television set or monitor into visible screen images.

Black and White Camera

The light reflected off an object is gathered by the lens and focused on the camera pickup device. The light is then transformed into electrical energy or the video signal. In the black and white camera, this light stays in the form of different values of gray. The signal is amplified, processed and converted back into images in the viewfinder.

Color Camera

The color camera is more complicated than the black and white camera. In order for you to understand the dos and don'ts of color production, you'll need to know some of the basic workings of the color camera body. Since the camera is a seeing device and requires light, you'll also need to know something about light which will be discussed in another chapter. In this chapter, we will briefly discuss internal optical systems, image devices, electronic characteristics of color cameras, camera types and operational characteristics.

The color camera first splits the white light entering through the lens into the three primary colors; red, blue, and green. Those colors are then processed into separate channels. The color separation device that splits the white light is called the beam splitter.

Electronic characteristics. The electronic characteristics of a camera depend primarily on the performance of the image device used. In discussing internal optical systems and image devices, we'll take a brief look at color response, resolution and operating light level.

Color response. Ideally, the camera should respond to all colors alike. In the past, however, it's been difficult to reproduce different colors with the same accuracy. The greatest difficulty has been encountered when reproducing red. Not only is it difficult to produce a strong video signal for red, but it also has a fuzzier image than other colors. In their attempts, manufactures have gone to special tubes for each channel and special color-correction filters and electronic circuits. For the moment, the battle for accuracy in color response is being waged most successfully between the Saticon tube and the Charged Coupled Device or CCD. The COD is an integrated circuit or chip. Keep in mind that color response is the reproduction of color in the form of an electronic signal, and not the seeing or separating of the color by the beam splitter.

Resolution. The camera pickup device, tube or chip, is the principal element in the camera that determines the sharpness of the picture. Other elements that influence the resolution of the picture are the lens, the quality of the internal optical system, and the TV set or monitor that reproduces the picture. For instance, take a magnifying glass and look at a photo that is reproduced in a newspaper. Then look at one reproduced in a slick magazine. Generally you'll notice that the newspaper picture consists of rather coarse dots, whereas the individual dots are barely discernible in the magazine picture. The newspaper picture has poorer resolution than the magazine picture.

Be conscious of the limited resolution of the TV picture, especially when dealing with television graphics and in areas of production where fine picture detail is essential.

Operating light level. As previously mentioned, the camera converts visual images into an electronic signal for processing to video tape or transmission in some form or another. The first step in the process is accomplished by the pick-up device in the camera, whether it be a tube or chip. A certain amount of light is necessary for the pick-up device to be able to perform its task. The ENG/EFP videographer must make sure there is enough light to meet this technical requirement. There are a number of different aspects of light and a number of different ways to measure them. One common unit of measure that pertains to the amount of light, is the footcandle. Whatever term is used, it's important that your light-measuring device be in the same language as the manual for your camera. **EXAMPLE:** If the manual for your camera calls for a minimum of 100 footcandles of light, you'll need a light meter that reads in footcandles. It's not important for you to know what a footcandle is other than that it is a unit of measure. It is important for you to know "how much light your camera requires to operate."

Since cameras must operate under varying light levels, portable video cameras have a means of boosting the light. In reality, after the light, or optical image, entering the camera has been converted to an electronic signal, that signal is boosted rather than the light itself. Generally, the camera has a dB gain switch with two positions. They are 9dB and 18dB. For every 6 dB of gain, the camera output signal will double in amplitude, effectively increasing the video level. That means the 9dB setting will triple the signal strength while 18dB will be times eight. **CAUTION:** Video noise increases in proportion to the video gain.

Video noise. Under low light levels, even the best cameras cannot avoid noisy pictures. A noisy picture has a great amount of snow, or white vibrating spots in the picture. This occurs when the video signals, produced by the pickup device, are not strong enough to override the electronic interference that the system usually generates. At 18dB gain, the system is generating more electronic interference, therefore, more video noise.

Lag. Lag and/or color distortion occurs under low-light conditions when a bright object moves against a dark background, e.g., a white glove moving against a dark background. The white glove will leave a streak or trail against the background, sometimes called "comet tailing." Comet tailing occurs when the camera pickup tube(s) is unable to process "video hits," extremely bright highlights that reflect off highly polished surfaces. You may have

observed what appears to be red flames that seem to trail shiny brass objects whenever they move across a brightly illuminated area. In either case, the white glove on the dark background or the extremely bright highlights, it's a contrast or difference between that one spot and the area of the picture around it. It takes an instant for the picture to darken back down where the brighter object was. It's the camera's pickup device doing the same thing the human eye does when a moving "sparkler" appears to leave a bright line behind it as it is moved around. Of course, the video camera cannot react as quickly as the human eye, thus the same effect occurs in less extreme situations.

Color distortion. Color distortion occurs under low-light levels and makes colors like blue look green, and red look orange, etc.

BODY

The camera body consists of the housing and internal parts. That includes either camera pickup tube(s) or a solid-state image device and the internal optical system. The internal optical system is a series of prisms or mirrors. There are also circuitry boards, resistors, capacitors and wires. You might say that the camera body is the part which translates video images into electronic signals for processing and shipment.

VIEWFINDER

The viewfinder on a portable camera is a relatively small TV screen (1.5 inches in diameter), while a studio camera viewfinder is larger (3 to 9 inches in diameter). They both produce high resolution black and white images. The TV screen on a portable camera is shielded from outside reflections by a flexible rubber eyepiece that adjusts to the operator's eye. In that rubber eyepiece, there is an adjustable lens to focus since the eye is placed within an inch or two of the screen. The studio viewfinder uses a hood to shade the TV screen from overhead studio lights.

The portable camera viewfinder contains a number of control lights or displays that indicate the status of certain camera functions. Most viewfinders automatically display information on tape status, battery condition, tally/record light and low light level indicator. The viewfinders display, on command, bars (color bars), patterns, white/black balance setup cursor, and camera registration. (All camera viewfinders are black and white.)

Many cameras permit the viewfinder to be used as a playback monitor for the VCR. The advantage of this feature is that

you don't need any other equipment to set up the camera. This function is called video return, and more systems are getting away from it. Camera's are more reliable, recorders have indicators to let you know when you're recording, and video return becomes less cost efficient.

LENS

The lens selects a certain field of view and produces a small, clear optical image of this view. The lens and certain attachments are sometimes called the external optical system.

With the lens we have four primary concerns. These are (1) focal length, (2) focus, (3) f-stop, and (4) depth of field.

Focal Length

Focal length is the distance from the optical center of the lens (which is not always its physical center) to the point where the image as seen by the lens is sharp and clear, or in focus. Portable television cameras have a zoom, or variable focal length lens which enables them to select fields of view at different distances from the camera without moving the camera. It allows you to change the focal length of the lens from long to short or from short to long in one continuous operation. A complicated series of lenses interact and keep the object in focus at all times during the zooming process. Zooming in means changing the lens gradually from a wide-angle lens to a narrow-angle lens. On the television screen, a zoom in appears as though the camera is moving smoothly toward the object. Zooming out means changing the lens from a close-up to a distant shot and it will appear that the camera is moving away.

The degree to which you can change the focal length of a zoom lens is the zoom range of your lens. The range is often given in a ratio, such as a 10:1 zoom range. This means you can increase your focal length ten times. Some cameras have a "times two function," which allows you to double the focal length at any point in the zoom, thus making the maximum 20:1 for the above example.

The speed at which the focal length of a zoom lens can be changed is determined by the operator, whether it is done manually or with a zoom servo.

Manual zoom control. On the ENG/EFP zoom lens, the manual control is a small rod extending from the zoom ring (see Figure 1-2). To zoom in or out, turn the zoom rod clockwise or counterclockwise. It takes some skill and practice to accomplish smooth zooms with the manual control.

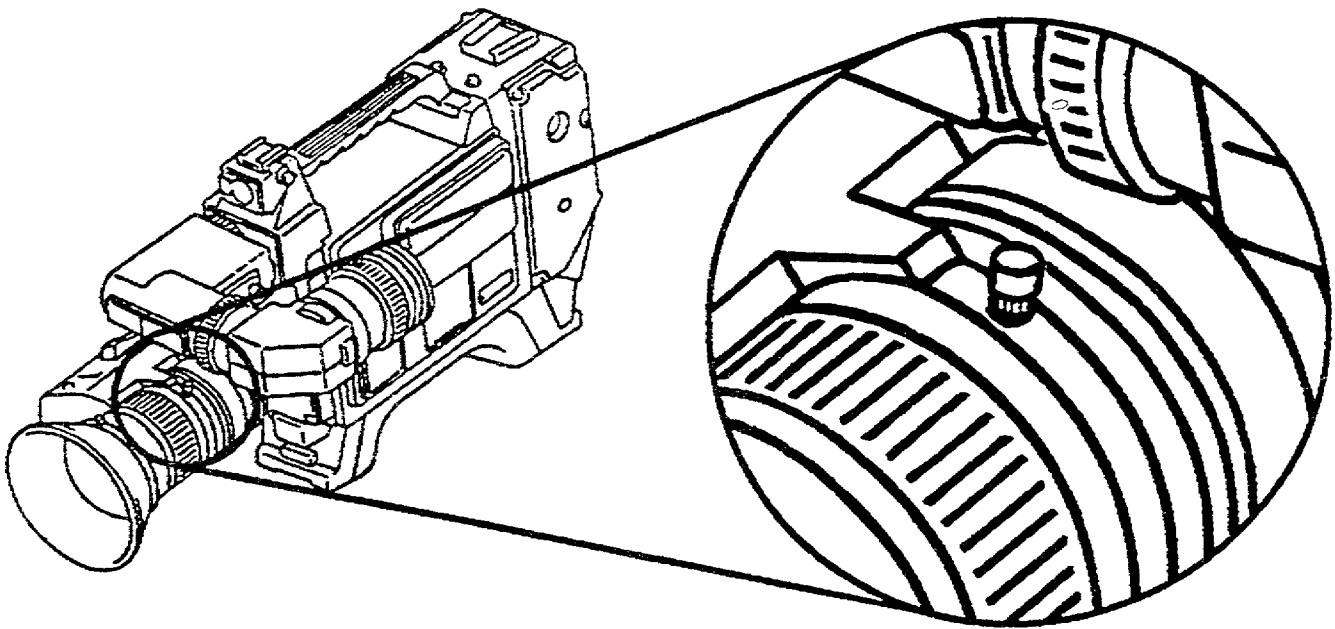


FIGURE 1-2. MANUAL ZOOM CONTROL

A zoom servo is nothing more than a small motor controlled by a lever. The distance the lever is depressed determines the speed of the zoom. The range of speed can be anywhere from 2.5 to 20 seconds. The lever is called the zoom selection or T/W switch. T stands for telephoto and W for wide-angle.

There are several advantages to the servo system. Zooms are steady and smooth, especially during slow zooms. The zoom control is easy to operate and allows you to concentrate more on picture composition and focusing. The servo zoom frees the left hand to operate the manual focus and aperture controls. However, quiet as the servo motors are, they can sometimes be heard by the camera microphone and they require more battery power.

Manual/automatic focus control. The focus control is a manual function (see Figure 1-3, Manual Focus Control Ring). To operate it, the operator rotates the focus ring on the zoom lens, either clockwise or counterclockwise, while looking in the viewfinder to determine if the picture is in focus. Some cameras have an automatic focus device. Obvious problems occur when focusing not on the object that lies next to the camera, but on the one farther away. The operator will have more control in the manual mode.

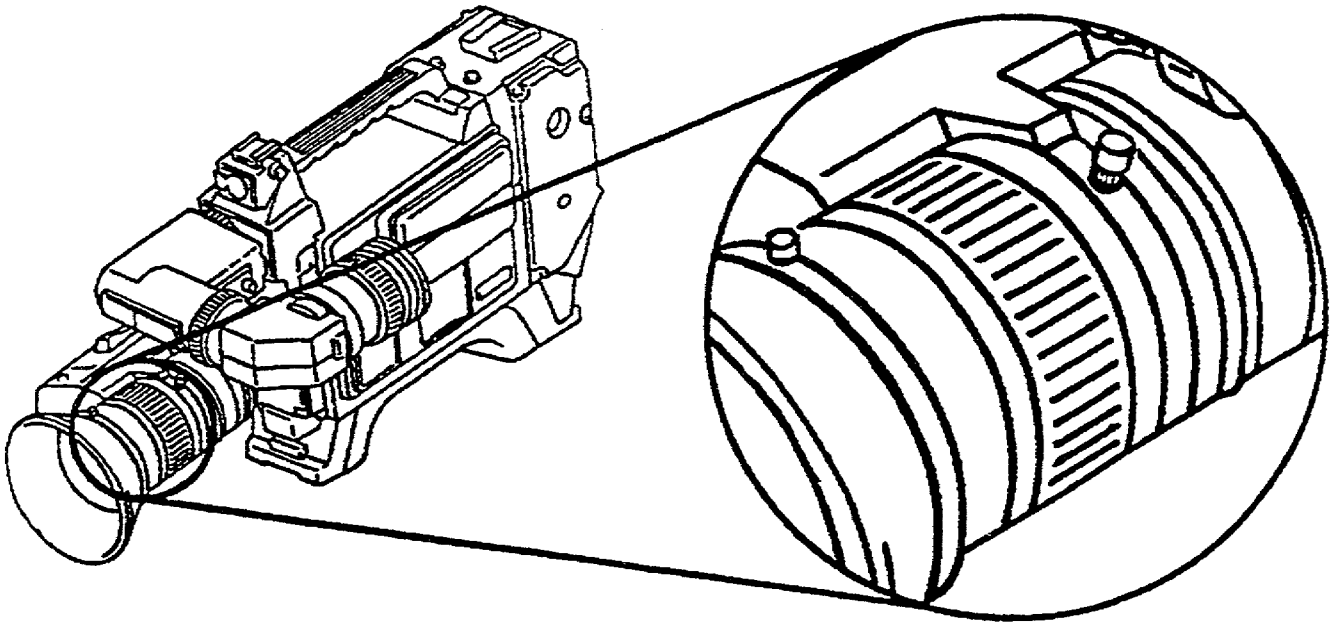


FIGURE 1-3. MANUAL FOCUS CONTROL RING

Getting The Most Out Of A Lens

Generally, lenses fall into one of three categories; wide angle, normal, and narrow angle or telephoto. Since the zoom lens can duplicate all three, we will discuss the characteristics of each.

Wide Angle Lenses

Field of view. The wide angle lens has a very wide field of view and very little magnification. The principal subjects seem relatively small in relation to the background and it is difficult to distinguish much detail in these wide shots.

Perspective. These lenses exaggerate depth and distance. Objects in the foreground will appear much larger than those in the background.

Movement. The speed of subject movement will be greatly exaggerated, especially when moving towards or away from the camera. Camera movement will not be nearly as noticeable as with longer lenses. Subject movement will be very easy to follow since the wide horizontal field of view, minimal magnification, and deep depth of field eliminate camera jitter and focus problems. This lens, (or the zoomed out configuration of the zoom lens), is an excellent choice when

you are trying to follow a lot of action. There are different types of camera movement both in and out of a television studio. Since ENG is accomplished more out of the studio than in, one of those types of movement (camera positioning) becomes much more important. Changing the aim of the camera left or right, up or down, we'll call "camera movements" and physically changing the location of the camera, we'll call "camera positioning." More will be discussed about camera movement and camera positioning in Subcourse DI0351, Electronic Journalism II, but for the purpose of learning about lenses and how they effect movement, you'll only need to know whether we are talking about changing the aim of the camera, or its location.

Distortion. When your subject is too close to the lens there will be immense distortion (see Figures 1-4a and 1-4b, Distortion). In Figure 1-4a the subject's hands appear unnaturally large in relation to her body. In Figure 1-4b her body appears elongated and her head and shoulders appear unnaturally larger than normal. Wide angle lenses create barrel distortion. Barrel distortion is when vertical lines in your field of view appear to bulge outward in the middle of the videospace and to converge at the top and bottom.



FIGURE 1-4a FIGURE 1-4b

DISTORTION

Limitations. Because of distortion when the subject is too close to the lens, you will use the wide angle lens primarily for long establishing shots. Picture definition and detail will be less sharp, making it difficult for the viewer to see all objects clearly. Also, because of the extensive depth of field, you won't be able to use selective focus to your advantage. There will be more information about selective focus later under depth of field. Another limitation of the wide angle lens of great concern to videographers is its susceptibility to lens flare. The wide field of view can inadvertently include the glare from studio lights or the sun. If you're not careful you can

even get the lights or the sun in the shot itself. If your camera has pickup tubes, this will cause burn in.

Normal Lenses

Field of view. Through a normal lens, the field of view will be about the same as normal vision.

Depth of field. Normal lenses will usually give a medium depth of field with the objects in the extreme foreground and background areas of the picture thrown slightly out of focus, but with a fairly wide area of acceptable focus around the principal subject.

Perspective. The normal lens will produce a natural depth perspective with no exaggeration of foreground-to-background subject size, depth, or speed of movement.

Movement. The movement of subjects toward or away from the camera will appear at near normal speed through a normal focal length lens. Since there isn't much magnification camera movement will not be exaggerated and it is fairly easy to follow a moving subject. However, camera positioning should be kept to a minimum since the jitter and shake of a moving camera could be obvious.

Distortion. Distortion will be almost nonexistent and the slight flattening effect of the normal angle lens may be flattering to people with prominent facial features.

Limitations. There are few limitations with the normal angle lens beyond the jitter and shake seen when the camera is being repositioned. With professional camera steadying equipment, even this can be overcome.

Telephoto (Narrow Angle) Lenses

Field of view. A narrow angle lens has a very narrow field of view and powerful subject magnification.

Perspective. The long lens, or the zoomed-in configuration of the zoom lens, compresses perspective and reduces the perception of space and volume. It also makes everything in the picture appear about the same size regardless of distance. EXAMPLE: The shot from the center field camera at a baseball game is usually zoomed in and makes the pitcher and the batter appear the same size even though the batter is sixty feet further away.

Movement. Extreme magnification and narrow horizontal field of view make it difficult to follow a rapidly moving subject. The focus is so critical and the field of view so

narrow that following a subject with the aim of the camera should not be attempted unless the movement of the subject is totally predictable. EXAMPLE: Following the horse along the backstretch at a horse race. To follow a subject with camera positioning is absolutely out of the question with a long lens. The slightest movement of the camera in this fashion will be greatly magnified.

Distortion. The compression of perspective in the long lens appears to flatten everything to a point that it removes depth perception. Heat waves rising from the ground will be magnified so much as to distort images. This lens will counter your efforts to give the effect of three dimensions.

Limitations. Although the long focal length lens will bring about greater detail of distant subjects, other aspects of the picture are effected negatively. This lens should be used in special applications only.

Focus

Focus with a lens is the same thing as focus with the eye. Sharp and clear is in focus, while fuzzy and unclear is out of focus.

There are two methods of setting the focus on a zoom lens. One, called zoom focus, is by zooming all the way in and setting the focus, then zooming out to the focal length desired. Once this is done, everything in the depth of field will remain in focus for that zoomed out shot, including the object focused on, provided the distance between it and the camera doesn't change.

The other is called rack focus. This is nothing more than setting the focus on something in the field of view. When this is done, only that object and other objects at the same distance will remain in focus as long as the distance between them and the camera doesn't change. Obviously a rack focus is used when there isn't time to zoom focus. There are times when the effects of a rack focus may be desired. EXAMPLE: When the viewer's attention is directed toward something in the foreground and we wish to lead their eye to another object. We can do this by changing the focus to bring the other object into sharp focus while the first object goes out-of-focus,

f-Stop

Just as in photography the camera pick-up device will operate properly only within a certain range of light intensity. If too much or too little light falls on the pick-up tube or chip, the picture quality will suffer.

Since you will use the camera both indoors and outdoors, you will have to adjust for the extreme difference in light levels.

The lens diaphragm, or iris, is used to control the amount of light that enters the lens, and thus the camera by enlarging or reducing the aperture. The f-stops indicate the size of the lens (diaphragm) opening. The lower the f-stop number, the wider the lens opening. When a lens is zoomed in, it will require more light, a wider opening and thus a lower f-stop number (see Figure 1-5, f-Stops & Iris Openings).

Most cameras have an automatic iris that allow the operator to devote his attention to other important aspects of videography such as framing, composition, etc.

Although the automatic iris seems ideal for ENG/EFP systems, it does not always work to the operator's advantage. With a fairly even illumination, the auto iris closes down when it sees an extremely bright area in a scene, or opens up when sensing a large dark area. This will cause silhouetting. This can be avoided by switching to manual iris control and exposing for the subject alone.

It is important for the ENG operator to know that f-stops determine more than just the amount of light entering the camera. They also affect the depth of field.

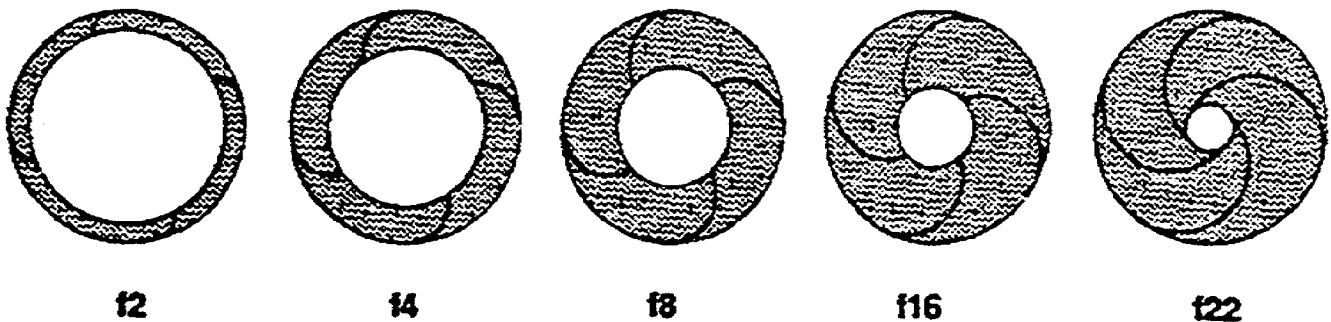


FIGURE 1-5. F-STOPS & IRIS OPENINGS

Depth Of Field

If you place objects at different distances from the camera, some objects will be in focus and some out of focus. The depth of field is that area of the field of view where the objects will be in focus (see Figure 1-6). The depth of field can be shallow or great. If the depth of field is shallow, only the objects in the middle ground may be in focus; the foreground and background will be out of focus. A large diaphragm opening (small f-stop number) will decrease the depth of field and a small diaphragm opening (large f-stop number) will increase the depth of field.

It's important for the ENG camera operator to understand this, because the same rules apply when the camera is moved. A great depth of field makes it easy for the camera operator to stay in focus while moving short distances. A shallow depth of field makes it impossible to move without getting out of focus.

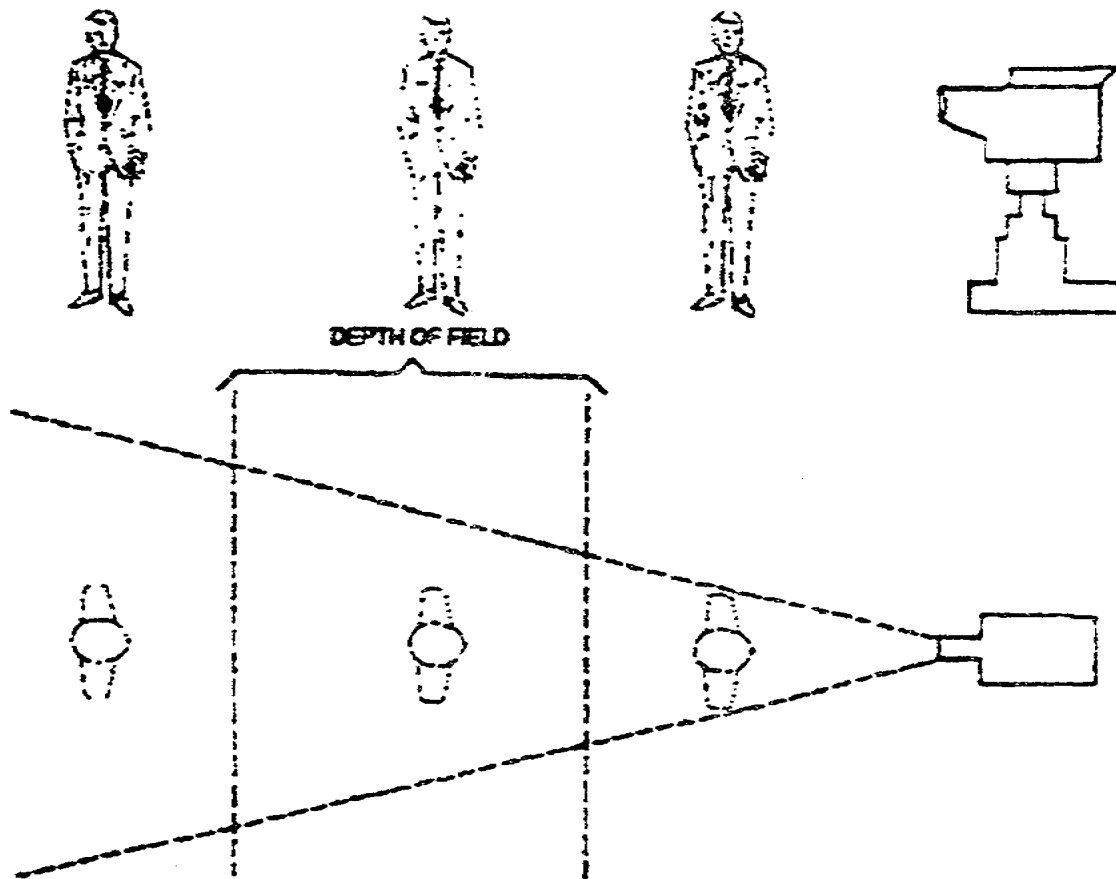


FIGURE 1-6. DEPTH OF FIELD

Although it seems that a great depth of field would be the most desirable in field operations, a medium depth of field is sometimes preferred, because in-focus objects are set apart from out-of-focus background. Thus, the object will be emphasized, and little attention will be drawn to unnecessary background. The foreground, middle ground and background will be better defined. The important thing for you, the operator, is to understand the basic principles and apply them properly.

Three things affect the depth of field. They are: (1) the focal length of the lens used, (2) the lens opening (f-stop), and (3) the distance between the camera and object.

- o Short lens focal lengths have a great depth of field. Long focal lengths have a shallow depth of field.
- o Large lens openings (small f1-stop numbers) cause a shallow depth of field. Small lens openings (large f-stop numbers) cause a great depth of field. A low light level will necessitate the opening of the lens diaphragms, which will cause a decrease in the depth of field.
- o The farther away the object is from the camera, the greater the depth of field. The closer the object to the camera, the more shallow the depth of field.

Some of these factors counter each other in practical application. A close-up shot with the lens zoomed all the way out (a short focal length/greater depth of field) would have a small camera-to-object distance (shallow depth of field). The same close-up shot done with the lens zoomed all the way in would have a longer focal length (shallow depth of field), but a greater camera-to-object distance (greater depth of field). With zoom lenses, the depth of field changes as they are zoomed in or out. When zoomed in, you have a shallow depth of field; when zoomed out you have a greater depth of field. Add to this, the lens diaphragm opening will increase as you zoom in and decrease as you zoom out, and you can see the need for a lot of practice.

Sometimes a limited depth of field can work to your advantage. As mentioned earlier, an out-of-focus background will not interfere with, or distract from your main subject. If there are small things in the immediate foreground they can almost be taken completely out of the picture with a reduced depth of field.

EXAMPLE: When shooting through small limbs of a tree, or a chain link fence, they will not even be seen if they are close enough and the camera is zoomed in on something far enough away.

Lenses For Effects

You will not be as concerned about lens effects for ENG as you would be for EFP. There are a few things you should know about different lenses and lens uses and the effects created by them.

Visual perspective of a zoom lens versus a camera dolly shot. There is an important difference between zooming in or out, and physically repositioning the camera closer or farther away. The wide use of a zoom lens and its ease of operation has caused many videographers and directors to rely on the zoom where they would be better served by repositioning the camera. A zoom lens simply magnifies or reduces an image but it is necessary to move the camera to get the full three-dimensional effect. This is particularly important when moving through doorways, and arches, or past furniture and other stationary objects. This movement of the camera is called a "dolly." This movement will be discussed more in the section covering camera operation.

The lens, body and viewfinder combination is called the **camera head**, because it is at the head of the chain of other essential electronic camera equipment. The camera head itself has a series of attachments and controls that help you use the camera efficiently and creatively.

RECORD/PLAYBACK SYSTEM

The video recorder, with the portable camera, offers a whole new concept in television production. Although VCRs are more complex electronically than audio tape recorders, they are no more difficult to operate. Currently, there are a number of videotape formats used in the broadcast industry: 3/4-inch U-matic, 1/2-inch Beta, Super VHS systems, and 8 millimeter, called "Hi 8." There are different schools of thought as to which are broadcast quality and which are not, but it is universally accepted that 3/4-inch U-matic and 1/2-inch Beta, are industry standard and the two formats commonly used in Army Broadcasting. Although the camcorder 1/2-inch Beta system started a revolution with its lightweight single system camera/recorder, and the other comparable systems carry it even further, choice of systems seems to be just that, a choice of systems. A basic understanding of 3/4-inch U-matic format will serve you for the purposes of editing to enable you to function in the field of ENG/EFP. Cassettes recorded on 3/4-inch VCRs are all interchangeable (Note: the 1/2-inch system is not compatible with the 3/4-inch system, and additional equipment must be used to dub from one format to the other). Besides the video track, the 3/4-inch U-matic cassettes have two audio channels, and a control track channel (see Figure 1-7)

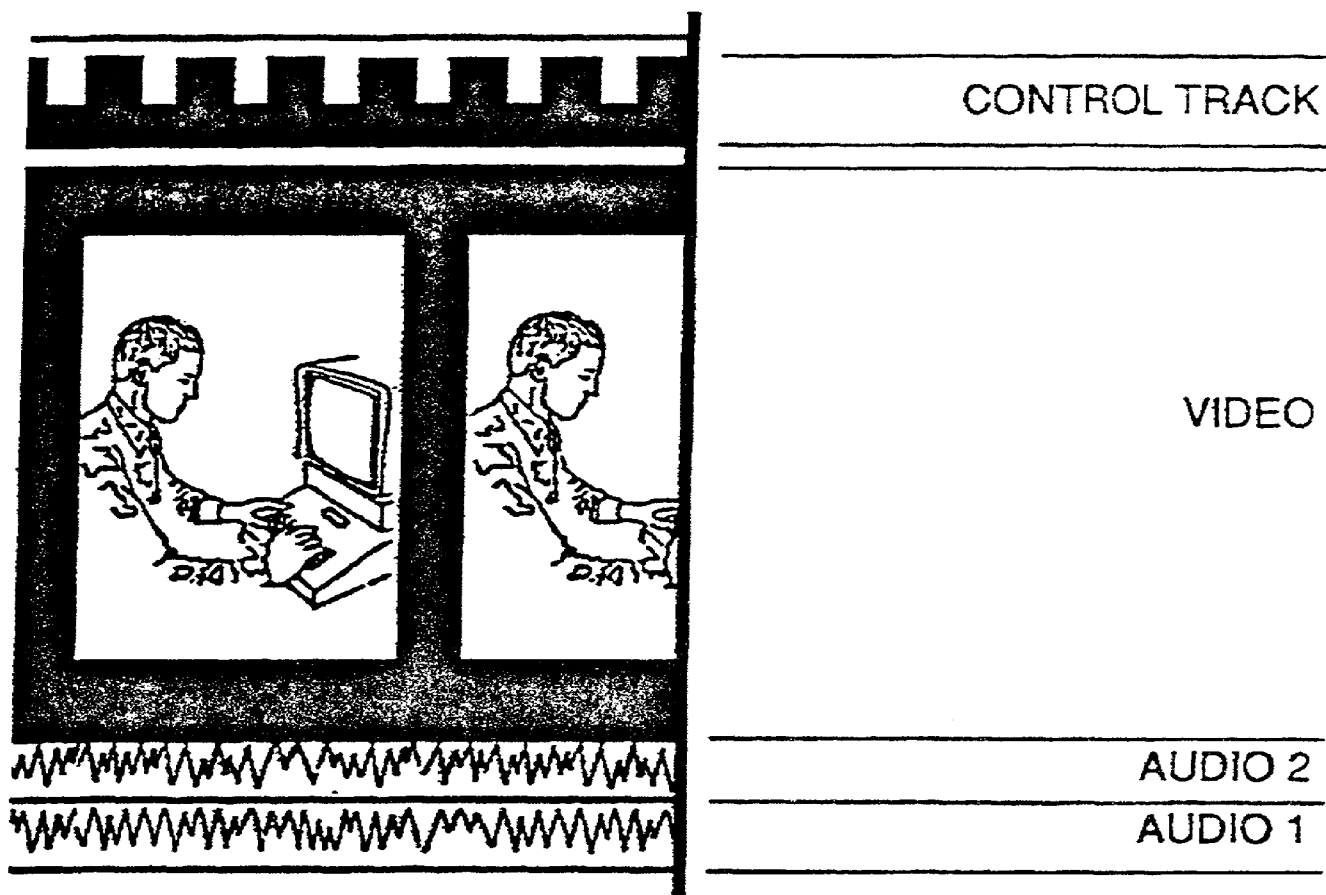


FIGURE 1-7. 3/4 INCH UMATIC TAPE FORMAT

Most portable VCRs run on a 12-volt DC battery or AC power. Currently, batteries available have a charge life of varying lengths and, if you hook up the camera to the same battery, the life is about half. For AC operations, an AC/DC converter is necessary. With AC operation, there is no time limit but you are always tied to the length of the AC cord.

PRACTICE EXERCISE

LESSON 1

SUBCOURSE NO. DI 0350

ELECTRONIC NEWS GATHERING/ELECTRONIC FIELD PRODUCTION

INSTRUCTIONS:

Review the material in this lesson. Answer the questions below by circling the "T" or "F" next to each question. Compare your answers with the answer key on the next page.

- T F 1. Electronic News Gathering (ENG) is the coverage of controlled events.
- T F 2. All television cameras operate on the same principle.
- T F 3. All color TV cameras need a minimum operating light level of 100 footcandles of illumination.
- T F 4. Lenses do not have a mechanism to control the amount of light admitted.
- T F 5. Zoom lenses can only be operated by manual controls.
- T F 6. The 3/4-inch format is currently the only (ENG) format used in the broadcast industry.
- T F 7. Most portable VCRs run on 9-volt batteries or AC power.

ANSWER KEY

PRACTICE EXERCISE

LESSON 1

SUBCOURSE NO. DI 0350

ELECTRONIC NEWS GATHERING/ELECTRONIC FIELD PRODUCTION

1. FALSE (Page 2)
2. TRUE (Page 4)
3. FALSE (Page 6)
4. FALSE (Page 14)
5. FALSE (Page 8)
6. FALSE (Page 17)
7. FALSE (Page 18)

LESSON TWO

LIGHTING FOR ELECTRONIC NEWS GATHERING

46R Soldier's Manual Task: 214-177-1212

OVERVIEW

LESSON DESCRIPTION:

This lesson will provide you an overview of Lighting for Electronic News Gathering/Electronic Field Production (ENG/EFP) and the equipment necessary to perform these functions.

TERMINAL LEARNING OBJECTIVE:

ACTION: Describe common ENG lighting equipment and its purpose and functions

CONDITION: You are given the material presented in this lesson.

STANDARD: Perform all the duties described in this lesson.

REFERENCE: The material contained in this lesson was derived from the following publication:

STP 46-46R14-SM-TG Soldier's Manual & Trainer's
Guide, Broadcast Journalist, MOS 46R Skill
Levels 1/2/3/4/, August 1988

LIGHTING FOR ELECTRONIC NEWS GATHERING

INTRODUCTION

When you leave the comfortable confines of the television news room or production studio for a remote or location assignment, you will encounter more than a few unique problems. The problems can be overcome if you are prepared. Location remotes, are normally ENG news coverage. So let's direct our attention to this area.

One of the major problems is the availability of lights. If you are outdoors on a sunny day, there isn't much of a problem. However, when you move indoors or shoot at night, you'll need a portable, lightweight and versatile lighting system that either runs on batteries or plugs into a wall outlet without blowing fuses. This calls for a small, efficient, variable-beam light that's part of most ENG systems .

To understand lighting for ENG systems, we must first understand something about basic lighting for television. All the principles of television lighting apply to lighting for electronic news gathering with a few interesting wrinkles thrown in. In a studio the lighting is much more controlled than in the myriad of situations and circumstances you'll experience in the world of ENG. Most of the time the production will work with the existing lighting rather than the lighting being created or fit to the needs of the production. However, you'll need a complete understanding of basic television lighting to produce technically proficient and aesthetically pleasing news stories that will draw and hold your audience's attention.

TELEVISION LIGHTING

Lighting for television can be broken down into six basic objectives. They are:

- o Fulfill the technical requirements of the system. The lighting must provide enough illumination for the television camera to see and reproduce an image. Low light levels will produce inferior video.

- o Give the illusion of three dimensions on a two dimensional surface. (The television screen) The television screen has height and width. Since we cannot actually add depth, we must create the illusion of it. We can do this with camera angles, the considered placement of objects in the videospace and most commonly, with the careful use of lighting
- o Guide the viewer's eye to important points in the viewing space. It's a proven fact that our eye is drawn to a bright spot first. Using this, we can lead the viewer's eye and ensure that all the important points are covered.
- o Establish or convey a mood. The overall mood of a story or scene can tell the story as much as the scene itself. Lighting can convey the overall mood to the viewer.
- o Establish or fix the time. Lighting can fix the time of day as convincingly as a clock on the wall without being so obvious or blunt.
- o Contribute to the aesthetic quality of the scene. Perhaps a good analogy of what aesthetic quality does for something is the difference between music and noise.

Of course not all six objectives will apply equally to every scene or even apply at all to absolutely every frame of video, but knowing what they are and how they work will aid you in being more effective when telling the story.

WHAT IS LIGHT?

Light is electromagnetic radiation, transmitted from any number of natural or artificial sources. The human eye can only see a small fraction of the electromagnetic spectrum. That light we can see is called white light although it is made up of all the colors of the rainbow. If you understand the cause of a rainbow, or the effect of a prism, you know that spectral hues are different wavelengths of light. These wavelengths vibrate at different frequencies and appear to us as different colors.

PROPERTIES OF COLOR LIGHT

When we consider the television camera and its operation, we must remember the three basic attributes of color light are hue, saturation and brightness. Hue is the color of the light itself. Saturation is the intensity of the color or how much white light is mixed in with it. (Remember white

light contains all the other colors) You might say "how pure the color of the light is," and brightness is the overall brightness of the color, or how much light it will reflect. Although these three attributes of color light are entirely independent of each other and surrounding objects and difficult to measure accurately, our best understanding of them is in a relative sense. Since it wouldn't matter to us what the measurement of brightness of a particular color was on the television screen, how bright it appears next to the colors around it does matter.

One thing we must keep in mind when considering colors for television, is that not all viewers are watching in color. Therefore, we must know what effect a color will have on the gray scale. This is one of the reasons that all viewfinders on portable cameras are monochrome. Be aware that something in the picture that is changing colors may not be evident to those viewing in black and white unless the brightness is also changing.

COLOR TEMPERATURE

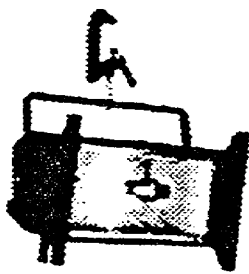
Color temperature is the amount of certain colors making up a particular white light. Color temperature is measured in degrees Kelvin. Since the video camera changes images into electronic signals, the wavelengths of light that vibrate at various frequencies, making up the different hues or colors, will have an effect on the output of the camera. As the color temperature of light changes, the human eye adjusts to it much better than the video camera. Even the human eye detects color temperature change though. EXAMPLE: Late afternoon light appears more orange than midday light. This is a result of the light passing through more atmosphere and being filtered by more particles in that atmosphere.

The clearest and simplest way to think of color temperature without getting into complicated formulas is to say that light of a lower color temperature appears more toward the orange end of the scale while light of a higher color temperature appears more toward the blue end of the scale. Studio lighting is standardized at 3,200 degrees Kelvin. Daylight sources are balanced in the range of 5,000 to 7,000 degrees K. We need not know what a degree Kelvin is specifically as long as we accept it as a unit of measure and know how color temperature effects the color television picture. Of course, it only effects color video, not monochrome.

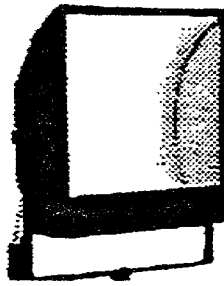
HARD LIGHT, SOFT LIGHT

The difference between hard and soft light is another critical aspect in lighting for ENG. Hard and soft light

appear differently in the video picture and go a long way toward directing attention, establishing a mood and contributing to the aesthetic appeal of your video. Hard light is intense, directional and creates strong shadows. Artificial light sources that produce hard light usually have hard, shiny rather shallow reflectors. Soft light is a more spread out defused light that creates fewer, softer shadows. Soft light is produced by an instrument with a rough or matte surfaced reflector that is deeper or more curved allowing for more angles of reflection (see Figure 2-1). Soft light is used mostly to fill in and soften shadows and provide a more even light.



BROAD



SOFT LIGHT



LENSLESS SPOTLIGHT



SCOOP



ELLIPSOIDAL SPOTLIGHT



FRESNELL

Figure 2-1. ARTIFICIAL LIGHTING INSTRUMENTS

CONTRAST RANGE

Contrast range is critically important since the television camera is not nearly as sensitive as the human eye. Television cameras can handle a range of only 3 to 60 percent reflectance; a 20:1 ratio. Simply stated that means that the brightest part of the video picture can only be 20 times brighter than the darkest part for the camera to be able to reproduce it accurately. Note the term accurately. The camera will still reproduce everything in the picture that is within that range, and will begin to lose accuracy in the reproduction of those elements of the picture that exceed that range. In Electronic News Gathering, we seldom have control of those elements in the videospace. We must

learn to adapt as best we can to what exists. News events will not allow us to control the contrast range, but we must know how it affects our video and adjust. **EXAMPLE:** If there is an important scene that we must videotape that has a bright spot that exceeds the 60 percent reflectance, we must know that the camera will darken down the rest of the picture in bringing the spot into range. We then decide if we want the other parts of the picture to be darkened or if we go to manual iris and live with a washed out effect in the bright area. **CAUTION:** If you have a tube camera, be careful not to allow bright areas to cause burn-in.

MEASURING LIGHT FOR TELEVISION

Measuring light accurately enough for the television camera requires an instrument. As previously mentioned, sufficient light is a technical requirement which must be met in order for the camera to operate properly. Insufficient light levels will cause a camera to produce pictures with video noise, lag and color distortion. Most light-measuring devices are calibrated in foot candles and as mentioned earlier, most color cameras require between 100 and 250 foot candles. As we stated earlier, whatever the unit of measure, you must have a device that speaks the same language as your camera's manual. **EXAMPLE:** If the manual calls for a minimum of 100 foot candles, you need a light meter that measures foot candles. Accurately measuring the light is something done more in EFP than in ENG. Since we have little or no control of the contrast range in ENG, we usually concern ourselves with whether there is sufficient light, and when it is obvious that the range is exceeded, how we correct it. There are five ways to control light intensity when using artificial light. First, the wattage of the lighting instruments. Secondly, lamp to subject proximity. As the subject gets closer to the light source, it will decrease the area over which the light is spread and make it more intense (see Figure 2-2).

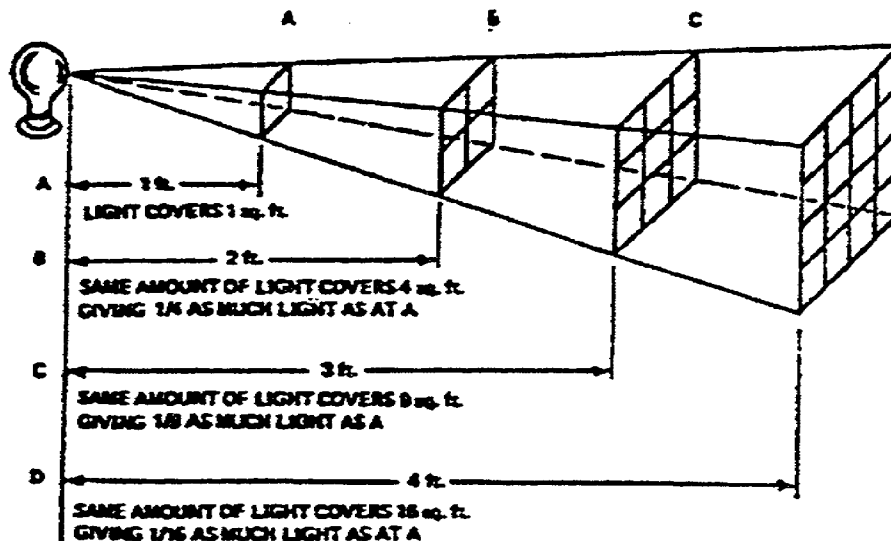


FIGURE 2-2. EFFECTS OF DISTANCE ON BRIGHTNESS

Keep in mind that by doubling the distance between light source and subject, you quadruple the area over which the same amount of light is spread, thus cutting to one fourth the intensity of the light.

The third method of controlling light intensity is with the use of scrims or screens. Scrims are translucent gauze or fiberglass in a frame that can be mounted on the front of a light instrument. Scrims cut down the amount of light allowed through. Screens are just like the material you'll find on any screen door. They do not defuse the light like scrims and are mostly used on spotlights to lessen the intensity without changing the hard directional beam. Key lights, for example, are often used with screens.

Fourth, the spotting of the beam on a spotlight will concentrate the beam or widen it. This is comparable to the effect of moving the light closer or further away, except without actually moving the light instrument.

The fifth way to control the intensity of light, is to lessen the voltage going to the instrument much like a dimmer in a home or the house lights in a theater. There's a negative side to this in that it will also lower the color temperature of the light.

Knowing how to strengthen or weaken the intensity of light won't help us much if we don't understand its applications. The best starting point to light any situation is the basic three-point lighting scheme. The intent of this scheme, in addition to providing enough light for the camera to see, is to create the illusion of three dimensions on the two dimensional television screen. (Height and width, but no depth). Since the screen on which the viewer sees the subject is only two dimensions, any appearance of three dimensions must be an illusion. It is created with the use of light and shadows. Bear in mind that you'll need the shadows. Your intent should be to use the shadows to accomplish your aim, not to eliminate them. Of course, you'll want to use them subtly to keep your product as aesthetically pleasing as possible. Figure 2-3 illustrates the basic three-point lighting scheme.

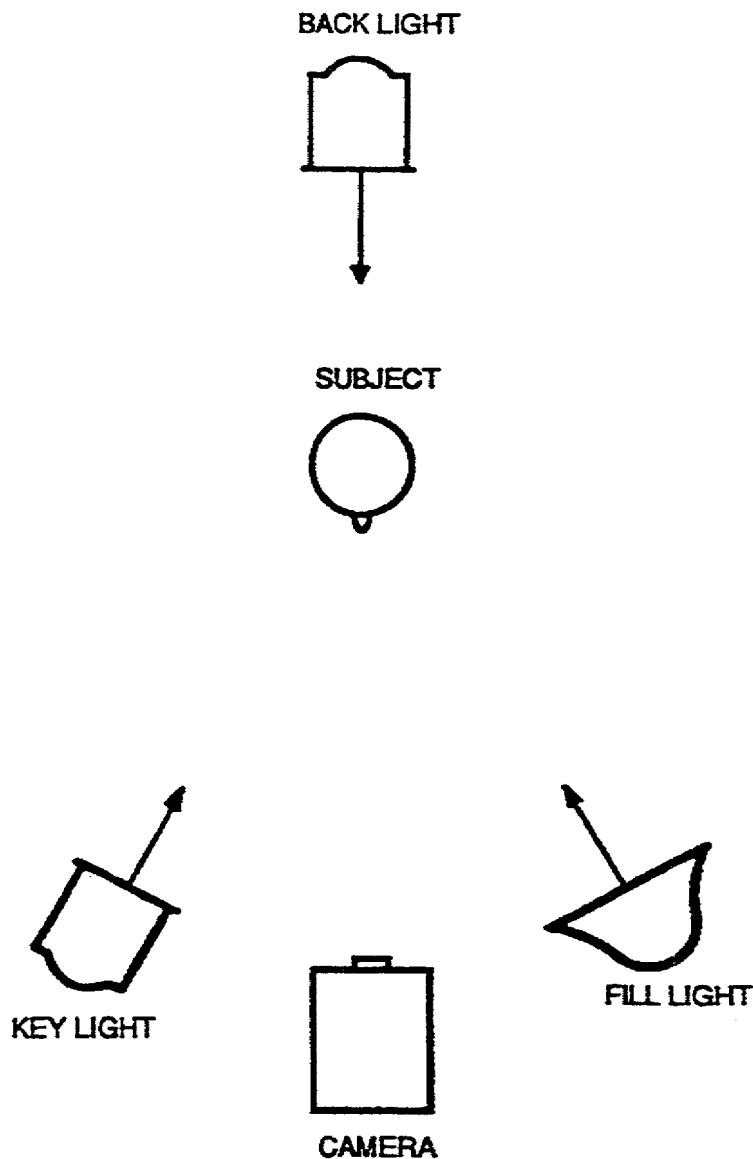


FIGURE 2-3. BASIC THREE-POINT LIGHTING SCHEME

The three points in the scheme are the key light, the fill light and the back light.

The **key light** is the apparent main light source. As the main source, it provides sufficient light to operate the camera, and act as the reference point for all other lighting. It should be placed in front of the subject, to the side about 45 degrees, and elevated 30 to 35 degrees. You may want to make adjustment for any number of reasons, but that's a good starting point. Key lights are usually spotlights.

The **back light** is to separate the subject from the background by casting a rim of light across the head and shoulders of the subject. The back light should be placed

at an elevated angle, but not so much as to light the top of the subject's head. A good starting point for the back light is directly behind the subject, elevated 30 to 35 degrees. If your light is mounted on a stand, move it off to the side a little to get the stand out of the picture. Back lights are also most often a spotlight.

The **fill light** fills in and softens the harsh shadows created by the key light. It is placed on the opposite side of the camera from the key light and also elevated 30 to 35 degrees. Since fill lights usually need a broader beam, they are most often scoops.

News rarely happens in a studio, unless it is a formatted news show or studio interview, where the color temperature and lighting may be controlled. In the studio, production lights are quartz-iodine or quartz-halogen lights. They should all have the same color temperature standard of 3,200 degrees Kelvin. The standard has been set by the television engineers. If we wanted to recreate daylight in the studio, we would have to alter the color temperature to 5,600 degrees Kelvin by changing the lights or using gels.

ENG/EFP crews should always carry portable lights and use them frequently. You may not always need them, but you won't have time to go back to the station and pick up a set. There are occasions when video quality has to suffer to get the news story on videotape, but such times should be rare.

You should have at least three lights with tripods (stands), and clamps for mounting in all locations and situations. The more extension cords you have the better.

Another problem in lighting remote locations is color contamination from different light sources. Be aware of mixing lights of different color temperatures (Subcourse DI 0370, Television Lighting, Audio and Scenery, has more detailed information on TV lighting). **A rule to remember is, white balance whenever the light conditions change.**

PORTABLE LIGHTING KIT

Portable lighting kits will supply you with the lighting equipment you will need in most situations. They include: Lighting instruments, tripods, (short) power cables, battery packs for each light and accessories such as screens and filters. You may want to include a .set of insulated gloves and some heavy-duty masking tape or gaffer's tape and extra bulbs (at least one for each lighting instrument).

There are many commercially available selections of ENG/EFP lighting kits. They usually provide at least enough instruments and accessories for basic three-point lighting.

The color temperature of lighting kit instruments is 3200 degrees Kelvin and they are usually variable-focus lighting instruments which may be adjusted for use as a key, back or fill light (see Figure 2-4, Variable-Focus Instrument)

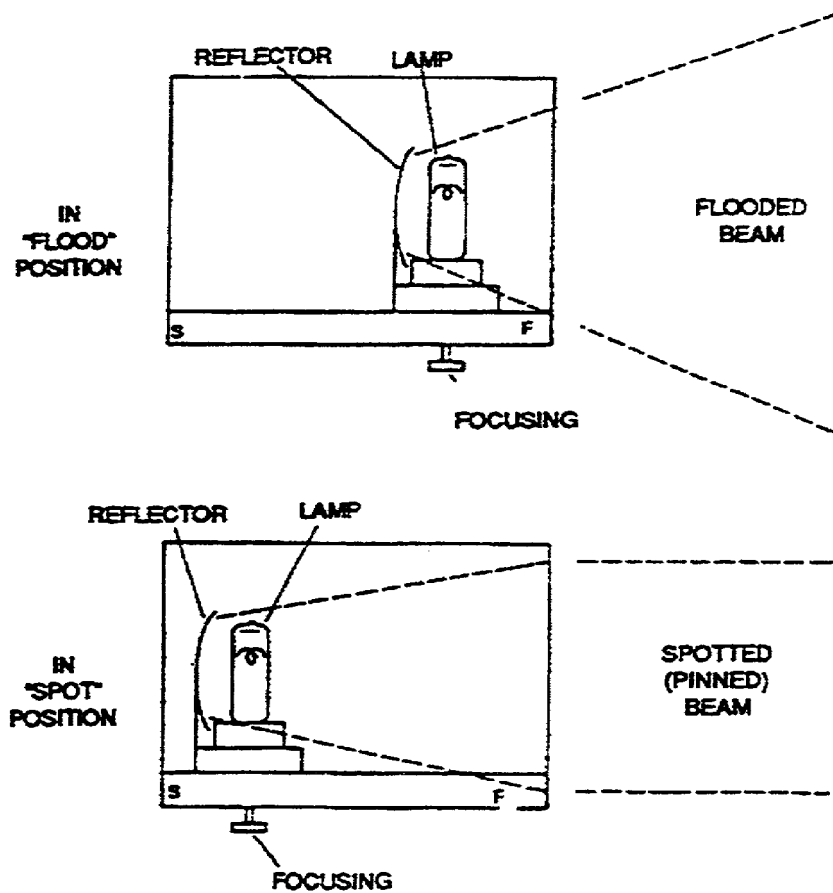


FIGURE 2-4. VARIABLE-FOCUS INSTRUMENT

ACCESSORIES

Your light kit should contain accessories such as barn doors, screens and reflectors. These accessories are discussed in Subcourse DI 0370.

Barn Doors

Barn doors are attached to a ring which is connected to the body of the lighting instrument. The doors may be opened from the top and bottom to crop the light.

Screens

Screens are small round or square pieces of metal screening that are placed in front of the light to reduce the light intensity. The screening does not change the color temperature of the light. Strong shadows may be reduced or eliminated by using screens.

Reflectors

Folding reflectors are sometimes available in lighting kits and sometimes have to be obtained separately. Reflectors bounce natural or artificial light toward the subject in order to fill in or remove strong shadows.

Setting up these accessories takes time, but results will be well worth the time spent. They make the subject look as natural as possible and help eliminate lighting conditions that distract the viewer.

The Five P's rule -- "Proper Planning Prevents Poor Productions" -- is a good guideline when planning any news or production assignment. Only experience will help you to become familiar with many of the requirements before you leave the station. In remote situations, the Five-P' s will save you a lot of headaches.

An extensive review of Lighting for Television may be found in Subcourse DI 0370.

PRACTICE EXERCISE

LESSON 2

SUBCOURSE NO. DI 0350

LIGHTING FOR ELECTRONIC NEWS GATHERING

INSTRUCTIONS:

Review the material in this lesson. Answer the questions below by circling the "T" or "F" next to each question. Compare your answers with the answer key on the next page.

- T F 1. Lighting Kits for ENG do not utilize variable beam instruments.
- T F 2. Light is electromagnetic radiation, transmitted from any number of natural or artificial sources.
- T F 3. Portable lights are rated at 3,200 degrees Kelvin.
- T F 4. The fill light is the main light used in lighting the subject.
- T F 5. The Five "P's" rule should not be used in remote situations.

ANSWER KEY

PRACTICE EXERCISE

LESSON 2

SUBCOURSE NO. DI 0350

LIGHTING FOR ELECTRONIC NEWS GATHERING

1. FALSE (Page 22)
2. TRUE (Page 23)
3. TRUE (Page 30)
4. FALSE (Page 29)
5. FALSE (Page 31)

LESSON THREE

FRAMING AND COMPOSITION

46R Soldier's Manual Task: 214-177-1315

OVERVIEW

LESSON DESCRIPTION:

This lesson will provide you an overview of television framing and composition.

TERMINAL LEARNING OBJECTIVE:

ACTION: Describe common terms for varying shots and what is acceptable as proper composition of them.

CONDITION: You are given the material presented in this lesson.

STANDARD: Perform all the duties described in this lesson.

REFERENCE: The material contained in this lesson was derived from the following publication:

STP 46-46R14-SM-TG Soldier's Manual & Trainer's
Guide, Broadcast Journalist, MOS 46R Skill
Levels 1/2/3/4/, August 1988

FRAMING AND COMPOSITION

INTRODUCTION

Framing and composition are important in television production because the audience or viewer must receive all the video information through an instrument that has no peripheral vision. Since we see only what the director and camera operators show us, it is of utmost importance that the camera operator develop a feel for pictorial composition which is learned through intuition, practice and experience. Over the years there have been many guidelines developed through the work of painters, photographers, cinematographers and videographers. Although there is no substitute for intuition, practice and experience, you will be able to begin by applying a few basic principles.

NEEDS AND WANTS

There are many items you need to take into consideration when deciding how to show a subject. However, two basic points should be kept in mind that will make sure you have video picture impact. They are:

- o show viewers what they need to see
- o show viewers what they want to see

Viewers need to see the event as it is occurring or you would not be taking the time to shoot. So, the event you are shooting has caught your attention. Now that your interest has been aroused, the other is the viewer's want to see and explore the side action that makes the event interesting and exciting.

The best way to describe and fill the needs and wants of the viewer is to observe the event as it is taking place, as an impartial viewer. It's almost as if you are watching this happen in your living room, instead of from behind the camera. You should be involved in the event but not in the actual action.

Video Pictures

Your point of view (the way you describe what is taking place) is done with video-pictures. This point of view is accomplished by two different, but related, functions:

- o framing
- o composition

These two terms are often interchangeable, but for right now let's look at them separately.

Framing. Framing refers to how the various elements in and out of the video picture relate to each other, and how they are shown to the viewer. Simply put, these are all the important elements within the main picture area.

Composition. Composition refers to the organization of the important elements within the picture(s) and their artistic/aesthetic relationship to each other in the frame. The complete picture to the viewer is then unified or understandable.

These two concepts are closely related, but once you understand how to frame the shot, and compose those elements within the picture in an aesthetic manner, the two concepts merge.

Visual Statement

The main point to remember when setting up any shot for framing and composition is its **visual statement**. The visual statement is your point of view -- the concept you are trying to convey to the viewer. A picture that does not show the viewer the main action is not an effective shot or visual statement.

We have all seen television shows that have left us confused or frustrated because the shots the director had selected or the camera operator framed and composed did not present the visual information we needed or wanted in order to enjoy the program. For example, when the action happens so fast that the camera operator can't respond quickly enough to the events taking place, such as an accident happening on a race track. It's also possible for the director to be fooled when a score is made by a different player than expected.

Each situation is different. You will have to let your experience and feeling for the program material guide the way you frame and compose the shot (s). Experience will teach you the best way to frame and compose.

Framing Loss

The picture that is seen by the viewers is not exactly the same picture that is seen by the camera operator. The camera picture, through transmission to the viewer's set, loses about 10 to 15 percent on the outer edges or borders are cropped or lost. This is why the center of the picture is so important when framing and composing the shot (Figure 3-1). Some operators use a grease pencil to mark the outer

edge of their viewfinders to let them know where the main area of the picture is and to keep all essential elements within this area so the information is not lost. In a studio environment, the director has the ultimate responsibility for framing and composing the final picture or statement. But in a field situation, the camera operator has this responsibility. So it's a lot easier if everyone sets up his shot(s) with the main area in the center of the viewfinder.



FIGURE 3-1. FRAMING LOSS

FIELD OF VIEW

The field of view is of critical importance to the camera operator. The field of view shows the relationship between the main object of the picture and its surroundings.

A good camera operator must be able to properly compose and frame shots. Picture composition is nothing more than the organization of the visual elements (statement) within the available videospace. When framing a shot, the camera operator needs to keep in mind the essential area of the picture. Remember what is seen in the camera viewfinder is not what is seen on the home TV screen. The picture that leaves the TV camera is processed through the TV system and is electronically cropped or reduced.

Since 10 to 15 percent of the picture around the outer border area is lost during transmission, what you see is not necessarily what the viewer gets. You should always frame shots to allow for that 10 to 15 percent border loss.

Another aspect to keep in mind is that most cameras viewfinders are not exact. So even if the shot looks OK in your viewfinder you may have to fine-tune the shot. Experience with the camera system will teach you the quirks of each system.

There are several different camera shots the operator must be able to set up quickly and accurately:

- o extreme long shot
- o long shot
- o medium shot
- o close up
- o extreme close up

These basic shots are the foundation of all other camera shots. They're used to create certain emotional effects in the viewer. Learning and understanding how to achieve these basic shots quickly and proficiently is the mark of a professional cameraman.

Extreme Long Shot

The extreme long shot, also known as the establishing shot, is achieved when the camera lens is zoomed all the way out. This shot is used to let the viewer know where he is; it sets the scene; the background dominates (Fig. 3-2).

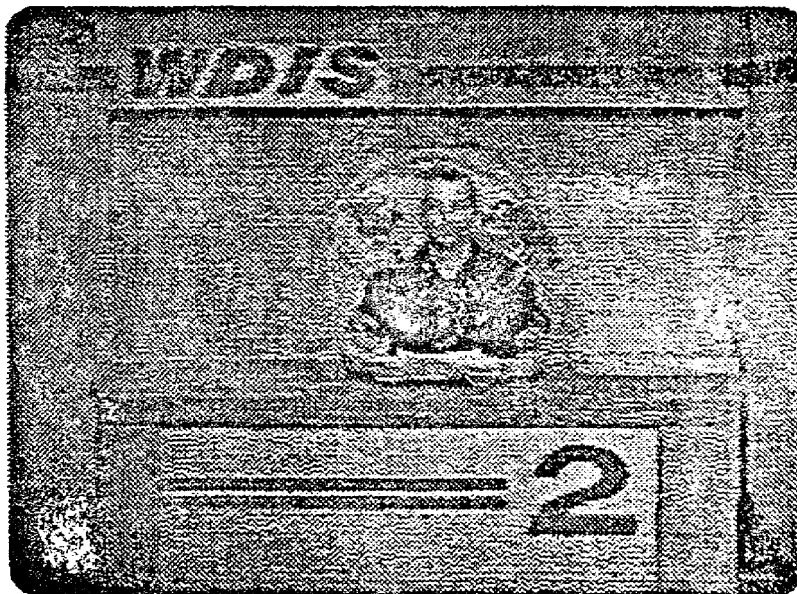


FIGURE 3-2. EXTREME LONG SHOT

Long Shot

The long shot is slightly closer than the extreme long shot but the background still dominates (Fig. 3-3). Everything is in focus.



FIGURE 3-3. LONG SHOT

Medium Shot

In the medium shot, the subject dominates the picture. The medium shot is used primarily to show the subject in relation to the action in a scene (Fig. 3-4). The middle ground and foreground are normally in focus.



FIGURE 3-4. MEDIUM SHOT

Close-up

The close-up shot focuses primarily on the subject with only a small portion of the background-shown (Fig. 3-5).



FIGURE 3-5. CLOSE-UP

Extreme Close-up

The extreme close-up shows the subject totally dominating the shot. The close-up is used to show details of extreme importance in the picture (Fig. 3-6).



FIGURE 3-6. EXTREME CLOSE-UP

Now let's look at the shots again using, just one person. The extreme long shot establishes the scene. The long shot would be from the subject's feet to his head. Remember to allow space at the top for framing loss. The medium shot or knee shot would be from the head to the knees. The medium close-up is from the waist to the top of the head, or it could be a bust shot from the bottom of the bust to the top of the head. The close-up or head shot is from about the chin to the top of the head. And the extreme close-up is usually just a specific part of a person's face.

Generally, if the subject is facing directly into the camera and is the only subject in the field of view, the subject should be centered.

Lead Room

If the subject is at an angle to the camera, the camera operator needs to provide lead room or speaking room. A good rule of thumb is to center the nose, then pan right or left respectively and allow for head room.

If your subject or object is going to move on camera, e.g., walk across or drive through the scene, you need to leave more space in front of the object than behind (Fig. 3-7 Lead Room).



FIGURE 3-7. LEAD ROOM

Multiple Subjects

The term four-shot means the shot contains four subjects or objects. Likewise, the three-shot designates three subjects or objects. The two-shot identifies two subjects or objects. And the one-shot contains only one subject or object in the picture.

CAMERA ANGLES

Camera angles include the normal angle which show the scene as we see it in real life, at about eye level.

Shooting over-the-shoulder adds depth to the picture and establishes a relationship between individuals.

The high camera angle that shoots down on the subject makes the subject appear smaller than he really is.

The low camera angle looking up at the subject makes the subject look taller and overpowering (Fig. 3-8).



Normal angle



Over-the-shoulder



High angle



Low angle

FIGURE 3-8. CAMERA ANGLES

PRACTICE EXERCISE

LESSON 3

SUBCOURSE NO. DI 0350

FRAMING AND COMPOSITION

INSTRUCTIONS:

Review the material in this lesson. Answer the questions below by circling the "T" or "F" next to each question. Compare your answers with the answer key on the next page.

- T F 1. With regards to framing and composition, keep the needs and wants of the viewer in mind when shooting an ENG report.
- T F 2. There is no difference between framing and composition.
- T F 3. The viewer sees exactly what the camera operator sees.
- T F 4. You need not allow any more lead room than normal, even when the subject is moving across the screen.
- T F 5. If the subject is at an angle to the camera, use the person's nose as a reference to center the picture.

ANSWER KEY

PRACTICE EXERCISE

SUBCOURSE NO. DI 0350

FRAMING AND COMPOSITION

1. TRUE (Page 36)
2. FALSE (Page 36)
3. FALSE (Page 37)
4. FALSE (Page 42)
5. TRUE (Page 42)

LESSON FOUR

VIDEO SCRIPTWRITING

46R Soldier's Manual Task: 214-177-1321

OVERVIEW

LESSON DESCRIPTION:

This lesson will provide you an overview of scriptwriting for television.

TERMINAL LEARNING OBJECTIVE:

ACTION: Describe format and techniques for television script writing.

CONDITION: You are given the material presented in this lesson.

STANDARD: Perform all the duties described in this lesson.

REFERENCES: The material contained in this lesson was derived from the following publications:

STP 46-46R14-SM-TG Soldier's Manual & Trainer's
Guide, Broadcast Journalist, MOS 46R Skill
Levels 1/2/3/4/, August 1988

Defense Information School, Broadcast
Journalism Style Guide

VIDEO SCRIPTWRITING

INTRODUCTION

The ability to write comes from much learning and practice. It's difficult, if not impossible, to teach someone to write, much less write well, in one short lesson. This lesson will give you basic rules of broadcast writing and how it differs from writing for the print media. The single most important direction in learning to write is to...write, write, write. Reading also helps a lot. Observe the writings of others.

PROCEDURES AND LIMITATIONS

When writing for broadcast, you should apply six "C's". They are; **CLEAR ... CONCISE ...CONVERSATIONAL ...COMPLETE ...CURRENT** ...and, most importantly, **CORRECT**. Let's address each of these points, one at a time.

Clear

Broadcast copy must be clear. In printed copy, the reader can reread anything that isn't completely clear to him. In the broadcast medium, the viewer hasn't that luxury. If something isn't clear, he won't understand it, and he can't go back over it since it's being read to him by someone else who isn't going to repeat it. Once gone, it's gone forever.

Concise

The need for this comes from the value of time in the broadcast industry. Since air-time is so valuable, we can't afford to use any more of it than necessary.

Conversational

The copy is going to be read to its intended audience. It should be done in a conversational manner, something that's possible only if the copy is written conversationally.

Complete

There are occasions when something will be presented in multiple parts or segments. It must still be complete to the extent that it can stand alone. If something is going to be multiparted, each segment must still be complete as a part. That is to say that there must be something to tell

the audience that there is going to be more to come and it'll probably contain information such as where and when it will be presented. So even though the entire story isn't being presented in one piece, each piece is still complete as a part.

Current

Although there are some exceptions, copy should generally be written in the present tense. When something is presented as being of or about another time, it is presented as in the present. For example, even if we receive something that is of a historical nature, we write about it in the here and now. We never lose sight of the fact that that's where we are, so the copy shouldn't either.

Correct

The importance of being correct cannot be stressed enough. Broadcast media credibility is on the line with every story aired. "I saw it on television" seems to be enough proof for many people. This has both good and bad points. It requires us to work diligently to make sure of accuracy, but it adds a certain value to those things we say in our video scripting.

The structure of a broadcast news story is usually the reverse of that for the print media. The first thing in the broadcast story is the "WHAT." This attracts the listeners' attention and alerts them to what is about to follow...the details. Since a viewer cannot absorb all the facts in the first line, they must be given them in a form that will enhance understanding. Instead of "What happened to who, when and where with a why thrown in" and then explaining it in the rest of the story, broadcast style is more like "What happened", "It happened where and when", "This is why it happened", and we'll put in the how if we have it.

The Lead

The lead is the most important sentence in a broadcast story and should be an attention-getting sentence. It should have enough information to pique the listener's interest, without overwhelming him. It should be written as a general "what happened." There is an art to writing good leads, one of the reasons broadcast writing is difficult to teach. A lead sentence should be 20-words or fewer and contain as much information as possible without overloading the listener. To begin the sentence, use one or two words that are NOT essential information in the story. It's not good to begin with numbers that are essential for the same reason. Much

of the time, the viewers' mind isn't geared up for the story and it takes a word or two for them to be fully alerted to receive the essential information. Usually, a lead can be made much better by changing it around a little. EXAMPLE: "130-thousand soldiers could be cut from the Army in the near future, it was announced today." The listener would better understand this if it were worded, "The Army announced today it is anticipating manpower cuts of 130-thousand in the near future."

The Body

After the lead, the story must have a logical development. This is the body. It's quite simply telling the rest of the story in an orderly fashion, flowing smoothly to an end. Of course, the most important fact will come next and the next most important fact next, and so on. With practice you will learn to discern the important from the trivial. This is of utmost importance in broadcast writing because "air time" is limited and valuable. Typically, the same story will be divulged in both the print and broadcast media. It isn't at all uncommon for the broadcast version to be only one tenth as long as the print version.

Tense

The natural tense for broadcast copy is the PRESENT TENSE. This is because most news reporting is of immediate, or at least, very recent news. However, every story doesn't have to sound as if it happened in the last minute. As a matter of fact, many events which occurred in the past must be reported in the past tense. A good example of this is in the reporting of sports scores. It's acceptable to headline something in the present tense to entice the audience to come back after a break, such as "Ohio State upsets Notre Dame ... that, and the rest of the sports scores right after this." But the fact that they are final scores, makes them past tense and they should be so reported.

Voice

Broadcast copy should be in the active voice. It's quicker, it's more conversational and it carries more impact.

EXAMPLE:

Passive: THE EVIDENCE WAS GATHERED BY THE POLICE
DEPARTMENT.

Active: THE POLICE DEPARTMENT GATHERED THE EVIDENCE.

Write For The Ear

In keeping your copy conversational you'll be writing for the ear. Your video will enhance the audio, but the audio must be able to stand alone. It is for this reason that we refer to broadcast writing rather than just television writing. Remember, blind people listen to television and, much of the time, sighted people listen to television while they're doing other things. Use everyday language. Use contractions. Write as people speak.

EXAMPLE:

Bad: IT WAS INDICATED BY THE POLICE CHIEF THAT AN
ARREST WAS IMMINENT.

Good: THE POLICE CHIEF SAID AN ARREST WAS IMMINENT.

Sentence Length

Keep sentences short. They're easier for the newscaster to read and for the audience to understand. Remember, the lead should be 20 words or fewer and the rest of the sentences should be 25 words or fewer. Even though they can be 25 words long, sentences other than the lead should average 17 words. They should vary in length to avoid a pattern effect. For spot announcements, the maximum sentence length should be 17 words. Shorter sentences give a feeling of action and urgency, but it's also easy to sound choppy if you're not careful to vary the sentence length within the word limit.

EXAMPLE:

Since they were not forwarded for a final vote, they can be resurrected only by a two-thirds vote of the house or by being added to bills under consideration later in house-senate conference committees, in which conferees try to reach agreements on bills that have passed the house and senate but in different forms.

This example is a sentence that was taken directly from a daily newspaper in a major American city. It illustrates the need to shorten sentences for broadcast copy. If you can go over it again, you can understand it, but try to read it aloud and make yourself understood. By dividing this 56-word sentence into four sentences of 1, 10, 15 and 19 words, we make it much clearer.

THE BILLS WEREN'T FORWARDED FOR A FINAL VOTE, BUT THEY CAN STILL BE RESURRECTED. ONE METHOD IS A TWO-THIRDS VOTE BY THE HOUSE. ANOTHER IS BY ADDING THEM TO BILLS UNDER CONSIDERATION LATER IN HOUSE-SENATE CONFERENCE COMMITTEES. THESE COMMITTEES TRY TO REACH AGREEMENT ON BILLS THAT HAVE PASSED THE HOUSE AND SENATE, BUT IN DIFFERENT FORMS.

Quotations and Attribution

It takes a little subtlety on the part of the broadcast writer when it comes to quotations and attribution. In the printed format, it's nothing more than putting something in quotation marks. However, the listening audience can't see quotation marks. This can be overcome with the use of phrases like, "he said" with a slight pause or a faint change of tone before the actual quote. This will leave no doubt in the mind of the listener that he is hearing the exact words of the original speaker.

EXAMPLE:

THE CHIEF PETTY OFFICER SAID,"I THINK SHE'S THE
FINEST SHIP AFLOAT"

When it is absolutely necessary to remove all chance of doubt from the listener's mind, you can use "QUOTE" and "END QUOTE." However, this is disconcerting and certainly unconversational, and you should avoid it whenever possible. If you're quoting someone and it's necessary to use a long quote, don't worry about rules for sentence length. Avoid long quotes whenever possible for obvious reasons. When you have to link the speaker with the quote, use conversational phrases.

EXAMPLE:

THE CHIEF ADDED....

or

HE CONTINUED BY SAYING...

It's usually a good idea to identify your source as quickly as possible. We don't want the listener/viewer to miss any of the important information because he's trying to figure out who is being quoted.

Credits

When quoting source material, since we can't use footnotes, we need to give oral attribution to both the source and its author, and it should be done in the first reference. Then in subsequent references we can attribute either the source or the author.

EXAMPLE:

IN THE "NINTH NEW COLLEGIATE DICTIONARY," MERRIAM
WEBSTER PUTS THE ACCENT ON THE FIRST SYLLABLE IN THE
NOUN, "ATTRIBUTE." WHEN IT'S A TRANSITIVE VERB,
HOWEVER, THE ACCENT IS PUT ON THE SECOND SYLLABLE.

Whenever a production is going to require a lot of attribution it can be done in the form of credits at the end. It can also be done with a crawl by the character generator as well as by an announcer. It wouldn't hurt to include the credit in the copy since the video can be missed by anyone in the audience who is just listening. Of course, known facts need not always be credited.

EXAMPLE:

IT'S TIME FOR ALL OF US TO REMIND OURSELVES TO,
"ASK NOT WHAT YOUR COUNTRY CAN DO FOR YOU, ASK WHAT
YOU CAN DO FOR YOUR COUNTRY."

As a broadcast writer, you must exercise careful judgment in determining whether such material is sufficiently original or identifiable with its author or source as to not require credit.

Numbers

From one to nine. Write out: ONE, TWO, THREE, etc., unless they are being used for sports scores, time, dates or telephone numbers.

From 10 to 999. Use numerals: 10, 20, 30, 128, 925, etc.

More than 999. Both of the preceding styles apply with one slight addition. Substitute for the zeroes, words that mean what those zeroes represent, such as: ONE-HUNDRED, 15-HUNDRED, THREE-THOUSAND or 71-BILLION, etc.

Dates. JANUARY 1ST, JUNE 29TH, JULY 4TH, etc.

Years. Four digit numerals such as 1980 or 1995.

Money. 10-THOUSAND DOLLARS, TWO-MILLION YEN, 29-D-MARK.

Fractions. TWO-THIRDS, ONE-FOURTH, 16-THIRTY SECONDS.

Percentages. FIVE PER CENT, 22 PER CENT.

Telephone numbers. 542-4014 or EXTENSION 4-0-1-4 (for emphasis)

Addresses. ONE WEST EAGER STREET, 65505 NORTH 69TH AVENUE.

Building numbers. BUILDING ONE; BUILDING 400; etc.

Ages. TEPEE-WEEK-OLD BABY, 21-YEAR-OLD PRIVATE.

Time. 9:00 THIS MORNING or NINE A-M.

Decimals. 15-POINT-FIVE or FIVE-POINT-TWO.

Roman numerals. LOUIS THE 16TH, POPE JOHN PAUL THE SECOND.

Ratings. NUMBER SIX ON THE CHART, RANKED 26TH BY THE AP WRITERS.

Scores. 7 TO 3, 19 TO 12, 35 TO NOTHING.

License. B-R 549

Military units. SECOND BATTALION, 82ND AIRBORNE, SEVENTH ARMY. (Written as spoken)

Equipment designations. M-16 RIFLE, C-FIVE-A "GALAXY", C-ONE-30 "HERCULES"

Punctuation

The period. As in any writing, the period indicates the end of a sentence or thought. More periods are used in broadcast writing because broadcast news sentences are shorter and more conversational.

The comma. A comma indicates a pause shorter than that of a period. Geographical names and most items in dates and addresses are also set off by commas.

EXAMPLE:

WE MOVED FROM FORT BRAGG, NORTH CAROLINA, ON JUNE 29TH,
1985.

The dash. Use the dash to set off appositives and other parenthetical expressions.

EXAMPLE:

NATO -- THE NORTH ATLANTIC TREATY ORGANIZATION -- IS
PRIMARILY RESPONSIBLE FOR...

The hyphen. Use the hyphen to help announcers in phrasing difficult words and to instruct them to pronounce individual elements distinctly.

EXAMPLE:

RE-ADJUST, RE-EVALUATE, W-A-B-C, F-B-I, U-S, A-M

DO NOT hyphenate or divide a word at the end of a line. Spell out the entire word OR move it to the next line.

The ellipsis. Occasionally, you can use a series of three dots to indicate a pause longer than that of a comma. The series of three dots can be used for dramatic effect:

EXAMPLE:

THE JURY FOREMAN ANNOUNCED IN A CLEAR FIRM VOICE...
"INNOCENT!"

The quotation marks. In addition to its normal use for indicating quotes, the quotation marks can also be used to set off nicknames, titles of books and plays, etc.

EXAMPLE:

THE ONE--HUNDRED FIRST AIRBORNE DIVISION -- BETTER KNOWN
AS THE "SCREAMING EAGLES" -- MAKES ITS HOME AT FORT...

Parentheses. In broadcast copy, material in parentheses is information for the announcer and normally not meant to be read aloud. It includes notes to the announcer such as pronunciation guides, a date, reading rates, etc.

EXAMPLE:

COLONEL PAIKEN (PAY-KEN) ARRIVES ON SUNDAY (MAY 21ST).

Speaking Of Words

Remember, anyone can turn on a radio or television set. Choose words that everyone will understand, the announcer as well as the listener. Don't expect things of your audience. Make your copy clear and understandable.

Contractions. In day-to-day conversations, contractions are used liberally. "It's" instead of "it is", and "they're" instead of "they are" will make copy more conversational. A couple of exceptions to this are the "it will" contraction ("it'll") and "they will" ("they'll") which are awkward to the ear.

Pronouns. There is a danger in using personal pronouns in broadcast copy. You must be sure your audience knows who you're talking about whenever you use "he", "she" or "they." The ear can't go back and pick-up the identification.

Alliterations. When you compose a sentence consisting of several words beginning with the same vowels or consonants, you have alliterations and the announcer has a problem.

EXAMPLE:

THE WESTERLY WINDS WILL WHIP WRATH WITHIN WINDSOR...

or

THE DEVASTATED DAM DUMPED DRUDGE AND DIRT ON DES MOINES

Sibilants. Too many "s" or "sh" sounds tend to create a hissing sound when read aloud.

EXAMPLE:

THE SIXTH SICK SHIEK'S SIXTH SHEEP'S SICK

And of course, you should always be aware of how difficult your copy will be to read aloud. Try it yourself if you have any doubt. This can be a second reason for reading your copy aloud in addition to double-checking it for time. We'll discuss how to time your copy later.

Homonyms. Watch out for homonyms, words which sound alike but have different meanings. The listener can't hear the difference between "won" and "one", "bear" and "bare."

Here and there. Since your listeners could be anywhere, "here" and "there" can mean something different to each of them and change the meaning of your copy. These words can be avoided simply by calling "here" or "there" by its name. If "here" is Fort Knox, say "FORT KNOX."

Libelous words. Used improperly in your story, many words could lead to libel. Be very careful with words like: atheist, Fascist, seducer, bigamist, illegitimate, deadbeat, addict, etc. Keep in mind also that until someone is convicted of a crime or some wrong doing, he is only a "suspect" or the "accused" and his guilt is "alleged."

Not, "not". Avoid the use of the word "not" in your copy. "Not" can easily be dropped inadvertently and leave the listener wondering if he heard "not" or not.

EXAMPLES

<u>Use</u>	<u>Avoid</u>
DISHONEST	NOT HONEST
INNOCENT	NOT GUILTY
FORGOT	DID NOT REMEMBER
UNABLE	NOT ABLE

Other meaningless words. Avoid meaningless words like "latter," "former" and "respectively," when referring to persons, places or things already mentioned. Again, listeners can't refer back. Likewise, avoid transitional phrases within your stories such as "meanwhile," "meantime" and "incidentally." They're crutches. While each thought, phrase or paragraph should flow to the next, it should be done with skillful organization, not throw-away transitional words.

Steer clear of flowery phrases and trite expressions that take up time and space and add nothing. Avoid slang, vulgarisms and dialect in news writing.

Always translate military jargon, technical, legal and foreign terms into simple language.

EXAMPLES

<u>Use</u>	<u>Avoid</u>
ASSIGNED	DETAILED

BEFORE	PRIOR TO
ENLISTMENT	HITCH
IF	IN THE EVENT OF
SAID	CLAIMED

Good Taste

What can we say about good taste? It's relative. It's very easy to be misunderstood, and even when your meaning is quite clear, there's a chance that someone will feel it's in bad taste. You MUST therefore, take all precautions to be sure your words, phrases and manner of presenting information will not embarrass your command, your service, or the United States Government.

Handling Titles And Names

Don't lead off a broadcast story with a person's name if you can avoid it. In the case of names and titles being used together, precede the name with the title. It should be, "SPECIAL AGENT ELLIOTT NESS", not "ELLIOTT NESS, SPECIAL AGENT." This alerts your listener that a name is coming up and gives him a better chance to comprehend your story.

Official titles. Refer to federal office holders by title or as "mister" or "ms." That is SENATOR JONES or MISTER JONES .. CONGRESSMAN SMITH or MISTER SMITH... CONGRESSWOMAN BROWN or MS BROWN...

Difficult names. Whenever a difficult name isn't essential, use the person's title, such as "THE FOREIGN MINISTER OF SWEDEN... "

Initials. It's best to omit initials in a person's name unless it is a well-known part of the person's name such as HOWARD K. SMITH or MICHAEL J. FOX or F. LEE BAILEY. The other exception is when the nature of the story requires further clarification such as births or deaths.

Phonetic spelling. If there's any way for an announcer to mispronounce a difficult or unusual name, assume he'll do it. So give him all the help you can. Write the phonetic spelling in parentheses and place it immediately after the troublesome word. Be sure to underline the phonetic syllable that is to be accented or stressed.

EXAMPLE:

SERGEANT KOLLMAN (COAL-MAN) ENTERED...

MUNICH (MEW-NICK), GERMANY IS THE CAPITOL OF....

Make sure the phonetic spelling appears on the same line as the word it represents.

Abbreviations

A good rule to remember on the use of abbreviations in broadcast copy is...WHEN IN DOUBT, WRITE IT OUT. (Hours and hours of extra time spent in writing things out isn't worth trading for one moment's embarrassment on the air.) Consider as well, the additional chance of misunderstanding on the part of the listener.

Never abbreviate names of states, cities, countries, political parties (except G-O-P), days of the week, months, titles of officials and address identification such as street, avenue, drive or boulevard.

Never start a sentence with either an abbreviated word or number. WHEN IN DOUBT, WRITE IT OUT.

Acronyms

When using an unfamiliar abbreviation or acronym which will be pronounced as a word, be sure to spell it out in the first usage.

EXAMPLE:

"THE DEFENSE INFORMATION SCHOOL, COMMONLY CALLED DINFOS.."

"CHAMPUS - THE CIVILIAN HEALTH AND MEDICAL PROGRAM FOR THE
UNIFORMED SERVICES - HELPS SERVICEMEN AND THEIR FAMILIES."

All-CAPS or Upper/Lowercase?

Do you type broadcast copy in all-caps or uppercase and lowercase letters? Some newsrooms favor an all-caps format for consistency with copy coming over teletypes. Studies, however, show that copy typed in uppercase and lowercase letters is easier to read. One thing to consider when using uppercase and lowercase is the chance of failure to capitalize, which could confuse an announcer and cause him to stumble.

Timing your copy

The total line count of a broadcast news release is the most common measure of the length or time.

In television scripts, the storyline or audio shares the page with the video. Therefore, with only half the page for the story content, the typewriter margins are set for an average of 35 characters or spaces per line. As a result, 14 to 16 lines of television copy will average 30 seconds, or two seconds per line.

Though not the preferred method, the length or time of a broadcast news release can also be measured by total word count. Announcers read at varying speeds, but the average is two-and-a-half words per second. This would mean approximately 150 words for a 60-second story.

Numbering pages

Whenever your broadcast copy is more than one page, pages are numbered consecutively: 1 of _, 2 of _, 3 of _. If your script is 10 pages long, the first page would be numbered 1 of 10, and the last page would be numbered 10 of 10. Page numbers are typed in the upper right hand corner of the page. Page numbers are extremely important in broadcast copy. Imagine an announcer on his way to an air shift, exactly on time, who drops his copy and gets the pages mixed up. There won't be enough time to sort them out if they don't have page numbers.

The Four-Unit Reading

This consists of a slugline, date, length of copy and type of release. The slugline serves as a little headline of the story. The date is the date the release was prepared. The copy length tells in seconds, approximately how long it will take to read the story. There are two types of releases. The immediate release for hard news items and the like, and the general release for soft news, features, spots or any other material that doesn't have the immediacy of hard news.

EXAMPLE:

OUTDOOR RECREATION

APRIL 1, 19XX

(30 SECONDS)

FOR GENERAL RELEASE

In place of the type of release, you can have a DO NOT USE AFTER line with time and date. This is for timely material, usually about an event that will run for a limited time. It gives the broadcaster a cut-off date or time to discontinue

airing the release. You can also have a HOLD FOR RELEASE UNTIL line for advance releases. This is a good tool for providing material in advance, even though it shouldn't be aired until a certain time. It allows others the luxury of planning and scheduling without putting the material out too soon.

Video-change Spacing

In television copy, the rule is double spacing. When a video change is to occur in a television script, we then triple space. This alerts the announcer that there is a video change taking place. It may be returning from another video source to the announcer on camera. The announcer shouldn't be seen looking off camera, and if for some reason he needs to look elsewhere, such as to a monitor for an on-cue point, the script will alert him as to when he won't be on camera.

On-cue

When reading to a videotape in a television script, announcers need a way to prevent coming out ahead of the tape, or being too slow and thus behind the tape. One method used is "ON-CUE." At selected points in the script, the writer builds in places for the announcer to pause, look at the studio monitor and wait for a particular point at which to continue. The number of times this is done in a script depends on the length of the script. The longer the script, the more times the announcer should pause. This is one way to compensate for the varying speeds at which different announcers read.

The End or # # #

The number symbols (# # #) indicate the end of your broadcast release. Sometimes called "Dunphys," they should be centered under your manuscript column. You should have the word "more" in that same position when additional copy follows on another page.

Editing Broadcast Copy

Absolutely clean copy -- free of mistakes -- is the rule for copy designed for outside release to television stations. Sloppy copy is a distraction to the broadcaster, and it makes a negative statement about you, your leadership and your unit. For in-house productions, edit marks may be used sparingly, but only those edit marks that are easily understood. DO NOT USE PRINT MEDIA COPY EDIT MARKS.

Feature Writing

A feature provides a change of pace to a newscast. Features usually focus on soft news items and provide a lighter note.

Use colorful treatment when writing a feature story. Colorful treatment uses active, vivid, descriptive words with precise meanings. Verbs are in the active voice and paint word pictures.

Features need logical development to be convincing. The lead sentence should grab the listener's attention. A sequential arrangement of facts brings the story to a logical conclusion.

At the end, a telling point illustrates the central idea or the informational objective of the story. Often, the telling point refers to the lead by restating the same idea.

Good features don't just happen...they're created through skillful writing.

Spot Announcements

Americans grow up with commercial messages and spot announcements. In contrast to features, which may be used only once, commercials or spots are usually aired over and over again.

Department of Defense public affairs members do not write commercials. We write spots or spot announcements. Understandably there is a similarity, since commercial messages are often called spots.

We think of the civilian media spot or commercial as something that sells a product. The spot announcement, as it applies to DOD public affairs, can do even more. It can "sell" the viewer on an organization, activity or attitude.

There are two forms of spot writing: SELLING and INFORMATIONAL.

The SELLING spot informs the viewer, then tells him to do something. The selling spot has three steps: ATTENTION, APPEAL, and ACTION.

The INFORMATIONAL or information spot simply informs. The information spot uses only the ATTENTION and APPEAL steps. It does not specifically tell the audience what to do (action, etc.). It simply informs.

None of the sentences in a selling spot should be more than 17-words and the action step should not exceed six words.

PRACTICE EXERCISE

LESSON 4

SUBCOURSE NO. DI 0350

VIDEO SCRIPTWRITING

INSTRUCTIONS:

Review the material in this lesson. Answer the questions below by circling the "T" or "F" next to each question. Compare your answers with the answer key on the next page.

- T F 1. The lead sentence in a video script may be 25 words in length, but the rest of the sentences must be limited to only 20 words.
- T F 2. Three number signs, or Dunphys, must appear at the bottom of each page of your script.
- T F 3. Every page of a video script must be numbered sequentially.
- T F 4. When giving attribution you must use "QUOTE" and "END QUOTE."
- T F 5. It isn't necessary to give attribution to a quote that most people will recognize and associate with its author.
- T F 6. You can time your copy by counting lines when you don't have time to read it aloud and time it.
- T F 7. It's important to get as many facts in the first sentence as possible because air time is valuable and we need to tell the story quickly.

ANSWER KEY

PRACTICE EXERCISE

LESSON 4

SUBCOURSE NO. DI 0350

VIDEO SCRIPTWRITING

1. FALSE (Page 51)
2. FALSE (Page 61)
3. TRUE (Page 60)
4. FALSE (Page 52)
5. TRUE (Page 53)
6. TRUE (Page 60)
7. FALSE (Page 49)

LESSON FIVE

ELECTRONIC EDITING

46R Soldier's Manual Task: 214-177-1318

OVERVIEW

LESSON DESCRIPTION:

This lesson will provide you an overview of electronic videotape editing.

TERMINAL LEARNING OBJECTIVE:

ACTION: Describe videotape format and techniques for the electronic editing procedure.

CONDITION: You are given the material presented in this lesson.

STANDARD: Perform all the duties described in this lesson.

REFERENCE: The material contained in this lesson was derived from the following publication:

STP 46-46R14-SM-TG Soldier's Manual & Trainer's
Guide, Broadcast Journalist, MOS 46R Skill
Levels 1/2/3/4/, August 1988

ELECTRONIC EDITING

INTRODUCTION

In the early days of videotape recording, the only way to edit videotape was to physically cut the tape and splice it back together much the same way film is edited. This is extremely difficult because unlike film, which is a physical or chemical process from start to finish, videotape is all electronic. You can't actually see where a picture starts or stops on the tape. The complicated process of cutting and splicing videotape is all but a forgotten art. Today, editing is done electronically.

With the 3/4-inch videocassette system, there is a playback machine, record machine, TV monitors and edit controls. The edit controls allow you to find an accurate beginning and ending -- "in and out" -- points for your edits. The TV monitors allow you to view the video being played back and the video being recorded (see Figure 4-1). The editing controls shuttle the tape back and forth, allowing you to perform the actual edits.

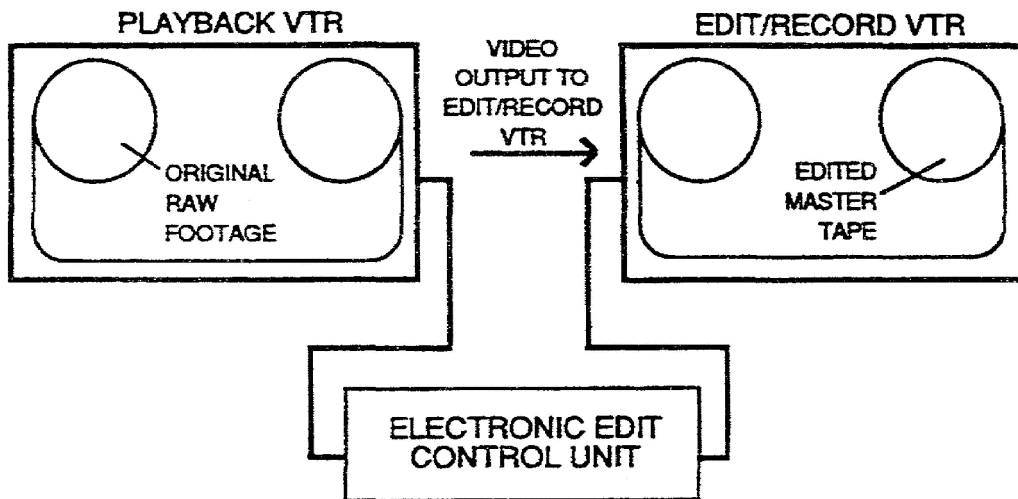


FIGURE 4-1. VIDEOTAPE EDITING SYSTEM

Tons

Before we start learning the editing process we need to become familiar with some of the broadcast terms used in editing.

Video track. The video information takes up most of the space on a videotape. The helical scan process used on 3/4-inch videocassette machines records the information on one or two video heads in a series of diagonal lines onto the videotape.

Audio track. Depending on the system used, you may have anywhere from one to three audio tracks on the videotape. The camcorder's video cassette and 3/4-inch video cassette recorders have only two tracks of audio. The audio tracks are placed in different locations on the videotape, but work just like the audio recording process.

Control track. The control track on videotape is similar to the sprocket holes in film. Without the control track, you can't edit. There are two ways to record the tracks. Laying control track on a blank tape is the first step in the videotape editing process in the insert edit mode. When in the assemble edit mode, the control track is added as you assemble the video package.

The control track consists of evenly spaced electronic blips or spikes called **sync-pulses**.

Cue (address) track. One of the audio tracks (or in some cases a separate track) is used to record cueing information for editing. This information may consist of audio or visual time and/or frame identification (see Figure 4-2).

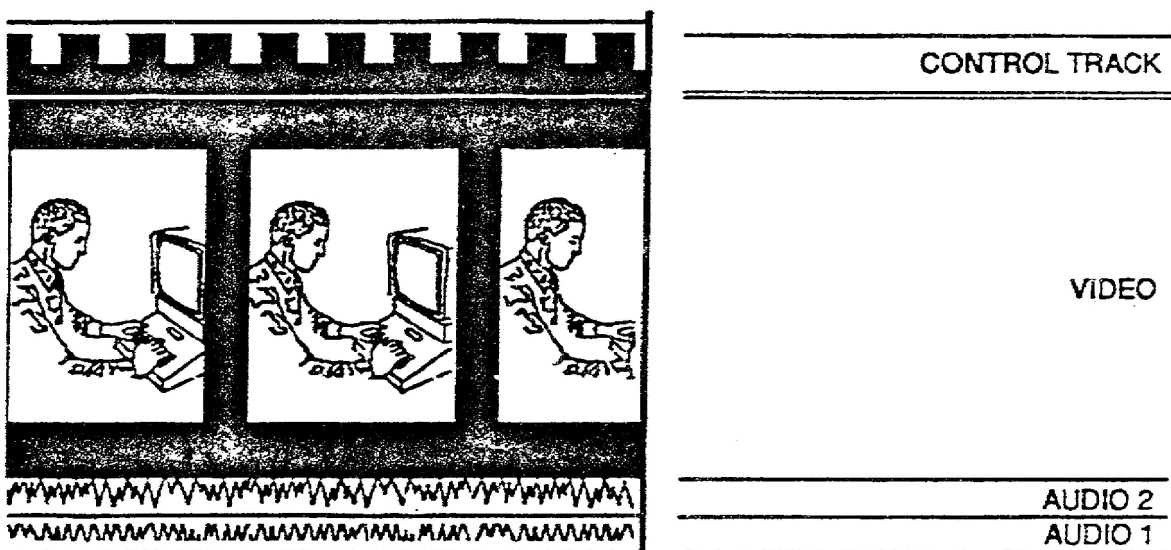


FIGURE 4-2. TRACK LOCATION, 3/4" VIDEOTAPE

Electronic Editing

Electronic editing is a transfer or dubbing process that allows the operator to play back a videotape cassette and to place recorded material from the cassette in the desired order on another tape (see Figure 4-1).

The recorded material, both sound and pictures, is transferred onto an edit/record VCR, which assembles or inserts the raw information or footage into a completed sequence or program. The edit/record controls allow us to precisely place when and where the information on the recorded tape will occur. The operator decides where the raw footage will start or end, placing that footage on the recording tape.

EDITING MODES

There are two kinds of edits that you may make on an editing system. They are:

- o assemble edits
- o insert edits

Assemble Edits

In the assemble mode, the electronic editor adds control track and program footage (both audio tracks and the video track), to the existing editing VCR at a predetermined in edit point. The editing VCR continues recording the new information and the control track (electronic sprocket holes) until it is stopped. When you are assemble editing, you are inserting new control track at each in edit point and ending control track at each out edit point. Your video may be unstable (picture tearing or breakup) at the edit points during playback. Allow for extra video after your intended stop/out edit point -- otherwise you will not be able to edit onto the last part of the video (see Figure 4-3). Your out edit point will be too short.

Assemble edits are very convenient because you just add segments, building the video story or program.

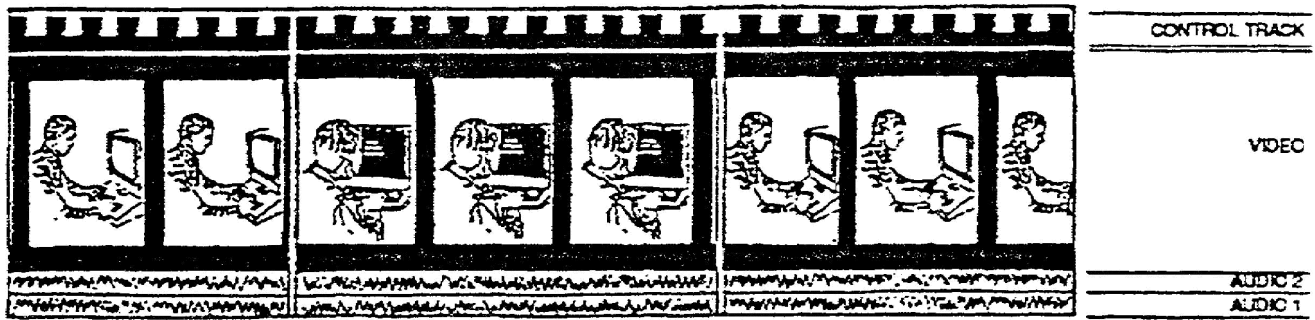


FIGURE 4-3. ASSEMBLE EDITING

Insert Edits

Insert editing allows you to add or change video and/or audio separately or together without affecting the control track. As you insert the new material over the existing information, you use the already established control track to lock the signal into synchronization. The main drawback is that you must lay a long enough control track (TV black or crystal black) on the tape before you start editing. A one-hour program tape requires you to lay one hour of black before you start the editing process. Otherwise you will not have sufficient control track for the VCR machines to read on the recorded videotape (see Figure 4-4).

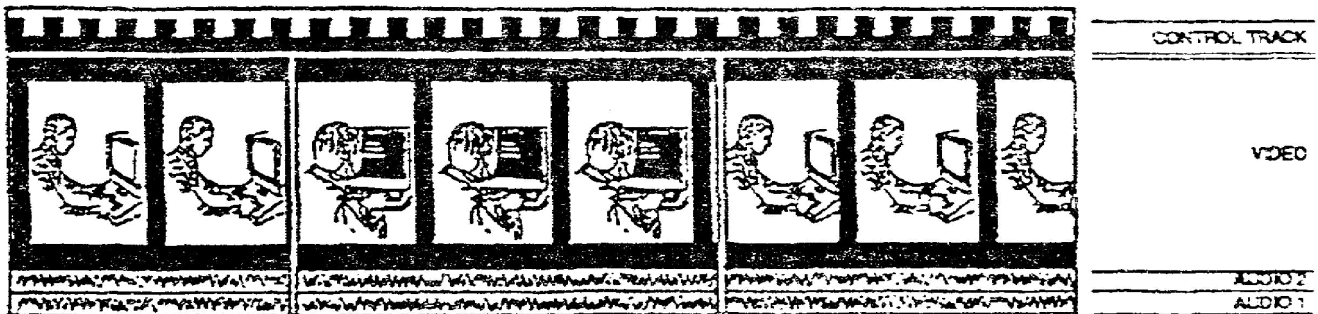


FIGURE 4-4. INSERT EDITING

*** * OPERATOR WARNING * * * ***

After laying the control track in the assemble mode, be sure to change the edit control unit to insert mode. Once you begin to make your first video or audio edit, if you haven't changed out of the assemble mode, the end of the edit will be dirty and there is no way to correct it without relaying the control track for the entire length of the tape.

The best approach is to stay in either the **assemble** or the **insert** mode. If and when you have to insert a piece of audio or video information over an assembled finished product, be careful of which buttons you are pushing.

Continuity

In editing, continuity refers to the viewer's ability to combine the different shots and scenes to make smooth transitions in time and space. In other words, the story is clear and concise without any distracting scenes that interfere with the content of your message.

For example, poor **screen direction** occurs when a subject moves in several directions. You, the cameraman, shot the scene from both sides, left to right and right to left. During the editing process, you edit the scenes together. This makes the subject look like he has made a quick turn around and headed in the opposite direction. A break in continuity will confuse the viewers and make them have to try to figure out what happened. Keep all video on one side of a 180 degree line or the other, and you'll avoid this.

Avoid such abrupt transitions when you are editing. Don't edit in the middle of a zoom, pan (camera movement in which the camera follows action), or tilt (camera movement that adjusts the camera view up or down). These edits usually won't work. The transition is too jarring for the viewer. There are many other dos and don'ts in editing for continuity, but the main thing to remember is to be aware of the viewer's ability to follow certain transitions and keep the message intact.

News/Sport Story

Most ENG news inserts contain four types of footage:

- o Actuality - An actuality is the coverage of the event as it occurs.

- o Interviews - A subject is answering questions or making a statement.
- o Stand-ups - The reporter talks directly to the camera.
- o Cut-ins or cut-away - These are secondary shots of action or reaction (also known as "B-roll").

A good cameraman will photograph a story or event with the editing process in mind.

While no two stories are the same, there is a basic format that the majority of the stories will follow. First the reporter introduces the story with a brief background. This is often done as a stand-up from the scene of the event. Then, other speakers, interviews, or actualities are used to fill in the details. These are referred to as "sound bites" or actualities. Finally, the reporter summarizes on camera.

There are many variations to the above formula. The experienced reporter will consistently be looking for a better way to tell the story.

BASIC EDITING PROCEDURES

The format, procedures and editing techniques will vary from person to person and from station to station. Let's assume the script has been written and the primary narration has been laid on the production tape. This is a normal news/production requirement.

When laying (inserting or assembling) the video and audio on the recording tape, the video should match the audio. A typical editing sequence might be:

- o The editor will work from a log which lists all of the scenes on the tape(s). It may be prepared at the time of the shooting or as the tape is being reviewed at the station or your office. The log will describe the scene briefly and show where it is located on the tape using the counter on the playback machine.
- o The producer, editor, and/or sometimes the reporter will decide which scenes to use, in what order, and the amount of time you have to tell the story. In smaller facilities, one person will, in most cases, do it all.
- o The editor prepares a blank video cassette with countdown leader and crystal black. The cassette is put into the edit machine and the countdown leader and enough crystal black to cover the length of the story is recorded. The cue mark is also recorded on the tape.

- o The footage (raw video) recorded on location is placed in the playback machine. The editing process is now ready to begin.
- o The story is assembled and edited according to the predetermined sequence. Sometimes the audio track is recorded first and the visuals added later and matched to the video. At other times, the sequences are assembled in order, depending on the type of story and available footage.
- o The edited tape is labeled with the title, date, and run time. Then it is reviewed by the supervisor and any corrections are made before airing.

The technical side of the editing process is fairly easy to learn. With today's technology, the procedure is almost foolproof. The aesthetic aspects of editing, however, are something else. A good editor must have a thorough knowledge of many related skills in order to provide viewers with a simple, yet effective, message.

PRACTICE EXERCISE

LESSON 5

SUBCOURSE NO. DI 0350

ELECTRONIC EDITING

INSTRUCTIONS:

Review the material in this lesson. Answer the questions below by circling "T" or "F" next to each question. Compare your answers with the answer key on the next page.

- T F 1. The process of cutting and splicing videotape is the perfected new method.
- T F 2. When recording in the assemble mode, sound and/or pictures, are transferred to the record VCR.
- T F 3. After laying control track, you may change either to the insert or assemble mode at any time.
- T F 4. Avoid editing in the middle of a zoom, pan or tilt.
- T F 5. A cameraman should photograph a story or event with the editing process in mind.

ANSWER KEY

PRACTICE EXERCISE

LESSON 5

SUBCOURSE NO. DI 0350

ELECTRONIC EDITING

1. FALSE (Page 68)
2. TRUE (Page 70)
3. FALSE (Page 72)
4. TRUE (Page 72)
5. TRUE (Page 73)

ELECTRONIC JOURNALISM II

PUBLIC AFFAIRS



**THE ARMY INSTITUTE FOR PROFESSIONAL DEVELOPMENT
ARMY CORRESPONDENCE COURSE PROGRAM**

**A
I
P
D**

**READINESS/
PROFESSIONALISM**



**THRU
GROWTH**

ELECTRONIC JOURNALISM II

Subcourse Number DI 0351

EDITION A

Army Public Affairs Center
Fort George G. Meade, Maryland

10 Credit hours

Edition Date: September 1990

SUBCOURSE OVERVIEW

We designed this subcourse to provide you with an entry-level understanding of the operation of Electronic News Gathering (ENG) and Electronic Field Production (EFP) equipment; the selection and set up of microphones; the preparation and performance of TV news inserts; videotape editing; and the responsibilities and functions of an ENG Team Chief. This subcourse is presented in five lessons. You must have a basic knowledge of military broadcasting prior to taking this subcourse. There are no prerequisites to this subcourse. However, it is suggested you complete Subcourse DI0350, Electronic Journalism I, before taking this subcourse.

This subcourse reflects the doctrine current at the time the subcourse was prepared. In your own work situation, always refer to the latest official publications.

Unless otherwise stated, the masculine gender of singular pronouns is used to refer to both men and women.

TERMINAL LEARNING OBJECTIVE

- ACTION:** You will learn about the operation of ENG/EFP equipment; the selection and set up of microphones; the preparation and performance of TV news inserts; how to edit videotape; and how to perform as an ENG Team Chief.
- CONDITION:** You are given the material presented in this lesson.
- STANDARD:** To demonstrate competency of this task, you must achieve a minimum of 75 percent on the subcourse examination.

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LESSON ONE

OPERATE ENG EQUIPMENT

46R Soldier's Manual Task: 214-177-1315

OVERVIEW

LESSON DESCRIPTION:

This lesson will provide you an overview of the operation of ENG/EFP equipment.

LEARNING OBJECTIVE:

ACTION: Describe procedures necessary to properly obtain, in a field environment, video and audio for television production.

CONDITION: You are given the material presented in this lesson.

STANDARD: Perform all the duties described in this lesson.

REFERENCES: The material contained in this lesson was derived from the following publications:

STP 46-46R14-SM-TG Soldier's Manual & Trainer's Guide,
Broadcast Journalist, MOS 46R Skill Levels 1/2/3/4, August
1988.
Defense Information School Radio and Television Handbook, May
1982.

OPERATE ENG EQUIPMENT

INTRODUCTION

The age of the high-quality, portable mini-camera is here and here to stay (See Lesson One, Subcourse DI0350). The advent of small-format video systems truly revolutionized the television industry, particularly Army broadcasting. Where once we could only use a film camera, the Electronic News Gathering/Electronic Field Production camera has effectively replaced this older system with cost-effective, portable news gathering equipment. Not only is it portable, it can even allow the broadcaster to play back the recording on the spot. With the older film format, the process was not only time-consuming to develop and see the film, but also expensive by comparison.

Where Lesson One of Subcourse DI0350 discussed equipment common in today's ENG/EFP systems, this lesson will deal with the operation of that equipment. With advancements in technology so rapid they often make new equipment obsolete even before it hits the market, it is difficult to keep reference and learning materials up to date. Therefore, this lesson will concentrate on the type of equipment issued to United States Army Reserve Component, since that equipment is standard for more than 60 public affairs units.

Since the basic operation of equipment differs little between ENG and EFP, this lesson will address ENG with notations wherever there would be a significant difference for EFP. The primary difference between ENG and EFP is evident in the terminology. ENG is the coverage of uncontrolled events such as training accidents and fires. The pictures and story are gathered on the scene, as the events happen. EFP uses the same equipment, but under controlled circumstances. A story or script is usually written in advance. The event is carefully planned and executed until the final product is finished with predetermined results. The production of television spots, sporting events and planned events that take place outside the television studio are examples of Electronic Field Productions.

THE CAMERA

For anything to be seen by anyone on a television screen, it had to be previewed by a television camera before the introduction of digital electronics. The images that appeared were determined by what a camera could see and how it could see them. Therefore, the most obvious production element in television was always the camera. All other elements and techniques were geared to the physical and electronic

characteristics of the camera. Lighting, scenery, audio, writing, and directing all depended on the potential of the camera.

Where once they were large and bulky, cameras have evolved to smaller, lighter, more easily handled pieces of equipment. Portability, along with the advent of videotape, even allowed the television camera to replace the film camera in the gathering of news. In ENG/EFP where actual events are the topic, we are concerned mostly with portable cameras.

It is the intent and design of these portable cameras to be quickly and easily adjustable to extreme production situations. (See Fig. 1-1 Basic camera.)

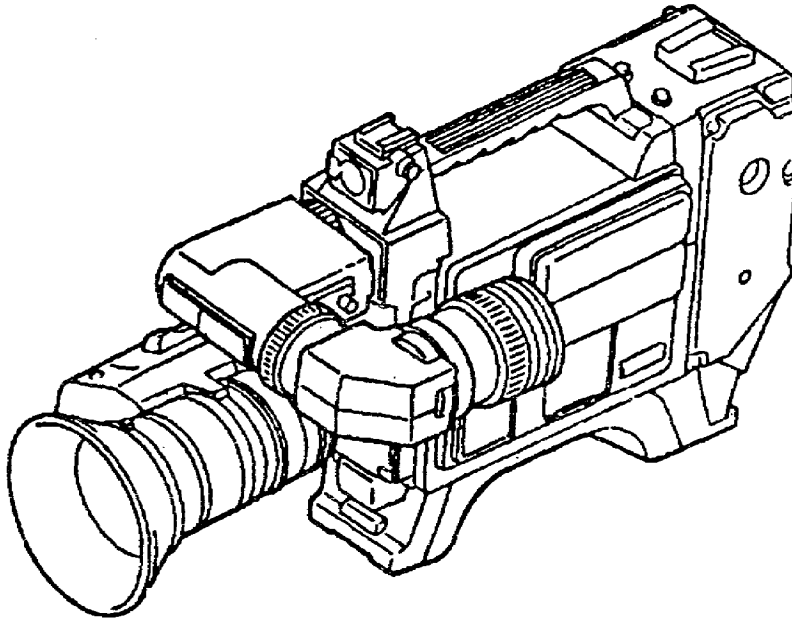


FIGURE 1-1. BASIC CAMERA

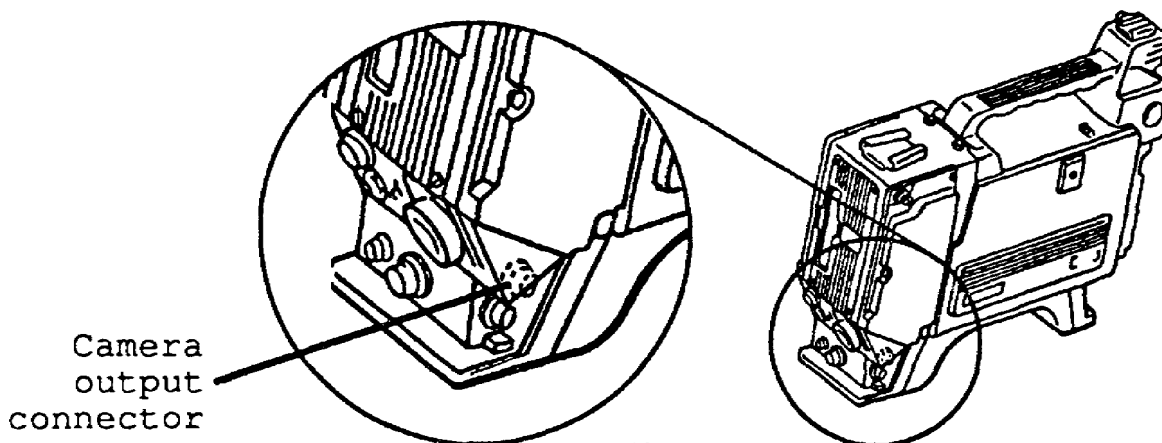
There are three major parts to the television camera. They are the lens, body and viewfinder. Since they were discussed in lesson one of subcourse DI0350, this lesson will be more concerned with the effect of each on camera operation.

CAMERA BODY

The camera body consists of the housing and those parts inside it. That includes either camera pickup tube(s) or a solid state image device and the internal optical system.

The internal optical system is a series of prisms or mirrors. There are also circuitry boards, resistors, capacitors and wires. This assortment of electronics takes the visual information it receives from the internal optical system, processes it, and converts it into electronic impulses for feed to another source.

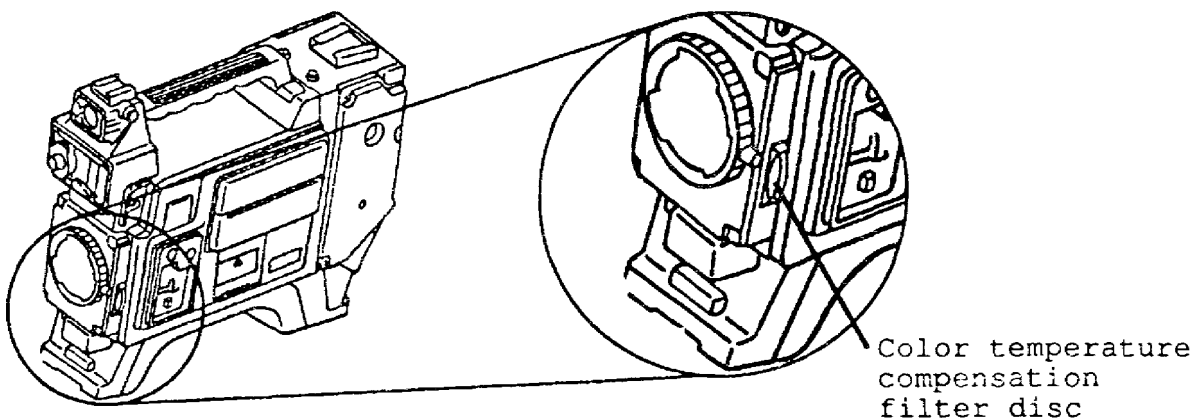
The other source can be a monitor, a videotape recorder or a system to put it directly on the air. Cameras have video out connectors through which the electronic information passes. (See Fig. 1-2 Camera Output Connector.)



Camera
output
connector

FIGURE 1-2. CAMERA OUTPUT CONNECTOR

At the front of the camera body is the Color Temperature Compensation Filter Disc, more simply referred to as the filter wheel (See Fig. 1-3 Filter disc). This enables rapid adjustment to varying light conditions with just the turn of a wheel. There are three or four positions. They are: 3200 degrees Kelvin; 5600 degrees Kelvin; 5600 +1/8 ND (Neutral Density) or +1/4 ND (see Lesson Two, Lighting for ENG, subcourse DI0350). Some cameras -not all -have a fourth position, which is a cap. The filter wheel must be set in the proper position before you white balance the camera (3200 degrees Kelvin for artificial lighting, 5600 for daylight, and +1/8 or 1/4 ND for bright sunlight). The filters will aid in the white balance process. As you learned in Lesson Two, Lighting for ENG, Subcourse DI0350, white balancing is the procedure that insures the camera can reproduce colors accurately.



Color temperature
compensation
filter disc

FIGURE 1-3. FILTER DISC

THE LENS

As you learned in Subcourse DI0350, the lens and certain attachments to it are sometimes called the external optical system. The lens selects a certain field of view and produces a small, clear optical image of this view.

With the lens we have four primary concerns. These are: focal length, focus, f-stop and depth of field. What you need to do now is understand the functions of each, and apply them to your use as an ENG videographer.

If some things are repeated in this lesson, it is merely to save you the effort of having to go back and refer to subcourse DI0350.

Focal Length

Portable television cameras, the cameras we're concerned with, have a zoom, or variable focal-length lens, which enables them to select fields of view at different distances from the camera without moving the camera. It allows you to change the focal length of the lens from long to short and from short to long in one continuous operation.

There is an important difference between zooming in or out, and physically repositioning the camera closer or farther away. (A camera movement called "dolly in" or "dolly out." See Fig. 1-5.) The wide use of a zoom lens and its ease of operation has caused many videographers and directors to rely on the zoom when they should move the camera. A zoom lens simply magnifies or reduces an image, but it's necessary to dolly the camera to get the full three-dimensional effect. This is particularly important when moving past doorways, arches or stationary objects.

The degree to which you can change the focal length of a zoom lens is called the zoom range. To you, the operator, it's more important to know the magnification, rather than the numbers. That is something that will come only with experience. Some cameras have a "times two function," which allows you to double the focal length at any point in the zoom. That is another area where you'll need experience in order to become proficient. By recording the change from "times one" to "times two," or the other way around, you can create an interesting effect, if you do it properly.

The speed at which the focal length of a zoom lens can be changed is determined by the operator, whether it is done manually or with a zoom servo.

A zoom servo is nothing more than a small motor controlled by a lever. How far the lever is depressed determines the speed of the zoom. There are situations where a slow zoom would be better than a fast one, and other times when the fast zoom would be preferred. You'll have to develop a touch to be able to control the speed as well as a feel for the speed required in each case.

The various focal lengths of lenses have varying effects on your video. Things to consider are: field of view, perspective, distortion, depth of field, effect of camera movement and subject movement, and limitations you'll have to deal with. Subcourse DI0350 discusses these at length. Once you learn them, it will be much easier to understand how they will affect your video product. Be sure to use them to your advantage.

Focus

Focus with a lens is the same thing as focus with the eye. Sharp and clear is in focus, while fuzzy and unclear is out of focus.

Whenever possible, you should zoom focus. That means to zoom all the way in, focus and zoom back out to the desired shot. Not only does it keep more of the videospace in focus when you zoom back out, but when zoomed-in everything is magnified and you'll be able to see much finer details to focus on. That means your focus will be much clearer and sharper. Rack focus means to focus the shot where it is and, unless a certain effect is desired, is done whenever situation or time don't permit a zoom focus.

f-Stop

Since too little light falling on the pick-up tube or chip will make the picture quality suffer, it is extremely important to be sure you have enough light. Since the camera will be used both indoors and outdoors, you will have to adjust for extreme variations in light levels. You probably won't be carrying a light meter, so you'll need some way to know whenever the light level is sufficient.

Your camera has both automatic and manual iris controls (See Subcourse DI0350). Most of the time, you'll want to use the automatic control. Changing focal lengths requires a change of lens diaphragm opening and this can be accomplished more efficiently by the automatic control. It can even inform you if there is insufficient light. If the automatic iris is all the way open, the camera is seeking more light. If you move the dB gain switch to 9dB and the automatic iris doesn't close down at all, you still don't have enough light to operate the camera. It has to be very

dark to require using the 18dB gain, and picture quality suffers greatly, so use the 18dB gain only in cases of absolute emergency. EXAMPLE: A video crew at the November 1989 destruction of the Berlin wall with daylight fading and no lights on hand would have used the 18dB gain because a substandard picture is better than no picture at all.

Keep in mind, the automatic iris control will do everything for you, but it deals with the average light level for the video space. That means, if you're shooting video of someone standing in the middle of a field covered in snow, he will appear as a dark silhouette because the automatic iris will give you the opening required by most of the picture, which is the snow. As long as you are aware of this fact, you can go to manual control whenever necessary. Because of the contrast range limitations of the camera, you will come across conditions where the camera won't be able to encompass everything the eye can see. It's up to you, the operator, to know the limitations so that you can make sure that what is lost is not essential to the shot.

f-stops affect more than just the amount of light entering the camera and this is important for the ENG operator to know. They also affect the depth of field.

Depth of Field

As you know, the depth of field is that area of the field of view where the objects are in focus. You know too, that you can control the depth of field with: lens diaphragm opening, camera to subject distance and focal length of the lens. You will want to exercise that control for different purposes. You may want a shallow depth of field in order to separate your subject from the background or foreground. You may want a greater depth of field so you can move around without getting your subject out of focus too easily. The important thing is for you, the operator, to understand the basic principles and apply them properly.

THE VIEWFINDER

The viewfinder shows you what the camera sees. (See Fig. 1-4.) Since it is a miniature television, it has brightness and contrast controls. This can fool you when it comes to satisfactory light levels. What appears to be enough light in the viewfinder may not be, because the brightness control is turned up. Never rely on the brightness of the picture in the viewfinder to indicate light levels.

Use the viewfinder to frame, compose and focus the camera shots. In addition, there are a number of functions commonly displayed in the

viewfinder eyepiece. These can include any or all of the following:

- o A recording light to indicate the recorder is on or off.
- o Battery warning lights to indicate low levels in both the camera and recorder batteries.
- o A tape warning light to indicate the recording tape is nearing the end.
- o A camera db gain indicator.
- o A low light-level indicator.

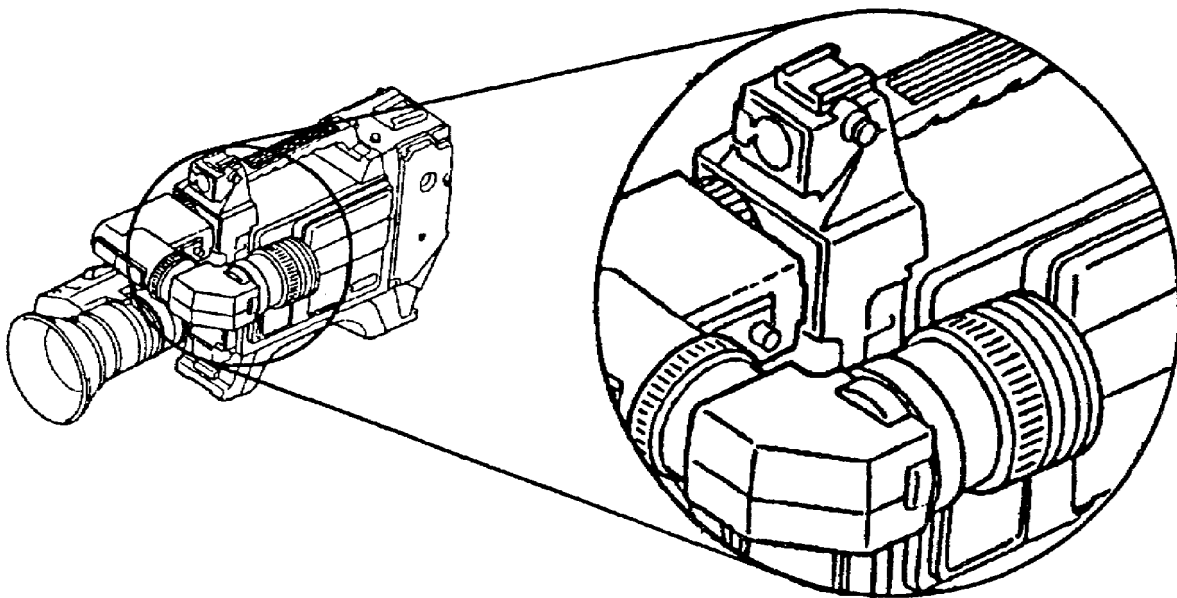


FIGURE 1-4. VIEWFINDER

CAMERA OPERATION

In ENG there are a number of things you need to master, not the least of which is camera operation. Before you can operate the camera, or any other equipment, you must accomplish setup. Usually the camera and the recorder are set up at the same time. Set them up by inserting a battery or connecting an AC adaptor. When you have connected the camera and recorder with a video cable, turn the power on and check the battery charge with the camera battery level indicator. Check the videocassette for the needed red pin and insert the cassette into the recorder.

Connect the hand-held microphone (see Lesson Two, Select and Set Up Microphones) to the recorder. Connect the headphones to the recorder. Set up the needed lights (see Lesson Two, Lighting for ENG, Subcourse

DI0350), or reflectors if natural light is used. Set up the tripod.

Of course, you must learn the technical aspects. You will need to be able to white balance the camera according to the operator's manual. Likewise, you'll have to be able to record with it, but just as important, you'll need to perfect the aesthetics. You won't always have a script available to you beforehand, especially in the coverage of fast-breaking spot news. When you do have a script available prior to shooting, it's a good habit to recheck it for any additional video requirements.

Camera Commands

Television production has a language of its own, and it's important that you learn it. As we go over the different camera movements, we'll call them by name. Each name, or movement, should be referred to by that term. Everyone in the industry knows the language and can communicate effectively on a common level. EXAMPLE: It may seem nitpicky, but when talking about shooting with a portable television camera you should use the term videotape rather than "filming." After all, film is an entirely different medium and although most people who misuse the term know what they mean, it takes away all chance of misunderstanding to say what you mean.

Camera movement

There are two ways to move a camera: Changing the aim of the camera, and changing the position of the camera. EXAMPLE: As a subject moves from left to right across your field of view, you can "follow" it by changing the aim from left to right in order to keep it in your picture. You can also "follow" it by moving the camera from left to right at the same rate without changing the aim at all. That's why we use specific movement language instead of just saying, "follow it."

Pan. Horizontally pivoting the camera left or right, to change the aim of the lens while the camera remains in the same position is called panning (See Fig. 1-5). The command is "Pan right" or "Pan left". There could be more specific commands given such as "Pan right and follow," which would give guidance as to the speed of the movement. Move at the same speed as the subject. There is also the swish pan, or whip pan, which is so rapid that it creates a blur of movement.

A pan, just as any other camera movement, should never be done aimlessly or without good reason. It should have a definite starting and stopping

point, or it should be following something. Whenever possible, there should be some obvious motivation for the movement such as someone in the picture looking off to the side and then the camera making the pan to show what he sees. That won't always be possible, especially in ENG, the coverage of uncontrolled events. In all cases though, have the start and stop points fixed in your own mind. That way, the movement will be decisive and direct.

Tilt. The vertical movement of the aim of the camera lens is called tilt. (See Figure 1-5). In the language of television, the command would be "tilt up" or "tilt down." Just as with the pan, tilts should be motivated. Without good reason, any movement takes away from the value of a production. The amount of tilt is more critical than that of the pan, due to the dimensions of the videospace (3 units high by 4 units wide). Since the horizontal dimension of the screen is one third larger than the vertical dimension, there is more room for error in the panning movement, making it even more important to have the start and stop points firmly established in your mind.

Pedestal. Similar to the tilt, the pedestal movement is an up and down movement. However, it is not in the aim of the camera, but rather the movement of the camera itself without changing the aim (See Figure 1-5). The command will be "pedestal up" or "pedestal down." The pedestals that studio cameras sit on, as well as the tripods that portable field cameras sit on, have various ways to raise and lower the camera. The tripod you will be using with a portable camera will most likely have some sort of crank handle to raise and lower the camera while the aim remains the same. Quite often, the pedestal movement will be used in conjunction with the tilt movement. When this is the case, there will need to be some sort of explanation previous to the actual execution command. EXAMPLE: "When I give you the command to pedestal up, tilt down at the same time and rate, so we can keep the subject in the picture, but change our shot angle."

Zoom. We have discussed the zoom under focal length earlier. The zoom, although a movement, does not constitute movement of the camera or the aim of the camera. The only thing to add at this point is to re-emphasize that any camera movement, particularly zooms, must be motivated. The tendency for beginning videographers is to do a lot of camera moving. They fail to realize that their job isn't to create the action, but to capture on videotape the action already taking place. The command for the zoom is "zoom in" or "zoom out." There is also a special effect called the snap zoom. This is an extremely rapid zoom, either in or out, that is used to emphasize a dramatic point. It is more common in EFP than ENG and

calls attention to itself. The viewer can't help but notice it, and it should be used only for maximum effect.

Focus. The commands "zoom focus" and "rack focus" mean specific actions that the operator is to accomplish. A zoom focus is done whenever the situation and time permit. Rack focus is done when there isn't enough time to zoom focus, or for an effect. Another effect with focus that will call the viewer's attention is de-focus. This would be to begin the shot out of focus and bring the subject into focus at a designated time. It could also be done in the reverse by taking the subject out of focus to bring something else in the videospace into focus, or merely to indicate the end of the need to see the subject.

Dolly. Dolly is the movement of the camera toward or away from the subject (See Figure 1-5). The commands to dolly are, "dolly in" or "dolly out."

Crane. A crane is the movement of the camera atop a long arm of a crane. Also called a boom, this is another function that is more common in EFP. The command is "crane up," or "crane down." When referred to as a boom, it would be "boom up," or "boom down."

Truck. Truck is the movement of the camera to the right or left while keeping the aim of the camera generally the same (See Figure 1-5). Just as there is a difference between a tilt and a pedestal, there is a big difference between a pan and a truck. If a subject was traveling horizontally across the videospace and the operator just panned to follow it, the shot angle would change. By trucking we keep the angle of camera to subject the same. The command is "truck right," or "truck left." To truck to one side or the other for more than just a short distance is called a "tracking" shot. It is used most commonly in motion pictures and sometimes in EFP when the camera is going along (usually on tracks for stability) next to a moving subject. EXAMPLE: The interplay of driver and shotgun rider on a stagecoach when the scenery is flying by and the subjects remain in the same spot in the videospace.

Arc. An arc can be either a combination of truck and dolly in a straight line to arrive at a prescribed point, or a semi-circular movement to one side or the other (See Figure 1-5)

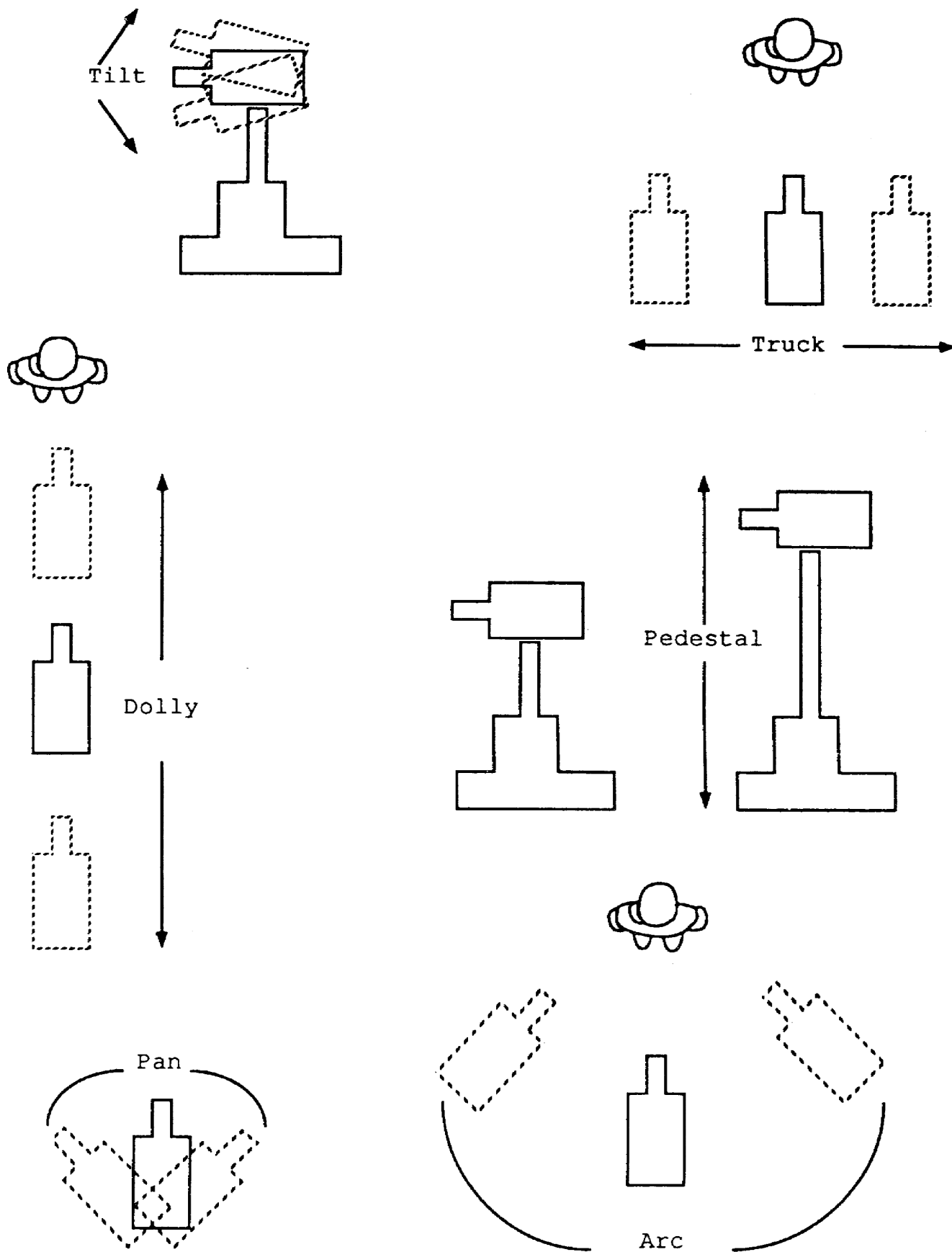


FIGURE 1-5. CAMERA MOVEMENT

The command is "arc right" or "arc left." Most often an arc is used to provide another angle of a subject while allowing the viewer to see the change of angle taking place. In some motion pictures, you may even have seen an arc go completely around a subject.

All of the camera movements and their commands apply to both studio and portable camera operation. There are some things however, that you should keep in mind when operating the portable ENG camera.

- o If you are not operating a one-piece cam-corder you must be certain that your connections to the recorder are secure and that both pieces of equipment are moved in unison.
- o Check your mounting plate and be sure not only that the camera is mounted securely to the plate, but also that the plate is mounted securely to the tripod.

Now that you know the different camera movements and what they are called, you must realize that the need for these movements comes about because your viewers rely on you to provide a visually understandable product. What you put into the videospace is important, but how you put it there is just as important. You learned the basics of framing and composition in Subcourse DI0350, Electronic Journalism. There are two different points of view that you should take regarding proper framing and composition: that of the videographer, and that of the editor. You need to know how to do both. There will be times when you will shoot for someone else to edit, and times when you will edit someone else's video. When you're shooting video, you must keep the editing process in mind whether or not you will be the one who edits the final product.

EXAMPLE:

If you are zooming in or out on a subject, you may want to do it several times, taking different lengths of time for each. One five-second zoom-in, a ten-second zoom-in and even a snap zoom. That way, the editor will have a choice of zooms to use.

When you log the video, you must speak the language of television on the chance that someone else may have to edit it. The following two examples are different ways of logging the same B-roll tape. Compare them side by side. If you were the editor, which of them would you want to have provided to you?

EXAMPLE ONE

00:00 - 00:12 LONG SHOT (LS) ESTABLISHING SCENE OF BUILDING ON FIRE

00:12 - 00:48 LONG SHOT (LS) OF FIRE TRUCK ENTERING FROM RIGHT, MEDIUM SPEED PAN LEFT TO WHERE TRUCK STOPS TO BEGIN FIGHTING FIRE

00:48 - 01:32 QUICK ZOOM IN TO MEDIUM SHOT (MS) OF MEN JUMPING OUT OF TRUCK AND RUNNING TO UNLOAD EQUIPMENT

01:32 - 02:10 MEDIUM CLOSE UP (MCU) OF WINDOW WITH FLAMES LEAPING OUT AND RUNNING UP WALL

02:10 - 03:30 MEDIUM SHOT (MS) REAR OF FIRE TRUCK WITH MEN TAKING HOSE OUT. MEN LEAVE FRAME AND HOSE COMES OUT OF TRUCK

03:30 - 04:45 CLOSE UP (CU) OF HANDS TAKING CAP OFF OF FIRE HYDRANT AND CONNECTING HOSE

04:45 - 05:05 EXTREME CLOSE UP (ECU) OF WRENCH TURNING ON WATER AT FIRE HYDRANT

05:05 - 05:20 CLOSE UP (CU) OF NOZZLE OF HOSE WITH NO WATER COMING OUT - THEN WATER COMES OUT

05:20 - 07:30 MEDIUM LONG SHOT (MLS) OF WATER BEING SPRAYED ON BUILDING

07:30 - 08:25 MEDIUM CLOSE UP (MCU) OF WATER GOING IN WINDOW WITH FLAMES LEAPING OUT

08:25 - 09:15 MEDIUM CLOSE UP (MCU) GROUND LEVEL OF HOSES LAYING ON GROUND - FOCUS ON HOSE IN FOREGROUND CHANGING TO HOSE IN BACKGROUND AND EVENTUALLY THE FIRE TRUCK

09:15 - 09:30 EXTREME CLOSE UP (ECU) OF FIREMAN'S FACE - EYES LOOKING UP AT 45 DEGREE ANGLE - FLAMES REFLECTING ON SKIN AND FIRE HAT

09:30 - 09:38 LONG SHOT (LS) OF ROOF CAVING IN

09:38 - 10:10 MEDIUM LONG SHOT (MLS) FIREMAN BEING PULLED FROM BUILDING - CAMERA DOLLY IN TO (MCU) OF FIREMAN RECEIVING TREATMENT

10:10 - 12:02 MEDIUM SHOT (MS) FIREMAN BEING LOADED INTO AMBULANCE - DOORS BEING CLOSED - AMBULANCE LEAVING SCENE, LEAVES FRAME

EXAMPLE TWO

00:00 - 00:12	SCENE OF BUILDING ON FIRE
00:12 - 00:48	FIRE TRUCK ENTERING FRAME, STOPS TO BEGIN FIGHTING FIRE
00:48 - 01:32	MEN JUMPING OUT OF TRUCK AND RUNNING TO UNLOAD EQUIPMENT
01:32 - 02:10	WINDOW WITH FLAMES LEAPING OUT AND RUNNING UP WALL
02:10 - 03:30	REAR OF FIRE TRUCK WITH MEN TAKING HOSE OUT. SHOT REMAINS STEADY AS HOSE COMES OUT OF TRUCK
03:30 - 04:45	HANDS TAKING CAP OFF OF FIRE HYDRANT AND CONNECTING HOSE
04:45 - 05:05	WRENCH TURNING ON WATER AT FIRE HYDRANT
05:05 - 05:20	NOZZLE OF HOSE WITH NO WATER COMING OUT -THEN WATER COMES OUT
05:20 - 07:30	WATER BEING SPRAYED ON BUILDING
07:30 - 08:25	WATER GOING IN WINDOW WITH FLAMES LEAPING OUT
08:25 - 09:15	HOSES LAYING ON GROUND - FOCUS ON HOSE IN FOREGROUND CHANGING TO HOSE IN BACKGROUND AND EVENTUALLY THE FIRE TRUCK
09:15 - 09:30	FIREMAN'S FACE - EYES LOOKING UP AT 45 DEGREE ANGLE TO BUILDING - FLAMES REFLECTING ON SKIN AND FIRE HAT
09:30 - 09:38	ROOF OF BUILDING CAVING IN
09:38 - 10:10	FIREMAN BEING PULLED FROM BUILDING - FIREMAN BEING GIVEN EMERGENCY MEDICAL TREATMENT - SOME CHANGE OF FOCUS DURING SEQUENCE
10:10 - 12:02	FIREMAN BEING LOADED INTO AMBULANCE - DOORS CLOSE - AMBULANCE LEAVES SCENE

Proper equipment operation is essential to ENG. It includes thinking far beyond just building the videospace. Since the electronic news gatherer is often camera operator, director, lighting director, gaffer, writer, editor and audio engineer he must be able to correctly operate all of the equipment.

So far you have learned how to operate the camera. Part of that operation is to keep in mind the points you must consider to shoot anything from a feature to a spot news story. Don't forget what you learned in Lesson Three, Framing and Composition, subcourse DI0350. Good shot composition, variance of angles, lead room and transmission loss will all come into play in all the video you shoot.

LIGHTING EQUIPMENT

You learned the principles of television lighting in Subcourse DI0350. Operation of equipment is nothing more than applying those principles. It may help you to review Lesson Two of DI0350.

RECORDING EQUIPMENT

Just as with the technical aspects of camera operation, you will have to refer to the operator's manual for the proper setup and use of your recorder. There are a few points you must remember about the use of any recorder:

- o Plug your primary audio microphone into channel two and your natural sound or background microphone into channel one. Channel two is on the inside of the tape, and protected from edge damage.
- o Plug in your headphones and listen to the audio you record. Don't just assume you are recording what you want and in the balance you want it.
- o If your recorder is not the type that is connected to the camera body, be sure the cables connecting the two are secure, and are not where someone passing by will trip over them.
- o Record some video and play it back to make sure the camera and recorder system are functioning properly.

Remember, you can always eliminate unwanted audio and video in the editing process. You can't always create the audio or video you need if it isn't there. In the operation of the recording equipment, the key is to make sure you record all you need while on the scene of the event.

A final point to remember is that along with the operation of ENG equipment must go proper care of that equipment. It is each crew member's responsibility to make sure each piece of equipment receives the best of care at all times.

PRACTICE EXERCISE

LESSON 1

SUBCOURSE NO. DI 0351

OPERATE ENG EQUIPMENT

INSTRUCTIONS:

Review the material in this lesson. Answer the questions below by circling the "T" or "F" next to each question.

Compare your answers with the answer key on the next page.

- T F 1. Whenever camera movement is called for, the camera operator should already have the start and stop points fixed in his mind.
- T F 2. Once a good, smooth zoom has been accomplished, while videotaping in the field, it's not a good idea to waste tape by trying it again.
- T F 3. Rack focus is another term for zoom focus.
- T F 4. There are three major parts to a portable television camera: the lens, the body, and the viewfinder.
- T F 5. The degree to which you can change the focal length of a zoom lens is called the zoom range.
- T F 6. Since sports is usually a segment of the news, coverage of a sporting event is considered electronic news gathering.
- T F 7. All portable television cameras have to have a four-position filter disc.
- T F 8. A good camera operator concentrates on getting the good shots and doesn't concern himself with editing.
- T F 9. The camera lens is sometimes called the internal optical system.

ANSWER KEY
PRACTICE EXERCISE
LESSON 1
SUBCOURSE NO. DI 0351
OPERATE ENG EQUIPMENT

1. TRUE (Page 10)
2. FALSE (Page 13)
3. FALSE (Page 11)
4. TRUE (Page 3)
5. TRUE (Page 5)
6. FALSE (Page 2)
7. FALSE (Page 4)
8. FALSE (Page 13)
9. FALSE (Page 5)

LESSON TWO

SELECT AND SET UP MICROPHONES

46R Soldier's Manual Task 214-177-1201

OVERVIEW

LESSON DESCRIPTION:

This lesson will provide you an overview of selecting and setting up microphones.

TERMINAL LEARNING OBJECTIVE:

ACTION: Describe procedures necessary to properly select and set up microphones for electronic news gathering productions.

CONDITION: You are given the material presented in this lesson.

STANDARD: Perform all duties described in this lesson.

REFERENCES: The material contained in this lesson was derived from the following publications:

STP 46-46R14-SM-TG Soldier's Manual & Trainer's Guide,
Broadcast Journalist, MOS 46R Skill Levels 1/2/3/4, August 1988.

Defense Information School Radio and Television Handbook,
May 1982.

SELECT AND SET UP MICROPHONES

INTRODUCTION

According to Webster's Ninth New Collegiate Dictionary, the definition of television is: an electronic system of transmitting transient images of fixed or moving objects together with sound over a wire or through space by apparatus that converts light and sound into electrical waves and reconverts them into visible light rays and audible sound. Too often those involved in the production of television have thought of it as a visual medium and forgotten that half of it is sound.

Regardless of how good the video is, if the audio is weak, so is the production. You should plan and produce the audio with the same care and attention to detail as the video.

WHAT IS SOUND?

Before discussing the selection and setup of microphones, it's necessary to say something about the characteristics of sound. In this lesson, we'll stay very basic and give you only what you need to know to perform on a satisfactory level. Of course, if you want to learn more about sound, it will enhance your proficiency.

Sound occurs when a body vibrating back and forth creates pressure variations which are pushed outward in waves through the air. These waves travel away from the source equally in all directions, much like the ripples in a pond caused by something striking the surface.

Many things can affect sound waves, just as many things can affect the ripples in a pond. When we talk about sound from a production standpoint, we are referring to how the sound is perceived by the human ear after it has been affected by all the external influences. Also, there are important differences between the physical properties of sound and how we actually hear it. All the various factors involved would be too detailed to discuss now, but there are two important factors you should be familiar with to work with television audio. They are sound frequency and sound intensity.

Sound Frequency

The sound waves of a vibrating body go in cycles and can be illustrated by a "sine wave" (See Fig. 2-1 Sound Waves).

Each cycle is measured from the beginning of one wave to the beginning of the next. The number of complete waves, or cycles, per second determines

the frequency of the sound. This is called hertz (Hz). That is why a thousand cycle tone is the same as a thousand hertz tone. The height of the waves is the amplitude, or loudness. We measure this in decibels (dB).

The faster the vibration of the body, the more cycles produced and the higher the pitch of the sound. For example, the number of cycles per second produced by a train's whistle is far greater than the number of cycles per second produced by a ship's fog horn. They may both have the same intensity, but they have very different pitch. The human ear can perceive from 16 Hz to 16,000 Hz. Of course, some people hear better than others, but this is the general range. Normal hearing is most sensitive to sounds between 500 Hz and 4,000 Hz. This is the range of sound frequency most important for understanding speech. Professional audio equipment is capable of reproducing sound frequencies from about 16 Hz to 20,000 Hz, which is the full audio spectrum necessary to pick up and reproduce sound and music accurately.

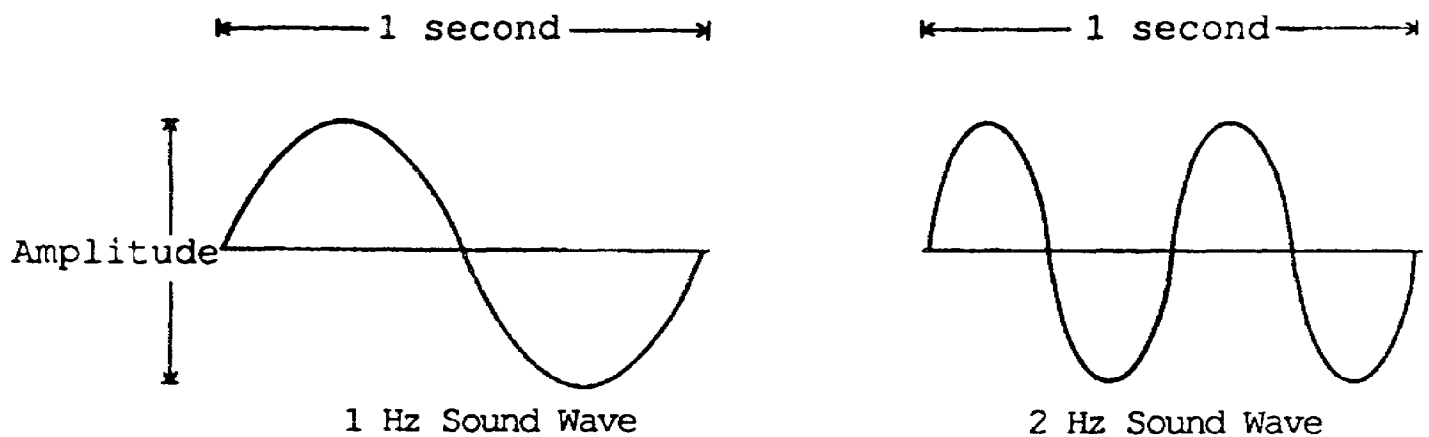


FIGURE 2-1. SOUND WAVES

Sound Intensity

Sound intensity is directly related to the amount of energy expended in creating the vibrations. For example, the harder you hit a drum, the louder it sounds. The increase of pressure through a whistle increases

the loudness of the sound. In both cases, the pitch remains the same, but the volume goes up.

As previously mentioned, loudness or sound intensity is measured in decibels (dB). It's also important for you to understand how the decibel scale works. We sense the difference in two sounds by comparison rather than by a particular measurement. You can't tell how many decibels a sound is just by listening, but you can tell which of two sounds is louder.

The decibel scale is a logarithmic scale. A doubling of the intensity is represented by an increase of 3 dB. In other words, whenever we double or halve the intensity of a sound, we change it by 3 dB. A change from 3 to 6 dB is doubling the sound intensity. A doubling of 9 dB would not be 18 though. It would be 12. (An increase of 3.) And of course, the same goes for lessening the loudness.

You should be familiar with the decibel scale because it is often used in audio production to refer to audio levels. The common VU meter on audio boards is calibrated in decibels and percentage of modulation (See Fig. 2-2 Volume Unit Meter).

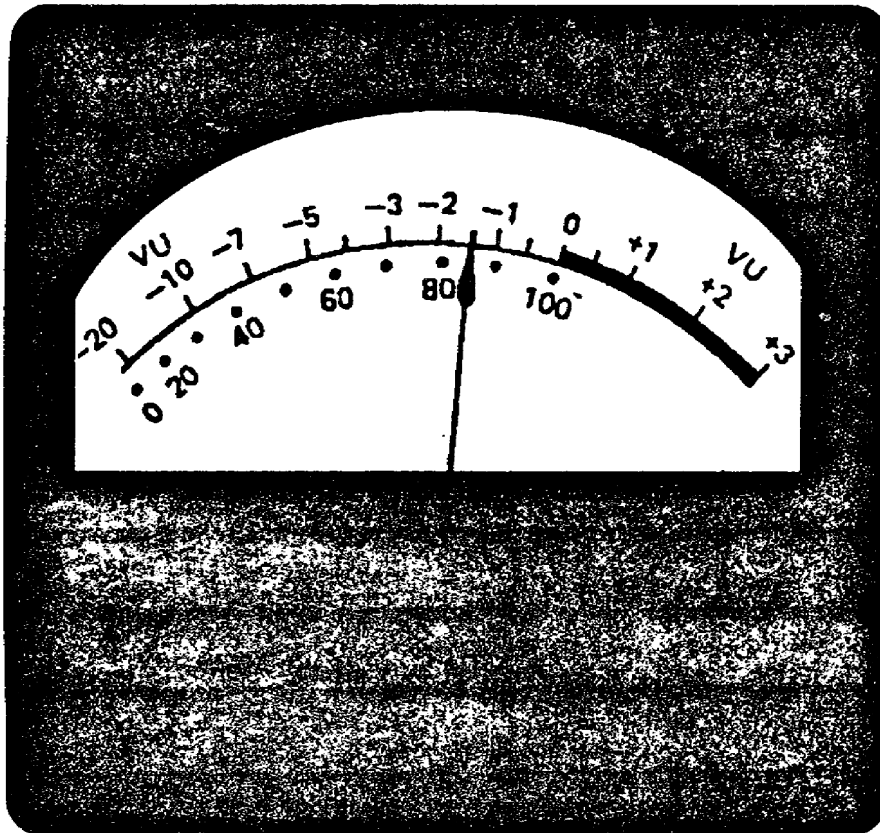


FIGURE 2-2. VOLUME UNIT METER

TYPES OF MICROPHONES

There are two basic parts common to all microphones: The diaphragm and the generating element. The diaphragm is a flexible device, sensitive to the air pressure variations created by sound waves. The generating element is attached to the diaphragm, and converts the vibrations into electrical energy. This is not unlike the camera lens and the camera, where the lens captures the visual images and the camera converts them into electronic signals (See Figs. 2-3, 2-4 & 2-5 Microphones).

Selecting The Correct Microphone

Begin by conducting an acoustical analysis. You do that by assessing how audio will carry or be distorted in the recording environment (e.g., studio, empty room, room filled with furniture, small room, room with high ceiling, outdoors, etc.). While doing this, keep in mind the microphone types and pickup patterns of the microphones available. Then take into consideration any possible audio problems. This applies to both your ENG and your EFP work. Think not only about the primary audio and the equipment required to best achieve the required result, but about the background audio, or wild sound as well. Select the type of microphone that will provide the best pickup for the situation. There are three primary types of microphones you will deal with: Dynamic, Ribbon and Condenser.

The *DYNAMIC* microphone is durable and excellent for outdoor use as a production microphone. This type of microphone is the least vulnerable to distortion and the most common in use in ENG. (See Fig. 2-3, Dynamic Microphone)

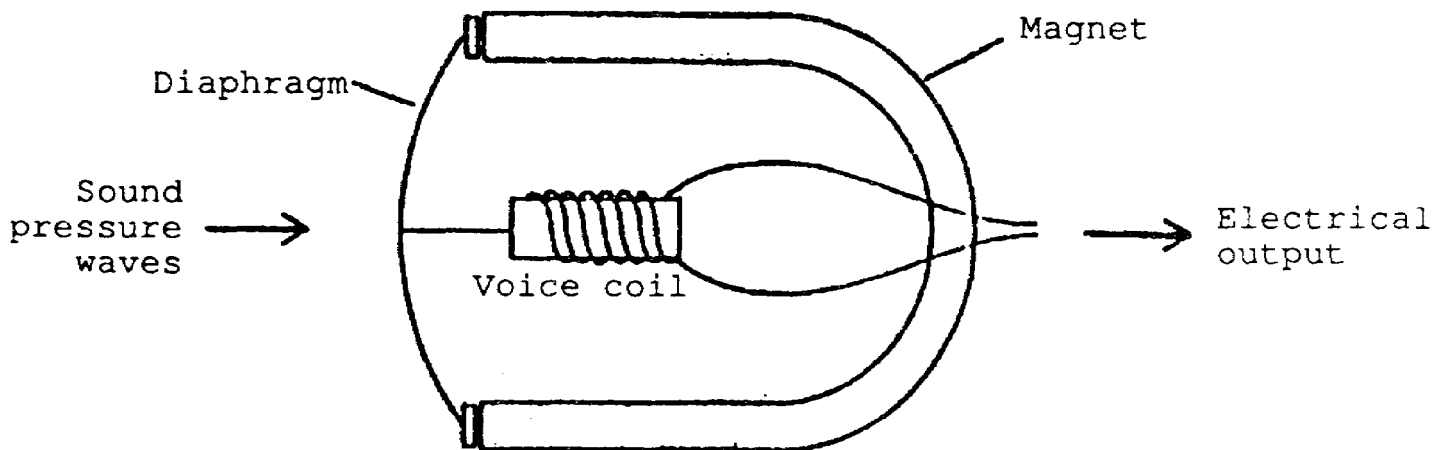


FIGURE 2-3. DYNAMIC MICROPHONE

The *RIBBON* microphone is fragile and sensitive to strong, loud or sudden sounds that can damage the ribbon. This microphone should be used indoors. It is desirable for use on announcers, singers and musical instruments. It's not as good for ENG since you'll need more control over separation. You'll need to separate primary audio and wild sound more than this microphone will permit. Remember too, you have little or no control over strong, loud or sudden sounds outside the studio that would harm the ribbon microphone. (See Fig. 2-4, Ribbon Microphone)

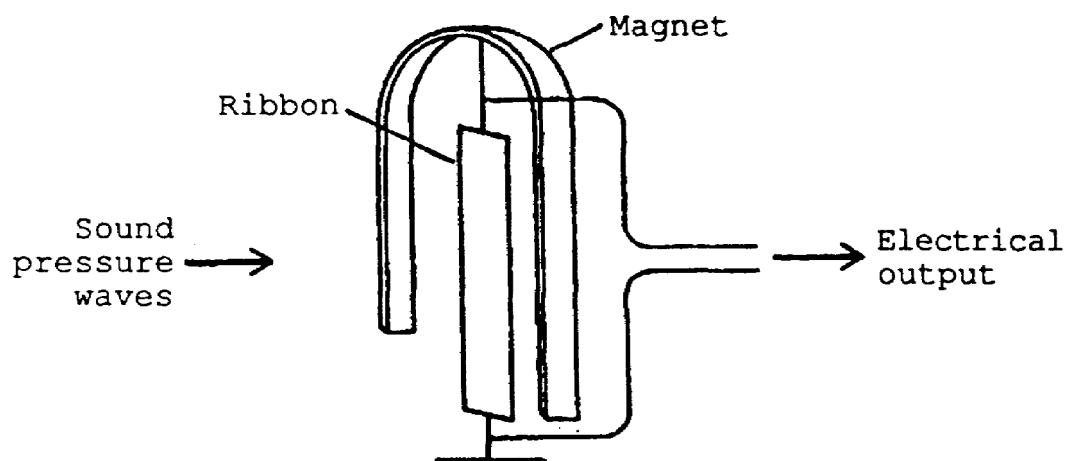


FIGURE 2-4. RIBBON MICROPHONE

The *CONDENSER* microphone generates a low signal and needs a pre-amplifier to boost its strength. It requires a separate power supply, which is large and bulky. This makes the use of this microphone difficult for ENG since one of the main concerns of the ENG team is to lessen the amount of equipment rather than add to it. The condenser microphone provides the highest quality of sound of the three types of microphones. Although it is too sensitive for outdoor use, it is excellent for music pickup. Its use in ENG/EFP would be limited to something such as a video spot for the U.S. Army Band. (See Fig. 2-5, Condenser Microphone)

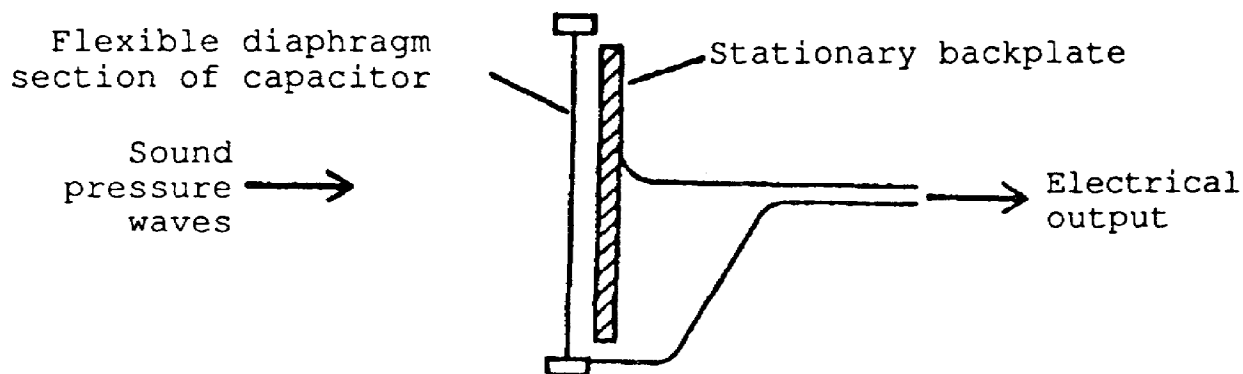


FIGURE 2-5. CONDENSER MICROPHONE

PICKUP PATTERNS

When selecting the microphone, consider the various pickup pattern of each microphone.

The *OMNIDIRECTIONAL* microphone picks up sounds coming from any direction equally well. This microphone is recommended when one microphone must cover a wide area or when unwanted noise is not a problem (See Fig. 2-6 Pickup Patterns).

The *UNIDIRECTIONAL* microphone picks up sounds coming from one direction and suppresses sounds coming from the rear and sides. It is recommended if unwanted noise is a problem. Unidirectional pickup patterns have three general categories: bidirectional, Cardioid, and supercardioid (See Fig. 2-6, Pickup Patterns).

The *BIDIRECTIONAL* microphone picks up sound coming from directly in front and in back. This microphone is not good for television because it picks up studio noises. It is good for two people who face each other, as in the old radio drama, but in television the side opposite the performer is usually the camera and behind the scenes (See Fig. 2-6, Pickup Patterns).

The shape of the *CARDIOID* pickup pattern is similar to that of a heart, as you would suspect from its name. Most cardioid microphones are sensitive to about 120 degrees on either side of straight forward, although this can vary somewhat. The advantage of some directional isolation in addition to a wide audio pickup range makes this a good microphone for television. Even when the performer is some distance away from this microphone, it will produce better quality sound than an omnidirectional microphone.

The *SUPERCARDIOID* is the most highly directional pattern, and is designed to pick up sound within a very limited range. Often called a shotgun microphone, the biggest drawback to this type of microphone pickup pattern is its highly unidirectional shape. Unless the microphone is pointed directly at the sound source poor audio quality will result. Its advantage is in its ability to pick up sound at far greater distances (See Fig. 2-6, Pickup Patterns). Even though it is designed to pick up sound at greater distance, the closer the source, the better the sound that will be reproduced.

The points to remember when considering the pickup patterns of each microphone are the desired mixing or separation of sounds for the production, the likelihood of unwanted sounds occurring during shooting and the amount of gear to be transported to the shoot site. There is really no best microphone pickup pattern. Each is designed for a

particular situation. The trick is to let the microphone's pickup pattern work for you by focusing on the sound you want and eliminating the sound you don't want. An interview taking place next to a busy highway, for example, would be better conducted with a unidirectional rather than an omnidirectional microphone (See Fig. 2-6, Pick-up patterns).

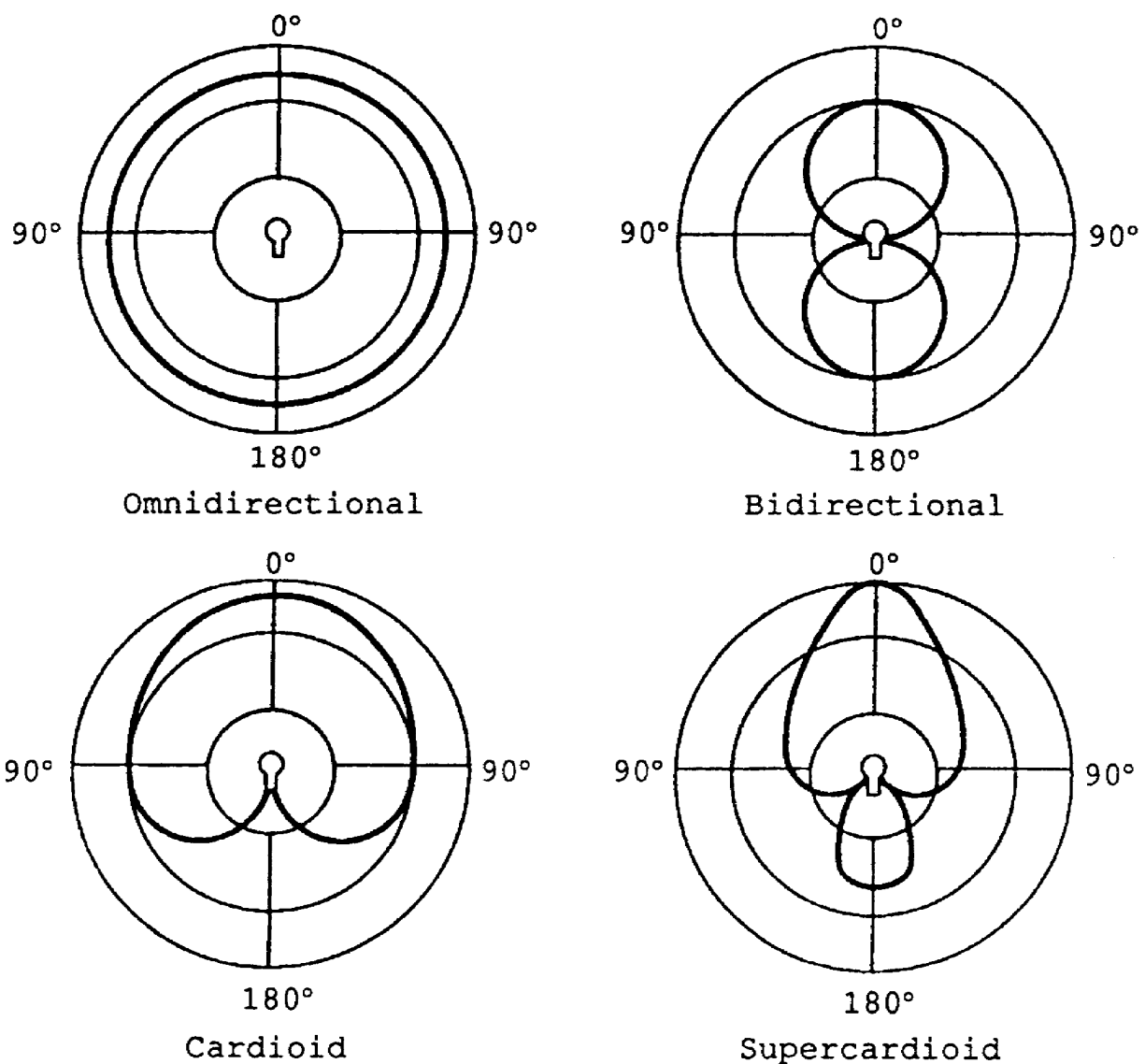


FIGURE 2-6. PICK-UP PATTERNS

IMPEDANCE

Another important factor for you to understand about microphones is impedance. Impedance is the amount of resistance in a circuit. Low impedance means little resistance and a greater current flow, while high impedance means greater resistance and lesser current flow. The numbers are not important for you, as an operator, to know. They are more important to engineers, but you need to understand two important facts: Low impedance microphones permit the use of long cables without

significant loss of signals, and a microphone's impedance must always match the input connector impedance on a tape recorder or audio mixer. That means if your recorder uses a high impedance input connector, you will have to use a high impedance microphone, and therefore, a relatively short cable of approximately ten feet or less, or a transformer designed to match the low impedance of the microphone and the high impedance of the recorder. Of course, this will be of more concern to the ENG team chief than it will to the videographer, but remember, you could very well be both.

PLACEMENT OF MICROPHONES

Another consideration when selecting a microphone is its placement. This is dictated by the subject or situation. Since we're talking about video, the appearance of the microphone is also important to consider. Very often when an interview takes place, the microphone has a flag (little symbol that identifies the station or unit producing the piece) in view of the camera. Of course, it shouldn't be a distraction.

The *LAVALIER* microphone is most commonly used for studio television, but can sometimes be used in the field when it is necessary for the talent to have his hands free. It is always omnidirectional, and the speaker talks across, rather than directly into it. It should be placed on the lapel in the direction the performer will face and NOT under any clothing. Production personnel should place the microphones on non-professional talent. A guest who puts on his own microphone will worry about how it looks instead of sound quality.

The *DESK* microphone is positioned in the direction the talent will face on a desk or tabletop. It is sensitive to desk noise. Use a foam rubber pad under the microphone stand to eliminate some of this problem.

The *HAND* microphone is commonly used for television reporting in the field. The interviewer has complete control over positioning because he is holding the microphone. A backup to this microphone could be a *BOOM* microphone suspended above the sound source. It can be suspended mechanically or handheld.

The *STAND* microphone is basically a hand microphone positioned on a stand and therefore quite common in ENG/EFP. On a stand it is used by singers or near musical instruments.

The *HEADSET* microphone is used when an off-camera announcer needs to have his hands free. It's used frequently for sporting events, which are EFPs.

The *WIRELESS* microphone is any small microphone with a battery-powered transmitter. It does not have a cord, and allows for free movement.

The *SHOTGUN* microphone is a long, tubular microphone and is highly unidirectional, (Remember the supercardioid pickup pattern). It can be several feet from the speaker. This microphone locks in on the main source of sound while eliminating extraneous noise. It is very useful when you can't get near the source.

CABLES AND CONNECTORS

In most cases, the output of microphones must travel through a cable in order to reach the recorder. This requires the use of special audio cables, connectors and receptacles. We'll talk about them separately.

Cables

An audio cable is two wires inside protective insulation. At each end is a connector. The exception is the lavalier microphone. The lavalier is connected permanently to its cable and there is only one connector on the other end of the cable. On most others -- hand, desk, stand, and boom microphones -- there is no permanently attached cable, but a female receptacle in which to plug a cable.

Cables have a natural coil or curve to them. You should follow it when you wind them up for storage. Failure to do so can result in damage to the wires inside the cable and cause audio problems. It is never a good idea to wind the cable around your elbow. It is also not a good idea to tie the cable off by its ends. Twist ties or pipe cleaners work well for holding the cable together.

When running audio cable, always have sufficient length for any movement that may be necessary. It's also a good idea to have a minimum of cable visible in your picture. Avoid stepping on your audio cable and take the necessary measures to prevent others from doing so as well.

Connectors

Professional microphones and cables use a standard connector called a cannon plug. It is actually a cannon XLR with three-pronged male and

female plugs, (See Fig. 2-7, Microphone Connector Plugs). Most audio outputs use a male plug and most inputs use a female receptacle. They lock into position when connected. This is a safety precaution to make sure they don't come apart during use. The male plug has a release button that must be pushed to disconnect.

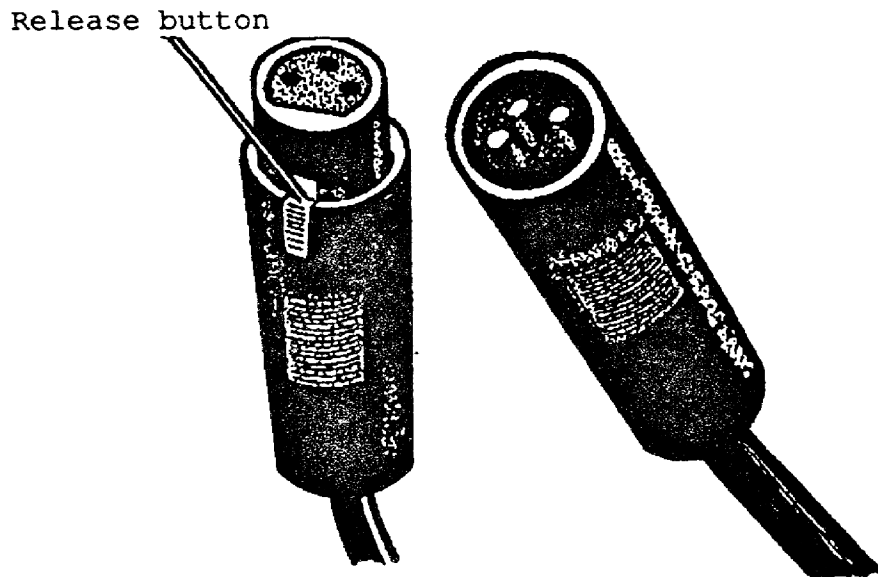


FIGURE 2-7. MICROPHONE CONNECTOR PLUGS

WIRELESS MICROPHONES

Wireless microphones, as the name implies, operate without any cables. They give you all the advantages of a lavalier or hand microphone without the restrictions of cables.

The wireless microphone is a conventional lavalier or hand microphone connected to a small battery-powered transmitter. The signal is transmitted through a small antenna on an FM radio frequency to a receiver. The output of the receiver can then be fed into a camera, a recorder or an audio console.

Many hand-held wireless microphones have the battery and transmitter in the microphone case. You may have seen singers performing into a microphone with a little antenna protruding from the bottom of the case. The transmitter and battery for wireless lavalier microphones are in a pocket-sized unit that is easily carried by the performer while allowing his hands to remain free. This can be beneficial in any number of applications.

Early models of the wireless microphone were subject to interference from many sources, such as taxi and police radios. Newer RF microphones use a diversity receiving system which is designed to prevent those problems. Wireless microphones with the diversity receiving system are reliable and dependable.

The transmission range of wireless microphones is anywhere from 50 to 1000 feet depending on conditions. Of course, you'll want to position your receiver as close to the microphone as you can.

The one disadvantage of the wireless microphone is cost because a separate transmitter and receiver is required for each microphone. The advantages of freedom of movement and increased range, may or may not be worth the expense.

FILTERS

Microphones are susceptible to loud, sudden sounds and wind noise. Pop filters and screens are used on microphones to diminish these sounds. Pop filters are built-in, usually in dynamic microphones. They are excellent against distortion. Windscreens are externally mounted but cannot eliminate loud distortion. Filters are most used when reporting in the field.

THE RIGHT TOOL FOR THE JOB

Determine the number and type of microphones, cables and filters needed. Base this upon the information provided to you in the script, your acoustical analysis, and your decision on the type, pickup pattern, and position(s) of your microphone(s). The types of microphones you use and their positioning will be based on your subject and the situation.

THERE'S MORE TO IT

For ENG we must also consider spare microphones and cables. Carry this a step further and be sure you have spares for any of your equipment. Once you're out in the field, you won't have the chance to run into the equipment cabinet to replace a burned out bulb, or an audio cable that doesn't work. Check all of your audio equipment. Speak into or across each microphone in a normal voice. If any are not working, check the connector cables and make sure the microphones are switched "ON." If a microphone doesn't work, replace it. If audio feedback or interference occurs, reposition the microphones until the problem is eliminated.

Do this in the station/studio/office. Then take spares along anyway. Just as with all the equipment necessary for the production, your checklist should include spares for any equipment that could malfunction and keep you from completing your mission.

Finally, there is no substitute for planning in ENG and EFP. Audio is as much a part of any ENG/EFP piece as video even if it's only natural or background sound. After all the planning it is still important to not take shortcuts while shooting. Use the headsets to actually hear the audio that is being recorded. Don't take-for granted that it'll be there and spend all your efforts on video only. Once the event has taken place and you return to your editing suite, there is no going back for something you missed, and if you don't have everything, including audio, all your time and effort is wasted.

PRACTICE EXERCISE

LESSON 2

SUBCOURSE NO. DI 0351

SELECT AND SET UP MICROPHONES

INSTRUCTIONS:

Review the material in this lesson. Answer the questions below by circling "T" or "F" next to each question. Compare your answers with the answer key on the next page.

- T F 1. Audio is the one area of ENG where you can afford to take shortcuts.
- T F 2. A shotgun microphone is also called Bidirectional.
- T F 3. All ENG microphones have a diaphragm.
- T F 4. Modern wireless microphones are still subject to interference from taxi and police radios.
- T F 5. Sound frequency is measured in decibels.
- T F 6. Sound is pressure variations in the air which travel in waves.
- T F 7. Sound amplitude is measured in hertz.
- T F 8. A VU meter is calibrated in decibels.
- T F 9. Omnidirectional means only in one direction.
- T F 10. Some microphones have built-in filters.

ANSWER KEY

PRACTICE EXERCISE

LESSON 2

SUBCOURSE NO. DI 0351

SELECT AND SET UP MICROPHONES

1. FALSE (Page 31)
2. FALSE (Page 25)
3. TRUE (Page 23)
4. FALSE (Page 30)
5. FALSE (Page 21)
6. TRUE (Page 20)
7. FALSE (Page 21)
8. TRUE (Page 22)
9. FALSE (Page 25)
10. TRUE (Page 30)

LESSON THREE

PREPARE/PERFORM TV NEWS INSERTS

46R Soldier's Manual Task: 214-177-1311

OVERVIEW

LESSON DESCRIPTION:

This lesson will provide you an overview of preparing/performing television news inserts.

TERMINAL LEARNING OBJECTIVE:

- ACTION: Describe procedures necessary to properly prepare/perform television news inserts.
- CONDITION: You are given the material presented in this lesson.
- STANDARD: Perform all the duties described in this lesson.
- REFERENCES: The material contained in this lesson was derived from the following publications:
- STP 46-46R14-SM-TG Soldier's Manual &
Trainer's Guide, Broadcast Journalist,
MOS 46R Skill Levels 1/2/3/4, August 1988.
Defense Information School Radio and
Television Handbook, May 1982.
Defense Information School, Broadcast
Journalism Style Guide

PREPARE/PERFORM TV NEWS INSERTS

INTRODUCTION

The preparation and performance of television news inserts are the meat and potatoes of the electronic journalism business today. This is true in both the civilian and military worlds. In the civilian world, there are entire networks concerned with news only, (and advertising, of course). The public affairs mission of the Army is divided into public information (PI) and command information (CI), both of which can often best be served in a news format.

Your role as videographer, (already covered in the operation of ENG equipment under camera operation), writer, announcer, editor, director or assignments manager will require you to know a lot about the preparation and performance of television news inserts. In this lesson, we'll address the things you'll need to know for announcing, writing, scripting, interviewing and editing. What you'll need to know about assignments manager responsibilities will be covered latter in this subcourse.

WRITING

Writing and scripting, although two slightly different elements, are so closely related that we'll cover them together. Of course, all the principles covered previously under announcing, even though they were mostly aesthetic elements, will still apply and we'll be mentioning them again. Now we'll pay more attention to the mechanics. Some things may seem redundant to you, and they probably are. Remember, we have already talked about a lead, for example. We talked about what it is supposed to accomplish, the two basic types of leads and so forth. When we again talk about leads, even though we will be stressing the mechanics, we'll again touch on some of the aesthetics of them.

Procedures and Limitations

The ability to write comes from much learning and practice. It's difficult, if not impossible, to teach someone to write, much less write well, in one short lesson. The efforts of this lesson will be directed toward giving you the rules that must apply to broadcast writing and how it differs from writing for print media. The best way to learn to write is to -- write, write, write. It also helps to read a lot. Observe the writings of others.

When writing for broadcast, you should apply six "C's". They are; **CLEAR, CONCISE, CONVERSATIONAL, COMPLETE, CURRENT**, and most importantly, **CORRECT**. Let's address each of these points, one at a time.

Clear. Broadcast copy must be clear. If something isn't clear, the reader, listener/viewer won't understand it, and he can't go back over it since it's being read to him by someone else, who isn't going to repeat it. Once gone, it's gone forever.

Concise. Writing concisely adds to clarity and saves air time, allowing two or three more stories to be included in a 30-minute newscast.

Conversational. The copy is going to be read to its intended audience and it should be done in a conversational manner, something that would be possible only if the copy were conversational in the first place. Read it aloud before you turn it in to your editor or air it yourself.

Complete. Your writing must answer all the pertinent questions --the who, what, when, where, why and how. News stories should answer questions, not raise them.

Current. Here again, there are some exceptions, although usually even when something is presented as being of or about another time, it is presented as in the present. For example, even if we receive something that is of a historical nature, we perceive it in the here and now. We never lose sight of the fact that that's where we are, so the copy shouldn't either.

Correct. The importance of being correct cannot be stressed enough. The broadcast media hold a certain credibility with the majority of people. "I saw it on television" is enough proof for many people. This is both good and bad. It adds a certain value to those things we say in our video scriptwriting, but it requires us to work extra hard to ensure something's accuracy. The structure of a news story for broadcast usually differs from that of the print media. The first thing in the broadcast story is the "WHAT". This will attract the listener's attention and alert them to what is about to follow: the details. Since viewers cannot absorb all the facts in the first line, they must be given them in a form that will enhance understanding. Instead of What happened to whom, when and where with a why thrown in and then explaining it in the rest of the story, broadcast style is more like "What happened," "It happened where and when," "This is why it happened," and we'll put in the how if we have it.

The Lead

The lead sentence should have enough information about What happened to arouse the listener's interest, without passing on too much information for the listener to comprehend. A lead sentence should be 20 words or fewer and contain as much information as possible without overloading the listener. A good idea is to begin the sentence with one or two words that are NOT the essential information in the story. Don't begin with essential numbers for the same reason. Much of the time, the viewers' minds aren't geared for the story and it takes a word or two for them to be fully alerted to receive the essential information. Usually, a lead can be made much better by changing it around a little. EXAMPLE: "130-THOUSAND SOLDIERS COULD BE CUT FROM THE ARMY IN THE NEAR FUTURE, IT WAS ANNOUNCED TODAY." This would be more assured of the listener's understanding if it were worded "THE ARMY ANNOUNCED TODAY ANTICIPATED MANPOWER CUTS OF 130-THOUSAND IN THE NEAR FUTURE."

The Body

After the lead, the story must have a logical development. This is the body. It's, quite simply, telling the rest of the story in an orderly fashion, flowing smoothly to an end. Of course, the most important fact will come next and the next most important fact next, and so on. This is important in broadcast writing because air time is limited and valuable. Typically, the same story will be divulged in both the print and broadcast media. It isn't at all uncommon for the broadcast version to be only one tenth as long as the print version.

Tense. The natural tense for broadcast copy is the PRESENT TENSE, since most news reporting is of current, or at least, very recent news. However, every story doesn't have to sound as though it happened in the last minute. As a matter of fact, many events that the audience knows are in the past must be reported in the past tense. A good example of this would be in reporting sports scores. It's acceptable to headline something in the present tense to entice the audience to come back after a break, such as "Ohio State upsets Notre Dame...that, and the rest of the sports scores right after this." But the fact that they are final scores makes them past tense and they should be reported as such.

Voice. Broadcast copy should be in the active voice. The active voice has the subject of the sentence doing the action rather than the subject receiving the action. It's not only quicker, it's more conversational and carries more impact.

EXAMPLE:

Passive: THE EVIDENCE WAS GATHERED BY THE POLICE DEPARTMENT.

Active: THE POLICE DEPARTMENT GATHERED THE EVIDENCE.

Write for the ear. In keeping your copy conversational you'll be writing for the ear. Your video will enhance the audio, but the audio must be able to stand alone. It is for this reason that we refer to broadcast writing rather than just television writing. Remember, blind people listen to television and much of the time, sighted people listen to television while they're doing other things. Use everyday language. Write as people speak. Use contractions.

EXAMPLE:

Bad: WHEN QUERIED, IT WAS INDICATED BY THE POLICE
CHIEF THAT AN ARREST WAS IMMINENT.

Good: WHEN ASKED, THE POLICE CHIEF SAID AN ARREST WAS
IMMINENT.

Sentence length. Keep sentences short. They're easier for the newscaster to read and easier for the audience to understand. Remember, the lead should be 20 words or less and the rest of the sentences should be 25 words or less. Even though they can be 25 words long, sentences other than the lead should only average 17 words. They should vary in length to avoid a pattern effect. For spot announcements, the maximum sentence length should be 17 words. Shorter sentences give a feeling of action and urgency, but it's also easy to sound choppy if you're not careful to vary the sentence length within the word limit.

EXAMPLE:

Since they were not forwarded for a final vote, they can be resurrected only by a two-thirds vote of the house or by being added to bills under consideration later in house-senate conference committees, in which conferees try to reach agreements on bills that have passed the house and senate but in different forms.

This example is a sentence that was taken directly from a daily newspaper in a major American city. It illustrates the need to shorten sentences for broadcast copy. If you can go over it again, you can understand it, but try to read it aloud and make yourself understood. By dividing this

56 word sentence into four sentences of 14, 9, 15 and 19 words, we make it much clearer.

THE BILLS WEREN'T FORWARDED FOR A FINAL VOTE, BUT THEY
CAN STILL BE RESURRECTED. ONE METHOD IS TWO-THIRDS
VOTE BY THE HOUSE. ANOTHER IS BY ADDING THEM TO BILLS
UNDER CONSIDERATION LATER IN HOUSE-SENATE CONFERENCE
COMMITTEES. THESE COMMITTEES TRY TO REACH AGREEMENT ON
BILLS THAT HAVE PASSED THE HOUSE AND SENATE, BUT IN
DIFFERENT FORMS.

Quotations and attribution. It takes a little subtlety on the part of the broadcast writer when it comes to quotations and attribution. In the printed format, it takes nothing more than putting something in quotation marks. However, the listening audience can't see quotation marks. This can be overcome with the use of phrases like, "he said" with a slight pause before the quoted words or a faint change of tone. This will leave no doubt in the mind of the listener that he is hearing the exact words of the original speaker.

EXAMPLE:

THE CHIEF PETTY OFFICER WAS ASKED FOR HIS OPINION, AND
HE SAID,...."I THINK SHE'S THE FINEST SHIP AFLOAT."

When it is absolutely necessary to remove all chance of doubt from the listener's mind, you can use "QUOTE" and "END QUOTE." However, this is disconcerting and certainly unconversational and you should avoid it when you can. If you're quoting someone and it's necessary to use a long quote, don't worry about rules for sentence length. Avoid long quotes whenever possible for obvious reasons. When you have to link the speaker with the quote, use conversational phrases.

EXAMPLE:

THE CHIEF ADDED....
or
HE CONTINUED BY SAYING...

It's usually a good idea to identify your source as quickly as possible. We don't want the listener/viewer to miss any of the important information because he's trying to figure out who is being quoted.

Credits. When quoting source material, since we can't use footnotes, we need to give oral attribution to both the source and its author, and it should be done in the first reference. Then in subsequent references we can attribute either the source or the author.

EXAMPLE:

IN THE "NINTH NEW COLLEGIATE DICTIONARY", MERRIAM
WEBSTER PUT THE ACCENT ON THE FIRST SYLLABLE IN THE
NOUN, "ATTRIBUTE." WHEN IT'S A TRANSITIVE VERB,
HOWEVER, THE ACCENT IS PUT ON THE SECOND SYLLABLE.

Whenever a production is going to require a lot of attribution, it can be done all at once in the form of credits at the end. It can be done with a crawl by the character generator as well as by an announcer. It wouldn't hurt to include the credit in the copy since the video can be missed by anyone in the audience who is just listening. Of course, known facts need not always be credited. EXAMPLE:

IT'S TIME FOR ALL OF US TO REMIND OURSELVES TO,
"ASK NOT WHAT YOUR COUNTRY CAN DO FOR YOU; ASK WHAT
YOU CAN DO FOR YOUR COUNTRY."

As a broadcast writer, you must exercise careful judgment in determining whether such material is sufficiently original or identifiable with its author or source as to not require credit.

Numbers

From one to nine. Write out: ONE, TWO, THREE, etc., unless they are being used for sports scores, times, dates or telephone numbers.

From 10 to 999. Use numerals: 10, 20, 30, 128, 925, etc.

More than 999. Both of the preceding styles apply with one slight addition. Substitute for the zeroes, words that mean what those zeroes represent, such as: ONE-HUNDRED, 15-HUNDRED, THREE-THOUSAND or 71-BILLION, etc.

Dates. JANUARY 1ST, JUNE 29TH, JULY 4TH, etc.

Years. Four digit numerals such as 1980 or 1995.

Money. 10-THOUSAND DOLLARS, TWO-MILLION YEN, 29-D-MARK.

Fractions. TWO-THIRDS, ONE-FOURTH, 17-THIRTY SECONDS.

Percentages. FIVE PER CENT, 22 PER CENT.

Telephone numbers. 542-4014 or EXTENSION 4-0-1-4 (for emphasis)

Addresses. ONE WEST EAGER STREET, 65505 NORTH 69TH AVENUE.

Building numbers. BUILDING ONE; BUILDING 400; etc.

Ages. THREE-WEEK-OLD BABY, 21-YEAR-OLD PRIVATE.

Time. 9:00 THIS MORNING or NINE A-M.

Decimals. 15-POINT-FIVE or FIVE-POINT-TWO.

Roman numerals. LOUIS THE 16TH, POPE JOHN PAUL THE SECOND.

Ratings. NUMBER SIX ON THE CHART, RANKED 26TH BY THE AP WRITERS.

Scores. 7 TO 3, 19 TO 12, 35 TO NOTHING.

License. B-R 549

Military units. SECOND BATTALION, 82ND AIRBORNE, SEVENTH ARMY. (Written as spoken)

Equipment designations. M-16 RIFLE, C-FIVE-A "GALAXY", C-ONE-30 "HERCULES"

Punctuation

The period. As in any writing, the period indicates the end of a sentence or thought. More periods are used in broadcast writing because broadcast news sentences are shorter and more conversational.

The comma. A comma indicates a pause shorter than that of a period. Geographical names and most items in dates and addresses are also set off by commas.

EXAMPLE:

WE MOVED FROM FORT BRAGG, NORTH CAROLINA, ON JUNE 29TH,
1985.

The dash. Use the dash to set off appositives and other parenthetical expressions.

EXAMPLE:

NATO -- THE NORTH ATLANTIC TREATY ORGANIZATION -- IS
PRIMARILY RESPONSIBLE FOR....

The hyphen. Use the hyphen to help announcers in phrasing difficult words and to instruct them to pronounce individual elements distinctly.

EXAMPLE:

RE-ADJUST, RE-EVALUATE, W-A-B-C, F-B-I, U-S, A-M

DO NOT hyphenate or divide a word at the end of a line. Spell out the entire word OR move it to the next line.

The dots. Occasionally, you can use a series of three dots to indicate a pause longer than that of a comma. The series of three dots can be used for dramatic effect:

EXAMPLE:

THE JURY FOREMAN ANNOUNCED IN A CLEAR FIRM VOICE...
"INNOCENT!"

The quotation marks. In addition to their normal use for indicating quotes, the quotation marks can also be used to set off nicknames, titles of books and plays, etc.

EXAMPLE:

THE ONE-HUNDRED FIRST AIRBORNE DIVISION -- BETTER KNOWN
AS THE "SCREAMING EAGLES" -- MAKES ITS HOME AT FORT...

Parentheses. In broadcast copy, material in parentheses is information for the announcer, and normally not meant to be read aloud. It includes notes to the announcer such as pronunciation guides, a date, reading rates, etc.

EXAMPLE:

COLONEL PAYKEN (PAY-KEN) ARRIVES ON SUNDAY (MAY 21ST).

Speaking Of Words

Remember, anyone can turn on a radio or television set. Choose words that everyone will understand, the announcer as well as the listener. Don't expect things of your audience. Make your copy clear and understandable.

Contractions. In day-to-day conversations, contractions are used liberally. "It's" instead of "it is," "they're" instead of "they are" will make your copy more conversational. A couple of exceptions to this are the "it will" contraction, "it'll," and "they will," "they'll," which are awkward to the ear.

Pronouns. There is a danger in using personal pronouns in broadcast copy. You must be sure your audience knows who you're talking about whenever you use "he," "she" or "they." The ear can't go back and pick-up the identification.

Alliterations. When you compose a sentence consisting of several words beginning with the same vowels or consonants, you have alliterations and the announcer has a problem.

EXAMPLE:

THE WESTERLY WINDS WILL WHIP WRATH WITHIN WINDSOR...

or

THE DEVASTATED DAM DUMPED DRUDGE AND DIRT ON DES MOINES

Sibilant. Too many "s" or "sh" sounds tend to create a hissing sound when read aloud.

EXAMPLE:

THE SIXTH SICK SHIEK'S SIXTH SHEEP'S SICK

And of course, you should always be aware of how difficult your copy will be to read aloud. Try it yourself if you have any doubt. This can be a second reason for reading your copy aloud in addition to double checking it for time. We'll discuss how to time your copy later.

Homonyms. Watch out for homonyms, words which sound alike but have different meanings. The listener can't hear the difference between "won" and "one," "bear" and "bare."

Here and there. Since your listeners could be anywhere, "here" and "there" can mean something different to each of them and change the meaning of your copy. These words can be avoided simply by calling

"here" or "there" by its name. If "here" is Fort Knox, say "FORT KNOX."

Libelous words. A libelous word would be any word that, if used improperly in your story, could lead to libel. Be very careful with words like: atheist, fascist, seducer, bigamist, rapist, murderer, illegitimate, deadbeat, addict, etc. Be especially careful with the word "for." Saying someone has been arrested "for murder" implies guilt. Instead say something like "arrested on a charge of murder" or "arrested in connection with the murder of..." Keep in mind also that until someone is convicted of a crime, they are only a "suspect" or the "accused" and their act is "alleged."

Not, "not." Avoid the use of the word "not" in your copy. "Not" can easily be dropped inadvertently and leave the listener wondering if he heard "not" or not.

EXAMPLE:

<u>Use</u>	<u>Avoid</u>
DISHONEST	NOT HONEST
INNOCENT	NOT GUILTY
FORGOT	DID NOT REMEMBER
UNABLE	NOT ABLE

Other meaningless words. Avoid meaningless words like "latter", "former" and "respectively" when referring to persons, places or things already mentioned. Again, listeners can't refer back. Likewise, avoid transitional phrases within your stories such as "meanwhile," "meantime," "incidentally." They're crutches. While each thought, phrase or paragraph should flow to the next, it should be done with skillful organization, not throwaway transitional words.

Steer clear of flowery phrases and trite expressions that take up time and space and add nothing. Avoid slang, vulgarisms and dialect in news writing.

Always translate military jargon, technical, legal and foreign terms into simple language.

EXAMPLE:

<u>Use</u>	<u>Avoid</u>
ASSIGNED	DETAILED
BEFORE	PRIOR TO
ENLISTMENT	HITCH
IF	IN THE EVENT OF
SAID	CLAIMED

Good taste. What can we say about good taste? It's relative. It's very easy to be misunderstood, and even when your meaning is quite clear, there's a chance that someone will feel it's in bad taste. You MUST, therefore, take all precautions to be sure your words, phrases and manner of presenting information will not embarrass your command, your service, or the United States Government.

Handling Titles and Names

Don't lead off a broadcast story with a person's name if you can avoid it. In the case of names and titles being used together, precede the name with the title. It should be, "SPECIAL AGENT ELLIOTT NESS," not "ELLIOTT NESS, SPECIAL AGENT." This alerts your listener that a name is coming up and gives them a better chance to comprehend your story.

Official titles

Refer to federal office holders by title or as "mister" or "ms." That is SENATOR JONES or MISTER JONES...CONGRESSMAN SMITH or MISTER SMITH...CONGRESSWOMAN BROWN or MS BROWN...

Difficult names. Whenever a difficult name isn't essential, use the person's title, such as "THE FOREIGN MINISTER OF SWEDEN..."

Initials. It's best to omit initials in a person's name unless it is a well-known part of the person's name such as HOWARD K. SMITH or MICHAEL J. FOX or F. LEE BAILEY. The other exception is when the nature of the story requires further clarification, such as births or deaths.

Phonetic spelling. If there's any way for an announcer to mispronounce a difficult or unusual name, assume he'll do it. So give him all the help you can. Write the phonetic spelling in parentheses, and place it immediately behind the troublesome word. Be sure to underline the phonetic syllable that is to be accented or stressed.

EXAMPLE:

SERGEANT KOLLMAN (COAL-MAN) ENTERED...

MUNICH (MEW-NICK), GERMANY IS THE CAPITOL OF....

Make sure the phonetic spelling appears on the same line as the word it represents.

When abbreviations are used, they are intended to be read as abbreviations. The use of well-known abbreviations is permissible, such as...Y-M-C-A, F-B-I, U-S, A-M, or P-M. You may also use MR., MS., and DR. "ST." may be used instead of "SAINT" as in ST. LOUIS.

Do not abbreviate military ranks or installation names. Use CAPTAIN CARLISLE (not CPT.), STAFF SERGEANT BAILEY (not SSG or SSGT.). Use FORT (not FT.) KNOX. Use NAVAL AIR STATION (not NAS). UNITED STATES or U-S AIR FORCE (not USAF).

Other Considerations

Abbreviations. A good rule to remember on the use of abbreviations in broadcast copy is...WHEN IN DOUBT, WRITE IT OUT. Hours and hours of extra time spent in writing things out isn't worth trading for one moment's embarrassment on the air. Consider as well, the additional chance of misunderstanding on the part of the listener.

Never abbreviate names of states, cities, countries, political parties (except G-O-P), days of the week, months, titles of officials and address identification such as street, avenue, drive or boulevard. Never start a sentence with an abbreviation, word, or number. WHEN IN DOUBT, WRITE IT OUT.

Acronyms. When using an unfamiliar abbreviation or acronym that will be pronounced as a word, be sure to spell it out in the first usage.

EXAMPLE:

"THE DEFENSE INFORMATION SCHOOL, COMMONLY CALLED DINFOS.."

"CHAMPUS - THE CIVILIAN HEALTH AND MEDICAL PROGRAM FOR THE
UNIFORMED SERVICES - HELPS SERVICEMEN AND THEIR FAMILIES."

All-CAPS or Upper/lower case. Do you type broadcast copy in all-caps or upper and lowercase letters? Some newsrooms favor an all-caps format for consistency with copy coming over teletypes. Studies, however, show that copy typed in upper and lowercase letters is easier to read. One thing to consider when using upper and lowercase is the chance of failure to capitalize, which could confuse an announcer and cause him to stumble.

Timing your copy. The total line count of a broadcast news release is the most common measure of the length or time. In television scripts, the storyline, or audio, shares the page with the video. Therefore, with only half the page for the story content, the typewriter margins are set for an average of 35 characters or spaces per line. As a result, 14 to 16 lines of television copy will average 30 seconds, or two seconds per line.

Total word count. Though not the preferred method, the length or time of a broadcast news release can also be measured by total word count. Announcers read at varying speeds, but the average is two-and-a-half words per second. This would mean approximately 150 words for a 60-second story.

Numbering pages. Whenever your broadcast copy is more than one page, pages are numbered consecutively: 1 of __, 2 of __, 3 of __. If your script is 10 pages long, the first page would be numbered 1 of 10, and the last page would be numbered 10 of 10. Page numbers are typed in the upper right hand corner of the page. Page numbers are extremely important in broadcast copy. Imagine an announcer on his way to an air shift, exactly on time who drops his copy and gets the pages mixed up. There won't be enough time to sort them out if they don't have page numbers.

The four-unit heading. This consists of a slugline, date, length of copy and type of release. The slugline serves as a little headline of the story. The date is the date the release was prepared. The copy length tells in seconds approximately how long it will take to read the story. There are two types of releases: the immediate release for hard news items and the like, and the general release for soft news, features, spots or any other material that doesn't have the immediacy of hard news.

EXAMPLE:

OUTDOOR RECREATION

APRIL 1, 19XX

(30 SECONDS)

FOR GENERAL RELEASE

In place of the type of release, you can have a DO NOT USE AFTER line with time and date. This is for timely material, usually about an event

that will run for a limited time. It gives the broadcaster a cut-off date or time to discontinue airing the release. You can also have a HOLD FOR RELEASE UNTIL line for advance releases. This is a good tool for providing material in advance, even though it shouldn't be aired until a certain time. It allows others to plan and schedule without putting the material out too soon.

Video-change spacing. In television copy, the rule is double spacing. When a video change is to occur in a television script, we then triple space. This alerts the announcer that there is a video change taking place. It may be returning from something else to the announcer on camera where more eye contact is required. The announcer shouldn't be seen looking off camera, and if for some reason he needs to look elsewhere, such as to a monitor for an on-cue point, the script will alert him as to when he won't be on camera.

On-cue. When reading to a videotape in a television script, announcers need a way to prevent coming out way ahead of the tape, or being too slow and thus behind the tape. The method used to do this is "ON-CUE." At selected points in the script, the writer builds in places for the announcer to pause, look at the studio monitor and wait for a particular point at which to restart. The number of times this is done in a script depends on the length of the script. The longer the script, the more times the announcer should pause. This is one way to provide for the varying speeds at which different announcers read.

The end or # # #. The number symbols, # # #, indicate the end of your broadcast release. Sometimes called "Dunphys," they should be centered under your manuscript column. You should have the word "more" in that same position at the end of each page to indicate that there is more copy on another page.

Editing Broadcast Copy

Absolutely clean copy -free of mistakes -is the rule for copy designed for outside release to television stations. Sloppy copy is a distraction to the broadcaster and it says something about you, your leadership and your unit that no one wants said. For in-house productions, edit marks may be used sparingly, but only those edit marks that are easily understood. DO NOT USE PRINT MEDIA COPY EDIT MARKS.

When inserting a period, comma, question mark, exclamation point, apostrophe, etc., just insert the mark where it should go. For other corrections, use one of the following broadcast editing methods:

are in the active voice and paint word pictures.

Features need logical development to be convincing. The lead sentence should grab the listener's attention. A sequential arrangement of facts brings the story to a logical conclusion.

At the end, a telling point illustrates the central idea or the informational objective of the story. Often, the telling point refers to the lead by restating the same idea.

Good features don't just happen...they're created through skillful writing.

Spot Announcements

Americans grow up with commercial messages and spot announcements. In contrast to features that may be used only once, commercials or spots are usually aired over and over again.

Department of Defense public affairs members do not write commercials. We write spots or spot announcements. Understandably, there is a similarity, since commercial messages are often called spots.

We think of the civilian media spot or commercial as something that sells a product. The spot announcement, as it applies to DOD public affairs, can do even more. It can "sell" the viewer on an organization, activity or attitude.

Types of spots. There are two forms of spot writing: SELLING and INFORMATIONAL.

The SELLING spot informs the viewer, then tells him to **do something**. The selling spot has three steps: ATTENTION, APPEAL, and ACTION.

The INFORMATIONAL or information spot simply **informs**. The information spot uses only the ATTENTION and APPEAL steps. It does not specifically tell the audience what to do (action, etc.). It simply informs.

None of the sentences in a selling spot should be over 17- words and the action step should not exceed six words.



AFTV
INFORMATION
ENTERTAINMENT

NAME	PVT SAM S. SMITH		
TEAM	B		
EXERCISE	THREE		
DATE	12 MAR 91	PAGE	1 OF 1

VIDEO

AUDIO

SWINE FLU SHOT
(12 SECONDS)

MARCH 12, 1991

FOR IMMEDIATE RELEASE

STUDIO LEAD IN

MARION COUNTY'S SWINE FLU VACCINATION
PROGRAM GOT A SHOT IN THE ARM TODAY.
THIS SEASON'S FIRST SUPPLY OF THE NEW
VACCINE WAS MADE AVAILABLE TO THE
PUBLIC. WE GET THE DETAILS NOW FROM
ARMY PRIVATE SAM SMITH.

(Example of EJ Script for a Studio Lead-In)



AFTV
INFORMATION
ENTERTAINMENT

NAME	SPC ROD CARLISLE	
TEAM	C	
EXERCISE	TWO	
DATE	12 MAR 91	PAGE 1 OF 2

VIDEO

AUDIO

FORT HARRISON LIBRARY

MARCH 12, 1991

(90 SECONDS)

FOR GENERAL RELEASE

ROD CARLISLE:

M/S LIBRARIAN AT DESK

(056 - 076)

(WHISPERING) IF YOU EVER FELT THAT
THE LIBRARY WAS A QUIET PLACE WHERE
YOU WOULDN'T EVER ENCOUNTER NOISE,
WE HAVE A SURPRISE FOR YOU.

L/S WORKERS INSTALLING PANELLING

(098 - 123)

(NORMAL VOICE) THE FORT HARRISON
LIBRARY IS EXACTLY THE OPPOSITE OF
THAT RIGHT NOW.

M/S CARPENTER SAWING PANEL

(133 - 145)

IN AN ATMOSPHERE THAT'S NORMALLY AS
HUSHED AS A LIBRARY THE SLIGHTEST OF
SOUNDS CAN BE DEAFENING. LOUD NOISES
ARE EVEN WORSE.

C/U SAW BLADE IN PANEL

(189 - 193)

HARRY JONES, CONSTRUCTION FOREMAN, IS
EXPECTING THE WORK TO TAKE ANOTHER
TWO DAYS. HE SAYS THE IMPROVEMENT
WILL BE IN MORE THAN JUST APPEARANCE.

(MORE)

(Example of TV News Script for EJ)



AFTV
INFORMATION
ENTERTAINMENT

NAME	SPC ROD CARLISLE		
TEAM	C		
EXERCISE	TWO		
DATE	12 MAR 91	PAGE	2 OF 2

VIDEO

AUDIO

ROD CARLISLE CONT'D:

M/S CARPENTER FITTING PANEL

(204 - 213)

AS EACH PANEL IS PUT INTO PLACE...

C/U CARPENTER'S HANDS ON EDGE

(227 - 234)

IT'S OVERLAPPED ON A PIECE OF...

L/S ENTIRE WALL BEING FITTED

(254 - 263)

FOAM BACKING THAT INSULATES, NOT ONLY
TEMPERATURE, BUT SOUND AS WELL. THAT
TAKES CARE OF OUTSIDE NOISE.

M/S PANELLED WALL THROUGH BOOK SHELF

(274 - 282)

HOWEVER, WHEN YOU COME TO THE LIBRARY
IN THE FUTURE, A CERTAIN PART OF THE
PAST WILL ALWAYS REMAIN.

C/U OPEN BOOK ON TABLE

(286 - 298)

WHEN YOU SIT DOWN TO ENJOY ALL THE
WONDERFUL VOLUMES YOUR LIBRARY HAS TO
OFFER, YOU'LL BE EXPECTED TO REMAIN
QUIET.

STAND UP

(WHISPERING) WHISPERING FOR A-F-T-V
NEWS, I'M SPECIALIST ROD CARLISLE.

#

(Example of TV News Script - Cont'd)



AFTV
INFORMATION
ENTERTAINMENT

NAME	SGT KARL DAVIS		
TEAM	D		
EXERCISE	THREE		
DATE	12 MAR 91	PAGE	1 OF 2

VIDEO

AUDIO

TRAFFIC JAM AT FORT HARRISON

MARCH 12, 1991

(90 SECONDS)

FOR GENERAL RELEASE

KARL DAVIS:

L/S TRAFFIC JAM ON POST ROAD
(007 - 015)

TRAFFIC HAS BEEN SNARLED FOR THE LAST
THREE MORNINGS ON POST ROAD.

M/S PIPELINE CONSTRUCTION
(019 - 022)

IT'S PART OF A PROGRAM TO UPGRADE THE
NATURAL GAS PIPELINES SUPPLYING THE
POWER PLANT.

C/U OLD AND NEW PIPES
(025 - 034)

EIGHT-INCH PIPE IS BEING REPLACED
WITH 14-INCH PIPE.

C/U JON SCHAIFER
(013 - 019) (A-ROLL)

WE ASKED POST ENGINEER JON SCHAIFER
HOW LONG THE CONSTRUCTION WILL TAKE.

W/S CONSTRUCTION SITE
(045 - 054)
M/S FLAGMAN
(061 - 069)
M/S PIPE LAYING OPERATIONS
(073 - 076)

ACTUALITY (28 SECONDS)

IN CUE: "WE ESTIMATE THAT THE...

OUT CUE: ...AHEAD OF SCHEDULE."

(MORE)

(Example of TV News Script with Actuality)



AFTV
INFORMATION
ENTERTAINMENT

NAME SGT KARL DAVIS
TEAM D
EXERCISE THREE
DATE 12 MAR 91 PAGE 2 OF 2

VIDEO

AUDIO

KARL DAVIS CONT'D:

L/S CONSTRUCTION SITE
(085 - 087)

IMPROVED HEATING AND AIR CONDITIONING
COSTS IN MANY WAYS.

STAND UP

AND THE TRAFFIC PROBLEMS ON POST ROAD
IS ONE WAY YOU'LL CONTINUE TO PAY.
FOR A-F-T-V NEWS, I'M ARMY SERGEANT
KARL DAVIS.

#

(Cont'd Example of TV News Script with Actuality)



AFTV
INFORMATION
ENTERTAINMENT

NAME	SGT EDDIE HORNER	
TEAM	E	
EXERCISE	SEVEN	
DATE	12 MAR 91	PAGE 1 OF 2

VIDEO

AUDIO

LIBRARY SPOT

MARCH 12, 1991

(30 SECONDS)

FOR GENERAL RELEASE

ANNOUNCER:

W/S FAST Z/I TO LIBRARY DOOR

YOUR LIBRARY IS THE SCENE OF ACTIVITY

M/S FAST Z/I TO BOOKSHELF

IT'S NOT JUST A PLACE TO STORE BOOKS.

FRAME COMPRESSION BOOK OUT TO FILL

INSIDE THESE PAGES ARE MINIATURE
WORLDS

SLIDE #4593 SHIP IN LAGOON

WORLDS OF ROMANTIC VOYAGES...

DIGITAL FLIP TO NEW SLIDE #4973

FLIGHTS OF FANCY...

LOSE SLIDE TO STAND UP

JUST ABOUT ANYTHING YOUR HEART
DESIRES AND IT'S SO EASY TO PICK UP
YOUR VERY OWN LIBRARY

ECU LIBRARY CARD Z/O TO FORM

CARD. ALL YOU
NEED DO IS FILL OUT A SIMPLE FORM,
WITH YOUR UNIT NAME AND BUSINESS
PHONE.

(MORE)

(Example of TV Spot Script for EJ)



AFTV
INFORMATION
ENTERTAINMENT

NAME	SGT EDDIE HORNER		
TEAM	E		
EXERCISE	SEVEN		
DATE	12 MAR 91	PAGE	2 OF 2

VIDEO

AUDIO

W/S MAN AT BOOKSHELF

C/U HAND ON BOOK

CG: LIBRARY PHONE NUMBER

ANNOUNCER CONT'D:

THEN YOU'RE IN BUSINESS. YOU HAVE

ACCESS TO ALL THE WONDERFUL

BOOKS THAT CAN OPEN NEW

WORLDS OF

EXCITEMENT. IT'S ALL AT THE LIBRARY.

#

(Example of TV -Spot Script for EJ)

ANNOUNCING

The announcing in TV news inserts is done by a reporter. Reporters are the heart of the news gathering system. Without them, there would be no news. In most cases, they go out, gather the facts, do the initial writing and editing and process it all into a news story.

While there are few differences between military and civilian broadcasts when it comes to television, one of the most obvious is in the appearance of the reporter in the news insert. In civilian television reporters are seen doing their work in the field or in the studio. The audience comes to know them and respect them. Most reporters gain a celebrity status. They usually have some title such as investigative reporter, or economics reporter, field reporter, general assignments reporter, and so on.

The military reporter, on the other hand, usually does all the reporting, and seldom appears in his work. We are not in the position for the purpose of marketing ourselves or becoming celebrities. A certain amount of recognition is unavoidable in the course of getting the job done, and it will even lend credibility to our product. You will find a level of cooperation present almost everywhere that few other military people experience. It's all right to smell the perfume as long as you don't drink any of it. Remember what you are there for, and that your most valuable asset is the ability to communicate information and ideas clearly for the purpose of command or public information. Use the recognition and cooperation to get the job done and create a better product.

In this lesson, we'll talk about what reporters do with ENG technology, and how they do it. Although technology doesn't do the work for the reporter, it does have a lot to do with it. Good solid reporting still begins with Who, What, When, Where, Why and How. Those elements, processed with accuracy, brevity and clarity, are still the necessary ingredients of good news reporting. Beyond that, the ability to find the right word or turn a phrase at just the right time to make the report interesting, informative and illuminating, will make the news report, as well as the reporter, stand out.

There are two basic types of news reports you will generally be dealing with. They are the spot news event and the news feature. The techniques you employ to cover these two types of stories will be similar, but with one important difference. That difference is in how much time you have to prepare for the story. The news feature can be planned well in advance, allowing the reporter time to think about and plan the coverage. An example of the news feature would be the flu shot program or the remodeling of a facility where it is news, but planned. The spot news event is

a breaking event, usually fast-moving and spontaneous. It seldom allows for any planning except in the most general sense. Examples of spot news would be fires, accidents, explosions, natural disasters, hijackings, shootings and other bad news events.

The only planning for spot news events would be in the form of some kind of disaster plan. The best way to begin to formulate a disaster plan is to say, "What if.." and then follow it with every contingency you can think of. Although you'll never be able to anticipate every possibility, you will be better prepared for many spot news events.

The Spot News Event

Coverage of a spot news event, a breaking story, presents a number of challenges. There will be two basic situations you'll be in when the story breaks. One will be when you're around your unit or station doing other things. The other will be when you're out covering something else. If it's the first, grab the equipment, find out as much about the situation as possible in a minute or two and get out to the site of the event. If it's the second situation, the timing usually means you'll have to either discontinue or rapidly conclude the story you're working on and move to the new location. Here is where planning of a general nature will come into effect. Will it be your habit to take double the batteries and tapes out on each shoot, or will you not have enough with you to do another story?

Experienced reporters will attest to the fact that this is where you'll have the most difficulty in ENG. The ability to change gears right in the middle of the story and go to something completely unrelated and start all over is perhaps one of the most difficult things to achieve. It can even be a bit dangerous in certain situations such as events where there is confusion and chaos. People get hurt in training accidents even when training is all they have to concern themselves with. Coming from an unrelated situation and different mind-set will add to any danger that is present.

Train for safety. Since television news field reporting can take you anywhere it is necessary to stress safety. Air crews are constantly reminded that safety is paramount. They are alert to dangerous situations and try to stay out of them. They follow preflight checks and flight rules scrupulously. You should pay as much attention to safety as the air crew.

ENG equipment is bulky, and you'll often have to take it into dangerous areas. Use common sense, sharpen your instincts, and protect yourself and the other members of your crew from danger. It would be silly to drive

so fast to a news event that you have an accident on the way. Likewise, around a construction site, you should stay clear of heavy equipment in operation. Stay well back from exposed electrical power lines. Don't lean far out of a tenth floor window to get that high-angle shot. Don't set up in the middle of a superhighway for that great into-frame-out-of-frame sequence. Don't set up your tripod on loose ground. When carrying the camera, be careful of where you step and always be aware of what is beside and behind you. Above all, don't become fixed in the viewfinder so much that you are unaware of danger around you. Since the viewfinder is a miniature television screen, don't get the feeling that since you're seeing the action on television, it's the same as sitting in your living room watching a war movie. **You're still in the thick of the action.**

Teamwork. The relationship of the reporter to the crew is critical. It must be a positive relationship if the team is to succeed. In a business where personalities and egos sometimes get swelled out of proportion, it is imperative that everyone be willing to accept the professionalism of others, particularly in military organizations where duty assignments require people to work in the same place without consideration of personalities. Personnel administration has enough in the way of limitations without adding problems like the inability of two large egos to work together professionally.

It may not be necessary for crew members to like each other personally, but they must get along well professionally, and not allow personal differences to get in the way of the mission. Perhaps the most important element to being able to work together is to communicate. If everyone is willing to talk out differences with an open mind, you will come to an understanding, sooner or later. Be polite to your fellow team members, and mean it. Develop the habit of using the words "please" and "thank you." A little courtesy goes a long way, both with your fellow workers and with the public.

Everyone should have a mutual respect for the equipment, and the problems the other crew members have in operating it. You can't detach yourself from the need to protect it and take proper care of it.

Reporting the spot news event. There are five general reporting problems that we must deal with in the spot news event.

- o Time constraints and deadlines
- o Fact gathering
- o Sources
- o Building the story
- o Clarity

Time constraints and deadlines. There are few assumptions that are acceptable, especially when you deal in facts. One of them, however, is assuming that you won't have enough time to get everything you need for your story. Don't hurry to the point of doing substandard work, but if you keep in the back of your mind the fact that you'll seldom have enough time, you'll be less likely to waste it. You may have deadlines or time pressures of another kind placed on you. Maybe the event occurs mid-afternoon and you need to get your report covered and filed before the evening news. Timing is everything. If it isn't on the news tonight, it'll be in the newspapers before the news tomorrow night and that will take all the immediacy out of your report.

As you race around to find out what you can, stick to the basic elements. You'll have a better chance of getting what you need than if you run around without any organization. Remember Sergeant Friday of Dragnet..."Just the facts, Ma'am!"

Fact gathering. You must capture the basic framework, the Who, What, When, Where, How and Why of the story as quickly as possible. These are always the basics you need in any story. The How and Why are not always as easy to obtain as the others, but they are also the two that you can find out more about later. Beware, however; they are also the two where people are most likely to speculate.

Sources. Be sure of your source. Very often when you are at an event, people will want to get on television and they will want to be interviewed. That will make it difficult for you to sift out what is factual and what is not. Here's a list of things for you to think about.

- o Who is in charge?
- o Who is the official source?
- o Who or where is the information coming from?
- o Is there anyone here whom I know is the authority?
- o Is there more than one side to this?
- o If so, who is the spokesman for each side?
- o Is what I hear the same as what I see?
- o Do I see something others don't?
- o Can, or should, I do something about that?
- o Does anyone here have a personal interest in this?
- o What can, or should, I do about that?
- o Is there more than meets the eye?
- o Will this event affect other important things?

When asking yourself these questions, you may not be able to come up with answers to all of them. The information you get will determine how many questions you'll be able to answer correctly. Some people may give you opinions based on limited knowledge they have at the moment. Some may try to give their versions for personal reasons. And remember, everyone isn't

a journalist, and some people speculate. The more you cover the better you'll get at sensing what are facts. The more you know about the military, the more you'll be able to distinguish truth from fiction in military events. You will have to rely on common sense, experience and gut feelings. Ask yourself: Does this make sense? Is it logical? Does it come from more than one source? Did you check with more than one source? Is this the best source? Does the source know first hand or second hand, or even less directly? If your source uses phrases like "I was told," or "I heard," perhaps you should seek out another primary source. Is it official, unofficial or rumor? We never report rumors, but we do check them out.

Building the story. You'll find the most precious commodity at a spot news event to be the time necessary to think things out. There will seldom be enough time, but you must take enough time to formulate your story properly. Determine the approach you are going to take with the story. Stay with the basics. Develop a sense for what is important and what is significant. It's up to you to build for your audience a clear, concise picture of the main elements of the event. Keep it straightforward and simple. Take it a step at a time. Develop and finish one element before going on to the next. Don't jump back and forth between important elements in the story. Keep the story organized and moving forward. Make your story a tight report of known facts and keep it in logical sequence.

After you have done a good job of building the story and giving your audience all the important facts in logical order, be sure to have a good solid ending. How you end the story can be the finishing touch, or the one effort that destroys all your other efforts. You may want to re-cap or summarize the facts you've reported. But be brief. Don't get carried away with your eloquence.

Clarity. There will be later chapters on writing and scripting, but it is logical to point out here that all the rules of simple, tight, easy-to-understand writing that apply to the writing of a script, also apply to anything you may conjure up or ad-lib on the spot. It's almost impossible to maintain proper wording and grammar if you start using a lot of compound and complex sentences. You wouldn't do it in the writing of a script. You shouldn't do it in what you put together in the field on a spot news report. Always try to:

- o Use declarative sentences.
- o Keep verbs in the same tense throughout the story.
- o Keep pronoun references clear.

When using big colorful words, you take a chance on conveying an incorrect meaning or creating a false impression. Sometimes the more simple

language is called for. It's better to speak below some of your audience and be understood by all than to speak above any of your audience and not be understood by some. Beware of speaking down to anyone though. Strive for that balance where your audience understands you and can relate to what you say.

The News Feature

Unlike the spot news event, the hard news feature will probably allow you at least a little time to research the subject, to plan the coverage possibilities, and set up some aspect of the coverage in advance. On-camera interviews with people who make the news can be scheduled. You can outline the story and a tentative structure can be applied to it.

Proper research takes hard work. You'll get a jump on any story with library files and scripts on file of all of your past stories. If you have any sort of beat system, you should have file footage and facts concerning your beat. These may include newspaper and magazine article clippings, other background information, any notes you've made, lists of phone numbers and in short, anything regarding anyone or anything you may be called upon to cover. Of course, you'll have to have some sort of filing system that will allow you to lay your hands quickly on needed information.

Even if you're not a fountain of information on a given subject, you may have sources that can enlighten you about your topic. By contacting knowledgeable sources, you might quickly improve your chances of getting the right information, or at least bringing up to date what you have.

If you don't even have enough information to know what to find out, that in itself is a good question. "If you were me, what would you ask?" If research is important --and it is --what you do with the information is even more important. Use what you learn as a foundation. Think things through and try to imagine and question every possible aspect of the situation. Who is involved? What do you want to ask them? What is the mood of the story? What are some of the visual possibilities and opportunities? What about natural sound? What might be particularly difficult, dangerous, sensitive, or hard to understand? How can you really bring the story to life for your audience? When you get answers, think of what further questions they bring about. There is no substitute for research. The better you are informed, the more completely you can tell the story.

Those are just some of the questions you can ask about almost any situation or story. As you go through the mental exercise, other questions will come up. That's one of the advantages of the procedure. All the while, you'll be getting valuable insights and perspectives on the story, and that's the first step in producing a precise report that will make sense to your viewers.

When do you spend time on research? In spot news event coverage, the event is happening now and if you were to take time to research something, the event would be over and you would not have covered it. That's why you have contingency plans. In the news feature, there is more often time to spend on research. You may think that time is too precious to waste, but the truth is, you can't afford not to spend the time. It's the price of excellence and success. Having done your research, you begin to gather the facts in the field. Start looking for information that will help you answer the final questions you should be asking yourself. The most important questions are:

- o What do we really have here?
- o What is this story about?
- o What does this story mean?
- o What do we want to convey to the viewer?

These are simple questions. Try to come up with equally simple answers. Be aware that sometimes the most obvious answer may not be correct. Take a good look at your answers and try to find fault with them. Play the devil's advocate to yourself.

All this may be a lot of mental exercise, but it's worth it. You'll find that the rest of the job will be much easier. Now you're coming to the most interesting part of the job, putting together your field report and organizing all your facts into a story. Remember, a story has a beginning, a middle, and an end.

Opening Segment. As we said, your story must have a beginning, a middle and an end. Which is the most important part? Even the experts disagree. Everyone will agree, however, that all three parts are important. The best way to treat that question would be to feel that they are all too important to give any less than maximum effort. They are three distinct segments and each of them is important in its own way. It makes good sense to give each of them special attention.

The intent of the open or lead is to attract the viewers' attention. You must grab their interest and point them in the direction the story will take.

There are two types of leads: hard and soft. A soft lead is rather non-specific and generalized. It sort of flows into the story. A hard lead, on the other hand, is much more specific and direct. It zeros in on the most newsworthy element of the story.

Either way, the lead must stimulate the viewers to pay attention to the story. But it's not just a matter of getting their attention, it must be done in such a way as to be consistent with the rest of the story. Changing gears right after the lead will only serve to disorient or disappoint your audience when what you really want to do is focus their attention on your message.

Including An Actuality. If you are going to include an actuality in your report, be very careful in the wording of your questions. Remember, you have one goal, to get the word "straight from the horse's mouth," so to speak. You will use either the newsmaker or an eyewitness of the event. Either way, the interviewee will most likely be unaccustomed to being on camera or at least unfamiliar with what you need most from him. There are two hazards to avoid: the yes-or-no answer which is, of course, too short and the non-stop talker whose answer takes too long. Most people will fall into one of these categories if not handled correctly. It's the question and how it's asked that will assure your success or failure in avoiding these pitfalls.

Your interviewee will most likely lack announcing skills as well. He won't know how to talk to only one person when addressing a camera. Be the one person for him to talk to. Listen to his answers and look at him when he is answering your questions. Looking around or checking your notes while he is talking is both rude and distracting. He will probably think that you have tuned him out, and may even stop talking in the middle of his answer. You will also stand a much better chance of coming up with that obvious follow-up question that will clarify his answer.

Control of time. Since you're taping your actuality, re-ask a question if the answer is too long-winded. Reword your question so that the answer will be more along the lines you're looking for. But avoid things like, "In other words, you mean" This is bad for two reasons. You're putting words in the interviewee's mouth which may or may not be what he wants to say, and you might get a simple, "Yes." Another time-control measure is to keep your questions short and to the point. Let the interviewee tell the story. After all, that's the purpose of doing an interview in the first place. Interviewees can sometimes get off track or provide more detail than you need. Here's where you must take control. Although interrupting is normally rude, it may be necessary. There are acceptable ways to do it. Be gentle. A "Pardon me," or "Excuse me," never

hurts, but they can go along with a "Let's emphasize that point," or "Can we go back over that?" to let the subject in on what you're doing. Most people will understand if you handle it properly. You might be surprised at how your subject will respond to a well-coined phrase like "In the remaining few seconds," or "We have time for just a brief word." If they have ever watched television, chances are they've seen this done before.

Get in the habit of leaving a brief pause between questions and answers. It needn't be anything long, but you'll find that a little space will come in handy during editing. You will always be able to edit out any dead air.

Reverse questions. These are also called reporter cutaways. You will want to ask the questions again with the camera on you. The subject will understand with just a brief explanation. Be sure to do it in the presence of the interviewee and in the same spot for continuity in editing. Normally you won't use the questions in your finished piece, but be very careful to ask the questions with exactly the same wording so if you do need to use all or part of the footage, you'll be able to edit anywhere you want. This reverse angle footage can be useful in a number of ways. One would be to cut an answer short by switching to the video of you, with a slight pause beforehand, going into the next question.

You'll want some reverse angle video of your reactions to the subject's answers. Then if the subject looks off camera, or something else of a visual nature is distracting, you can just edit it out, without interrupting the audio that you want to keep.

Get to the point. If the opening segment grabs the viewer's attention and the close wraps it all up, then the middle is where you do the real telling of the story. Stick to the point. Remember? What does this story really mean? Don't be afraid to explore side issues, especially if they add to or shed light on the real story, but make sure you don't ramble around on a lot of issues that don't belong in the story. Don't forget the five W's and the H.

Concluding The Story. The closing of your story is at least as important as the opening. After an opening aimed squarely at the mark and a body that brings all out the facts and gives a clear, concise picture of the event, you need to tie it all together in a manner that will make sure the viewer gets all the information. Be sure that your close comes from the facts already in the story. A summary or recapitulation of the three or four main points of the story will ensure the viewer understands what has been presented.

Above all, remember that reporters are reporters and not editorial writers. Just as you would not insert conclusions that are not supported by fact, neither should you insert your own personal opinions, judgments or characterizations. Good field reporting requires all of the reporter's ability to tell the story in a clear, concise, logical manner. The hard news feature requires careful planning, organization and intense focus on the story's main point. The spot news event by its nature doesn't allow the specific event planning of the feature, but planning in the generic sense should still be there. And, of course, tight organization and intense focus are still a requirement. Because time will not allow you to tell everything there is to know about a story or event, it's up to you to decide the main point of the story and convey it to your audience.

INTERVIEWING

This is where it's extremely difficult to do the whole job by yourself. Interviewing in the field is best done by two. One, the reporter, and two, someone to shoot the video. It can be done by one person, but if at all possible, there should be at least two members in the crew. This lesson is going to address the two parts of an interview; from the standpoint of the reporter, and the shooting of the interview by the camera operator.

Interviewing is the part of ENG that camera operators find the most boring. There are already too many "talking heads" on television news programs, but when they have something interesting and significant to say, they are an important part of the daily news. Use them to tell the story, when they are the authority or when they are closer than you to the story. Just be sure that what they have to say is pertinent or important.

Camera location in relation to the subject is very important and there are several commonly used shots and angles. The most common angle used is over the shoulder of the reporter. (See Fig. 3-1 Interview Camera Angles). From this angle, you can affect three widely acceptable camera shots. With a wide field of view (the long shot), the reporter and subject are shown together.

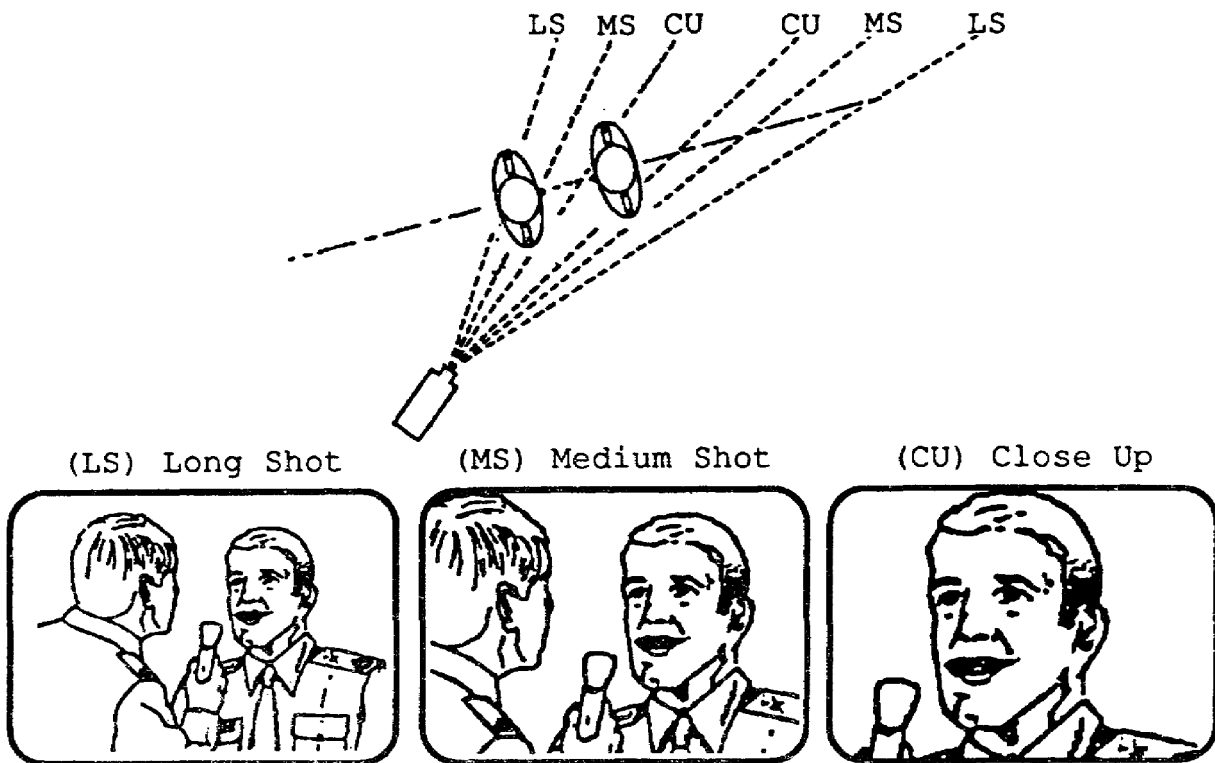


FIGURE 3-1. INTERVIEW CAMERA ANGLES

This shot shows the viewers that what they are looking at is an interview. A medium shot will still have a portion of the reporter in the picture while allowing the audience to get a closer view of the subject. It will still give the viewer a sense of the closeness of the subject to the reporter. And of course, the tight shot doesn't show the reporter at all and gives the viewer a close up view of the subject.

During an interview, the person being interviewed will usually be tense and nervous. After all, he is for the most part, doing something completely foreign to him. This can be overcome by an experienced reporter, and indeed, it's his job. Let the interviewee know that he is to give his answers directly to you, to look at YOU when he answers YOU. It's important that you look back at him when he is talking to you. This will make it more like a natural conversation to him. Put him at ease. He will be depending on you as a security blanket and confidant.

The over-the-shoulder angle establishes a line of action. Whichever shoulder you shoot over, all shots should be on that side of the reporter and subject (Remember the 180 rule?). And of course, remember all the little tidbits of information you learned about plants growing out of people's heads and so forth. You can make the background fit the interview. You can separate the background with light and darkness. You can lose the background with depth of field.

Another thing you should know when it comes to the interview is the four-point lighting system, even though most portable lighting kits have only 3 instruments (See Fig. 4-2, Four-Point Lighting System).

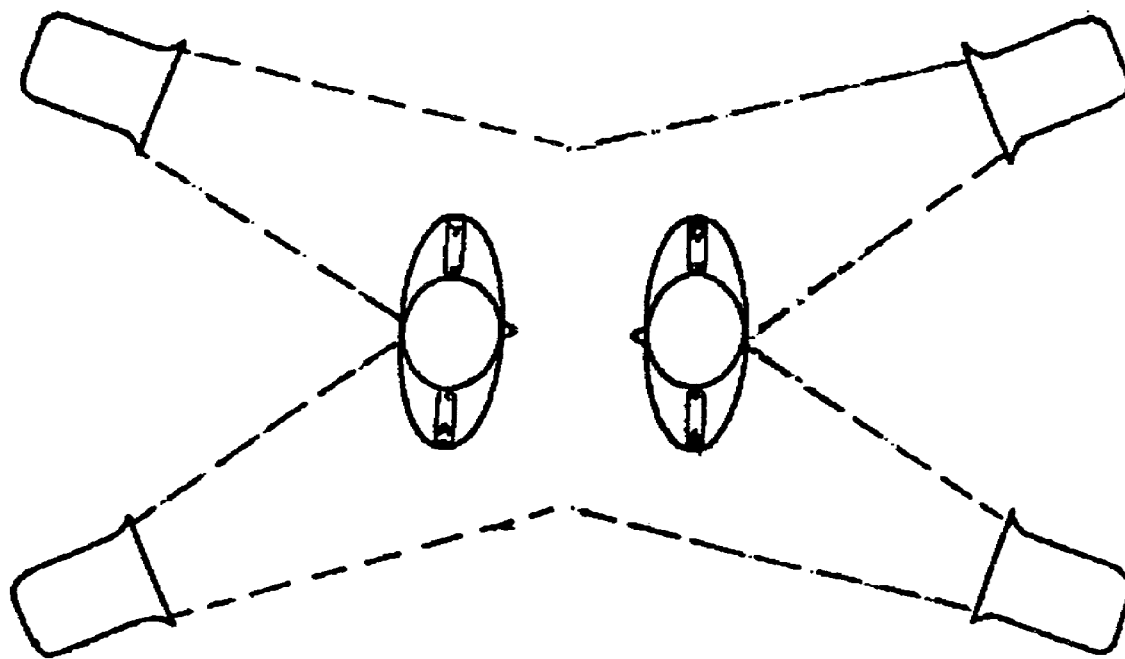


FIGURE 3-2. FOUR-POINT LIGHTING SYSTEM

In the four-point lighting system, the key light for one subject is behind the other subject and works as a back light when the beam is spread just a bit. With the addition of the fill light on the same side, you then have a combination of the three-point lighting system and the modified three-point lighting system. The key and fill lights for one subject work the same as the two back lights of the modified three-point system for the other subject. And of course the other subject has a key light and a fill light in addition to the two back lights.

EDITING

After all the functions you've performed in announcing, writing, scripting and interviewing, you have still more. It's like all the parts of an automobile. They've been manufactured, but they're still just parts. They must be assembled to make a car. The same holds true for your TV news insert. You now have all the parts, but you must assemble them. That job is called editing, and just as in the assembly of the car, you still have important work yet to do. Depending on local SOP, there will probably be additional elements to add to what you've already shot in the field, such as color bars, countdown leader, start flash, etc. While you edit the PRIMARY and SECONDARY footage you shot in the field to your slave tape, you'll keep a close eye on audio and video levels. Keep the quality level of performance high as you perform these routine and sometimes boring

tasks. Make sure all your edits are clean and avoid jump cuts. (Lesson Four, Subcourse DI0350,)

A few years ago, the Ford Motor Company informed the public in its commercials of how to spot poor automobile assembly, what to look for in the showroom. The gaps at places where parts joined. What a seam between door and fender should look like. Evidently they felt that they did a better job than their competition in putting together equally good parts. Proper assembly is important. It's so important, that this subcourse devotes an entire lesson to it even though there was an introductory lesson to it in Subcourse DI0350. Therefore, we're just going to emphasize the importance of it here, and refer you to Lesson Four. Go forth and learn more about videotape editing.

PRACTICE EXERCISE

LESSON 3

SUBCOURSE NO. DI 0351

PREPARE/PERFORM TV NEWS INSERTS

INSTRUCTIONS:

Review the material in this lesson. Answer the questions below by circling "T" or "F" next to each question. Compare your answers with the answer key on the next page.

- T F 1. TV news inserts make up a very small portion of the electronic journalism business.
- T F 2. The basics of any news story are the who, what, when, where, why and how.
- T F 3. How you word your questions will have a lot to do with how an interviewee will perform.
- T F 4. The news feature is fast breaking and allows no time for planning.
- T F 5. The six C's of broadcast writing are: clear, concise, courteous, complete, current and correct.
- T F 6. Material in parentheses is information not normally meant to be read aloud.
- T F 7. The spot news event and the news feature are the two types of news reports.
- T F 8. Department of Defense spots may only be aired once.
- T F 9. You should include as many facts in the opening of a story as you can.
- T F 10. You should triple space lines at places in the copy where video changes occur.
- T F 11. You should never interrupt an interviewee in the middle of an answer.
- T F 12. The lead of a story should grab the audience's attention.

ANSWER KEY
PRACTICE EXERCISE
LESSON 3
SUBCOURSE NO. DI 0351
PREPARE/PERFORM TV NEWS INSERTS

1. FALSE (Page 36)
2. TRUE (Page 37)
3. TRUE (Page 66)
4. FALSE (Page 59-60)
5. FALSE (Page 37)
6. TRUE (Page 43)
7. TRUE (Page 59)
8. FALSE (Page 51)
9. FALSE (Page 38)
10. TRUE (Page 49)
11. FALSE (Page 66)
12. TRUE (Page 51)

LESSON FOUR

EDIT VIDEOTAPE

46R Soldier's Manual Task: 214-177-1318

OVERVIEW

LESSON DESCRIPTION:

This lesson will provide you an overview of editing video-tape.

TERMINAL LEARNING OBJECTIVE:

ACTION: Describe procedures necessary to properly edit videotape.

CONDITION: You are given the material presented in this lesson.

STANDARD: Perform all the duties described in this lesson.

REFERENCES: The material contained in this lesson was derived from the following publications:

STP 46-46R14-SM-TG Soldier's Manual &
Trainer's Guide, Broadcast Journalist,
MOS 46R Skill Levels 1/2/3/4, August 1988.
Defense Information School Radio and
Television Handbook, May 1982.

EDIT VIDEOTAPE

INTRODUCTION

The most useful or important thing about videotape is the fact that you can edit it. Editing can range from simple cut-only edits to electronic edits that go through switchers and effects banks to create dazzling special effects. The kind of system available to you will determine the degree of complexity and level of accuracy in your editing. All 3/4 inch video cassettes require an inserted red pin to permit editing on them. Whenever your system won't edit, check that first.

MECHANICAL EDITING

In the early days of videotape recording, the only way to edit videotape was to physically cut the tape and splice it back together the way film is edited today. This is extremely difficult because unlike film, which is a physical or chemical process from start to finish, videotape is all electronic. You can't actually see where a picture starts or stops on the tape, and you can't just cut it anywhere like you can audiotape. It has to be spliced between invisible electronic video frames to prevent the picture from tearing and breaking up during playback. There is a special fluid you can apply to the control track to make the electronic pulses visible in order to splice between them, but they are visible only under a microscope. To make matters worse, there is a separation between the video heads and the audio heads making the audio at a different place on the tape than the video. Also, the video is diagonal due to the helical scan process. The complicated process of cutting and splicing videotape is all but a forgotten art, and is now used only in cases of extreme emergency. Today, videotape editing is done electronically.

MANUALLY CONTROLLED ELECTRONIC EDITING

The problems you face with mechanical editing, trying to locate the exact edit point and trying to cut precisely, are no longer problems with electronic editing. Electronic editing is a transfer process where a playback machine transfers the recorded segments of program material to an edit/record machine. In other words, it's simply a dubbing process where the recording machine copies the material from the playback machine. With most videocassette editing systems, there are playback machines, record machines, TV monitors and edit controls (See Fig. 4-1 Videotape Editing System). The edit controls allow you to find accurate beginning and ending --"in and out" --points for your edits. The TV monitors allow you to

view the video being played back and the video being recorded. The editing controls shuttle the tape back and forth, allowing you to do the actual edits.

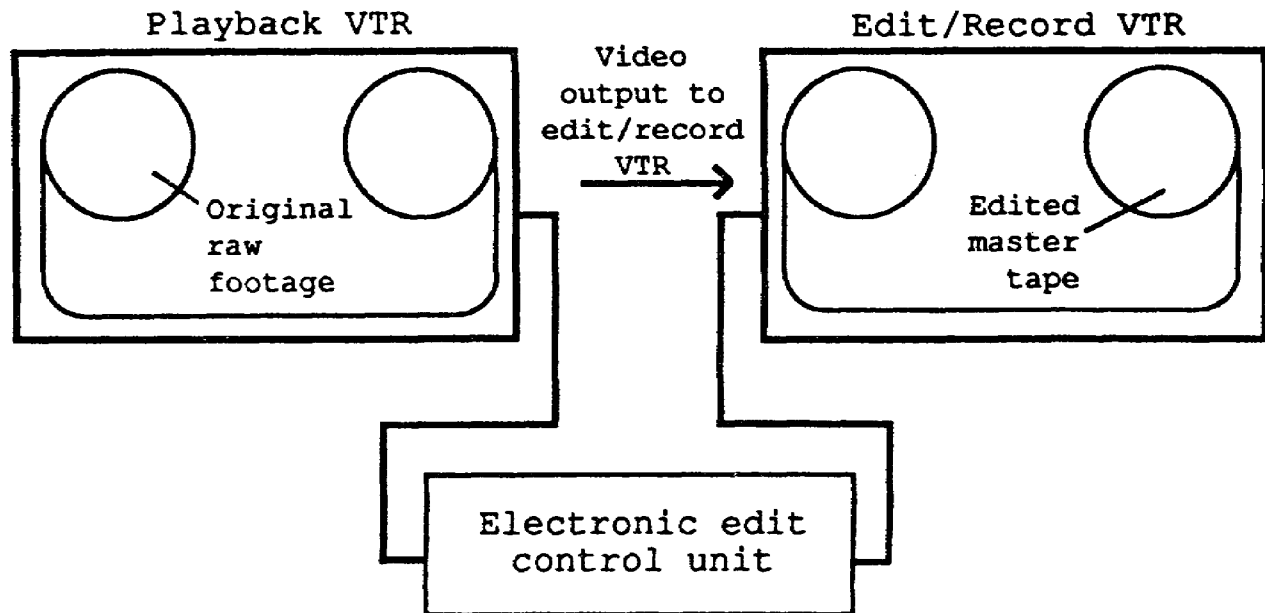


FIGURE 4-1. VIDEOTAPE EDITING SYSTEM

It is already obvious that videotape editing differs from audiotape editing. So far we have spoken of one manner only. The second way it differs is due to the fact that videotape takes a second or two to get to the proper speed and stabilize. That means that the tape must be traveling the correct speed with all the electronics stable when the edits are made. This can be a little tricky in the manually controlled electronic editing process. It's called "editing on the fly."

The process is usually done in six steps. They are as follows:

1. Determine the "in" point on the record/edit machine. It would be a good idea to play the scene over a few times to be able to hit the exact same point with regularity. This will be the point where you want the next scene to begin.
2. Find the "in" point on the playback machine. That's the point where the new material begins, the material you want to transfer to the tape you're creating.

3. Rewind both machines exactly the same number of seconds and frames. This is called the preroll, and it is used to give both machines enough time to get up to speed and stabilize before the edit is actually made. In manually controlled editing, it should be about ten seconds. Just make sure that both machines are rewound EXACTLY the same amount.

4. Next, start both machines in the play mode at the same instant and watch the record/edit machine monitor. When it gets to the precise point where you want the edit to begin, push the record button. This will change the machine from playback to record while everything is rolling at the proper speed and all the electronic circuitry is stabilized. You are now making the edit.

5. Let the edit (both machines) run past the point where you want the next edit to begin and then stop them. This is called a video pad. The purpose of the pad is to allow you the room to begin the next edit without having to be so precise on the in point.

6. Then, of course, recue the record/edit machine and check your edit. Make sure it's clean, without video break-up. If there are more edits to be made, start over with step 1.

It should be evident now that precision and accuracy are of utmost importance in this editing process. If either tape machine is the slightest bit off, the edit will be too early or too late. Too early means that you have recorded over something you wanted in the previous scene, and too late means you have gone beyond the desired point to begin the edit.

Assemble Edits

All electronic editors permit you to edit in two modes. They are "assemble" and "insert." There are a number of facts about assemble editing that are not true about insert editing. They are:

1. The assemble mode edits everything on the tape to include the control track (See Fig. 4-2, Assemble and Insert Editing).

2. There is no preconditioning of the record/edit tape necessary.

3. Since the control track is laid with each edit, there is the possibility of a variance in the spacing of electronic pulses that will cause a tearing of the picture at that point (See Fig. 4-2 Assemble and Insert Editing).

4. Following each edit, there will be a loss of control track causing a "dirty edit." This makes it absolutely necessary to leave a video pad at the end of the edited segment.

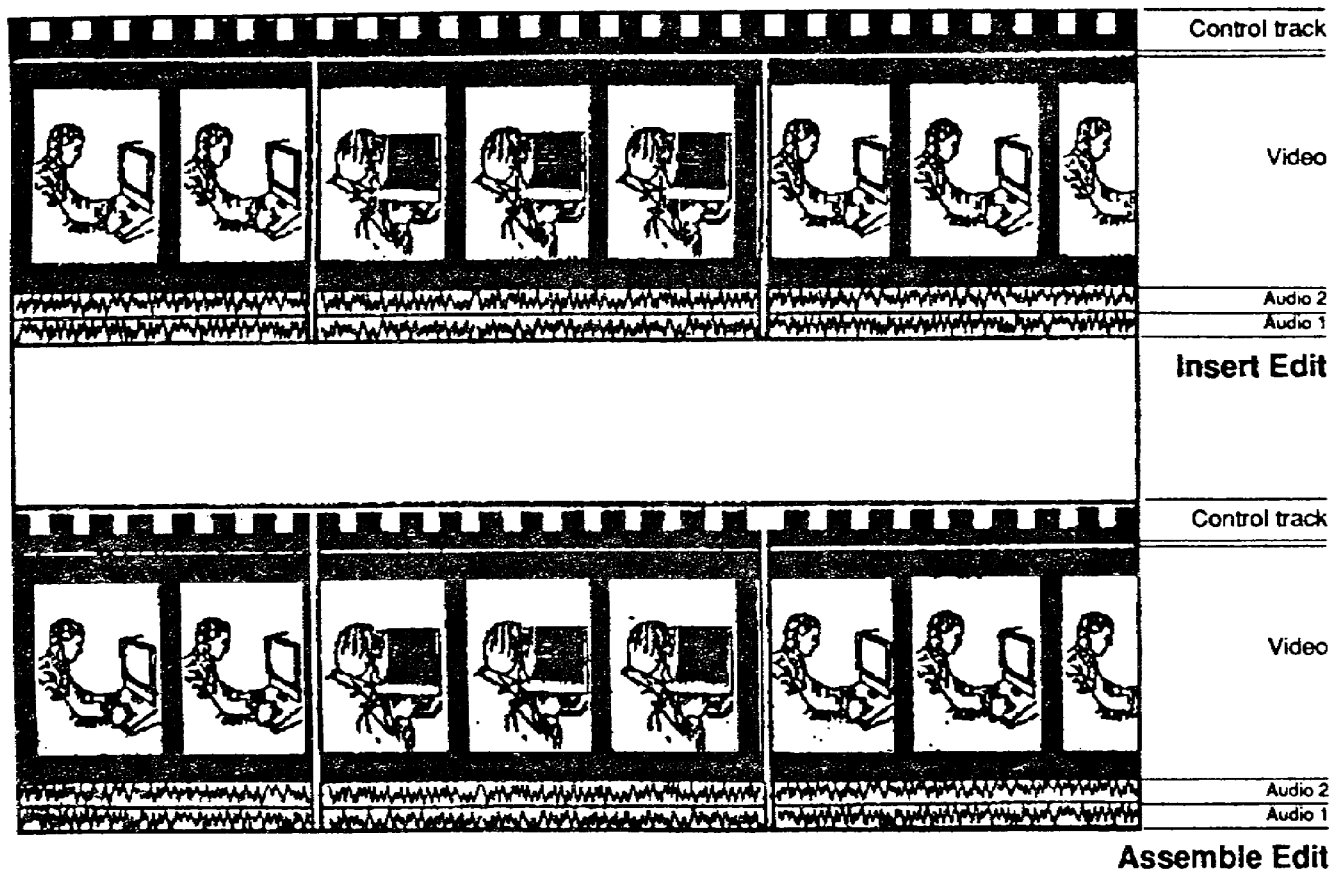


FIGURE 4-2. ASSEMBLE AND INSERT EDITING

Insert Edits

The initial purpose of insert edits was to allow the addition of audio and video to programs that already existed. Everyday you see examples of such additions. The movies have done it since their beginning. For example, you may see someone looking into a box, then see what they see inside the box, then see them again for their reaction. Of course, the shot showing you what is in the box was shot separately from the other, and edited in later. To do this in videotape with the electronic editor, you need to select the in and out points in the insert mode. You must program the out point because otherwise the tape would continue to edit beyond where you want it to stop.

Insert editing uses control track that already exists and allows you to edit the video track, the audio one track, the audio two track or any combination of the three. Since no new electronic pulses are being laid on the tape, there isn't any danger of variance in spacing of the pulses that could cause tearing of the picture. It is a much more stable edit and most experienced editors prefer this method. The disadvantage though, is that you must first lay control track for the length of tape you intend

to use. A one-hour tape, for example, will require you to record an hour of control track. This is called crystal black and you must record it from another tape, studio output or a black burst generator. Of course, to record control track on your tape, you will have to be in the assemble mode. Your editing will then be done normally, but in the insert mode.

* * * * OPERATOR WARNING * * * *

After laying the control track in the assemble mode, be sure to change the edit control unit to insert mode. Once you begin to make your first video or audio edit, if you haven't changed out of the assemble mode, the end of the edit will be dirty and there is no way to correct it without re-laying the control track for the entire length of the tape.

Of course, if you think ahead, you'll have a supply of prerecorded crystal black tapes on hand so that emergency editing jobs or fast-breaking stories can be insert edited on a moment's notice.

PROGRAMMED ELECTRONIC EDITING

There are several edit programmers or edit control devices available for both quadraplex and helical machines. They allow you to predetermine the exact points where you want the edits to begin and end.

Although the edit programmers differ slightly, the basic process works like this:

- o Find the in point on the record/edit machine by just cueing the tape to the exact spot where you want the edit to begin. There will be some sort of "edit in" button for you to set the point into the machine's memory. Do the same for the "edit-out" point.
- o Do the same thing on the playback machine to locate and cue the point where you want the new edit material to begin.
- o Most program edit systems will automatically preroll both machines. You can accomplish this now by setting some "automatic edit" function.

- o At this point, you may preview the proposed edit without actually accomplishing it. The record/edit machine will not actually make the edit on the tape, but will display it on the monitor without altering the edit in and edit out points. If there is something about the edit you wish to change, you can do it at this time. If not, you can simply execute the edit by either pressing the "auto edit" or "recue" and then "auto edit."
- o The "auto edit" may be called different things in different systems. It will most likely be "auto edit" or "edit record" or something that means the same. Whatever it's called in your system, it will start both machines simultaneously, lock them into synchronization, and make the edit precisely at the preprogrammed edit points.
- o Subsequent edits will be accomplished by repeating the process. Of course, you will want to review the entire tape after you have edited it to see if all the edits are clean.

PRACTICE EXERCISE

LESSON 4

SUBCOURSE NO. DI 0351

EDIT VIDEOTAPE

INSTRUCTIONS:

Review the material in this lesson. Answer the questions below by circling "T" or "F" next to each question. Compare your answers with the answer key on the next page.

- T F 1. The process of cutting and splicing videotape is the perfected new method of videotape editing.
- T F 2. Videotape takes a few seconds to get up to speed and stabilize.
- T F 3. Assemble edits edit everything on the tape.
- T F 4. Insert edits edit everything on the tape.
- T F 5. Many programmed electronic editing systems allow you to preview an edit before actually making it.
- T F 6. Insert edits always leave a dirty edit following the edit out point.
- T F 7. Preroll for manually controlled electronic editing is usually five seconds.
- T F 8. Electronic editing is merely a dubbing process.

ANSWER KEY
PRACTICE EXERCISE
LESSON 4
EDIT VIDEOTAPE
SUBCOURSE NO. DI 0351

1. FALSE (Page 76)
2. TRUE (Page 77)
3. TRUE (Page 78)
4. FALSE (Page 78)
5. TRUE (Page 81)
6. FALSE (Page 79)
7. FALSE (Page 78)
8. TRUE (Page 76)

LESSON FIVE

PERFORM AS ENG TEAM CHIEF

46R Soldier's Manual Task: 214-177-2301

OVERVIEW

LESSON DESCRIPTION:

This lesson will provide you an overview of performing as an ENG team chief.

TERMINAL LEARNING OBJECTIVE:

ACTION: Describe procedures necessary to properly perform as an ENG team chief.

CONDITION: You are given the material presented in this lesson.

STANDARDS: Perform all the duties described in this lesson.

REFERENCES: The material contained in this lesson was derived from the following publications:

STP 46-46R14-SM-TG Soldier's Manual &
Trainer's Guide, Broadcast Journalist,
MOS 46R Skill Levels 1/2/3/4, August 1988.
Defense Information School Radio and
Television Handbook, May 1982.

PERFORM AS ENG TEAM CHIEF

INTRODUCTION

The responsibilities of an ENG team chief can be stated very simply.... everything that has anything at all to do with the gathering of news electronically, is in one way or another, the responsibility of the ENG team chief. In some cases, there will be only one person to accomplish everything. In other cases, the ENG team chief will have little to do other than supervise and be responsible. In all cases, the ENG team chief is responsible for the final product: its technical quality, its thoroughness, its aesthetic quality and its ethics. A good ENG team chief must be prepared to supervise or accomplish all ENG tasks in all situations.

SELECTING EQUIPMENT AND PERSONNEL

For the most part, there is little difference in civilian and military electronic news gathering. One difference that will become most obvious to you in the everyday performance of ENG team chief functions will be in equipment selection. In a civilian station, the news department has a lot to say about the equipment purchased by the station. In the military, however, your equipment has been selected by the proponent, within guidelines-established by the military procurement system. The equipment selection was made with an eye toward your mission and you should already have everything you'll need to do the job. You might say that the equipment has already been selected for you, leaving you only the choice of how much of the equipment you'll need to take to the site.

A big part of your responsibility as team chief will be to be sure that all the equipment is on hand, serviceable, packed and ready to go. Batteries need to be charged and you'll need a sufficient number of tapes with red pins. You must have the proper lighting equipment with electrical cords, stands, barn doors, spare bulbs, insulated gloves, screens and reflectors. The camera, recorder, tripod and connector cables will have to be ready. Don't forget microphones and cables. In short, you'll need to know what equipment will be needed for the project and take the needed steps to get it on location.

The ENG team chief must also select the team members for each production from those persons available. Other duties, leaves, passes, temporary duty assignments, illnesses and personal abilities or limitations are all factors you must consider.

Your most valuable asset will be checklists. Experience will make things routine, but you should never rely strictly on your memory. There is a lot to think about in the business of ENG and your mind will always be occupied with many other things. A checklist for the equipment required for each type of production you'll be called upon to do, will be not only a timesaver, but the insurance that will prevent a disaster sooner or later.

CONDUCTING SITE SURVEYS

A very small portion of what you do will be spot news stories. A large part will be coverage of planned events. That will allow you to conduct site surveys. Before you can produce successfully at a remote location, you must conduct a site survey.

There are many things you'll need to know about the ENG location, and the time to find them out is in the planning stage. Where should the camera be positioned? How much light is available? Where can we park? How far must we carry the equipment from the vehicle? Will there be enough electrical power for the lights and other equipment? Will there be outside noise to worry about? What about problems with mixing of color temperature of light? (More about this in "Determining Lighting Requirements"). You'll need the answers to these and more questions.

Site surveys have three main purposes. They are: to determine the location for the production, to determine where all the production equipment and personnel will be positioned, and to determine if all the production's needs and requirements can be handled at the site. Very often, the first question, "Where is a suitable location?" is answered by the event itself. A change of command ceremony, for example, will take place on the parade field or in the theater in case of inclement weather, and you won't have much to say about the location. On the other hand, something like a training exercise will give you some options as to what particular segment you'll cover and therefore, some option as to location.

If you're covering something outdoors, make your site survey at the same time of day you intend to cover the event. That way, the daylight will probably be the same, if the weather is anywhere near the same. At least, you'll be able to position the camera or cameras with the back to the sun. It would do little good to conduct a site survey at 8 o'clock in the morning with the sun in the east if the event is going to take place at 4 in the afternoon when the sun will be in the west. When you know exactly where the sun will be, you'll see the length and position of shadows, contrast between light and dark areas and anything else time related.

Although it may seem that indoor events would not make any difference as to what time of day you need to conduct the survey, it's not always the case. Traffic patterns might be different and affect your ability to get somewhere in a certain length of time, or the availability of parking might change, or even a change in the pedestrian traffic at the location could give you problems. There could even be a large difference in the drain on electrical power from one time of day to another.

Finally, take nothing for granted. Do the electrical outlets you intend to use actually work? Does that window you want to run a cable through really open? Is that elevator or escalator going to be working when you will need it, or will it be turned off? It's certainly better to oversurvey the site than to miss one important point that will lead to a disaster later.

While every remote production site will differ at least slightly, there are still some common points that must be considered by the ENG team chief.

Local Contacts and Clearances

You should always have a local contact who can provide access, information, and help with various details. It might be someone connected with the site, or someone connected with the event. If it's someone connected with the event, you may have to have another contact who is connected with the site or facility. Get their names and phone numbers, and those of any assistants who might also be helpful. When possible, you may also want to establish contact with electricians, plumbers and maintenance people.

Access. Establish where you'll need access to the site, when you'll arrive, how you'll get your equipment from your vehicle to the working area, and what help, if any, you'll need. If you're going to be arriving at odd hours, make sure someone will be on hand to grant you access.

Permits. If your event is in the civilian world, remember they require permits for everything. You may need a police permit to park vehicles on the street. You may need special permission to block traffic. You may need some help with crowd control so you have an unobstructed view of the event. Of course, you will want to prevent any danger to your equipment from a crowd. Whatever you need in the way of permits should be obtained well in advance of the scheduled event.

Permission. There are many places where you'll need special permission to gain access. There may be security precautions. Maybe you'll be covering something that takes place in a camera restricted area. You'll need, not only an escort, but something in writing to show that you have the permission to enter and videotape in the area. In the military, a memorandum for record will usually suffice. If you're going to be escorted by the public affairs officer or his representative, it might not be a bad idea to be sure they have the permission they need to get you in. Of course, that is something that must be handled tactfully. No one likes to have you hint that he might not know what he's doing. Usually a question like, "Does this building require any special permission to bring a camera in?" will do the trick.

Parking. You'll need to arrange for parking for your vehicle as well as any privately owned cars of your crew. Sometimes you won't have much say in the matter, but try whenever possible to have your production vehicle as close to the shoot site as you can. You never know how many trips you'll have to make back and forth, or how urgent one of them might be. Don't forget that you need to have unrestricted movement back and forth to your vehicle as well.

Cameras

Positioning of the camera(s) is an extremely important decision that you must make during the site survey. Will you be required to move a camera at some point during the event? Be aware of reflecting surfaces and the possibility of the camera capturing its own reflection. If there is more than one camera, keep them out of each other's shots, unless that's the effect you're looking for. Don't forget screen direction and the 180 rule.

Try to anticipate things that could happen during the event to affect your camera shots, such as an audience rising to its feet and blocking the camera's view. Think about people moving around and make sure tripod legs are not going to get kicked or tripped over.

Audio

Even in the studio, under very controlled conditions, the production of high-quality audio is difficult. When you throw in all the acoustical problems and unplanned noise you experience at a remote location, the problems magnify.

Some of the basic things you'll need to know at site survey time are:

- o What sound sources (including people) must have microphone?
- o Will the microphones appear in camera shots? Is that acceptable?
- o What potential audio problems are there? (external noises like air conditioners running, etc.)
- o Are there any special arrangements to be made such as pool audio or tying into a public address system?

With the answers to these questions, you'll be able to decide what microphones you'll use to get the high-quality audio you want and need. All your decisions will be made while considering the equipment available. You'll consider the pickup patterns available. Sometimes you may even have to compromise somewhat because of limited availability of equipment. Experience will help you avoid, or at least minimize such compromises, but site surveying will help you keep the quality of the audio within acceptable standards.

Talent. Announcers, play-by-play sportscasters and commentators can usually get by with lavalier or hand-held microphones. If you have a headset microphone, it will allow hands-free operation and maintain a constant announcer-to-microphone distance. You must consider any movement flexibility required. Maybe, you'll want to use a wireless microphone. Will there be any external interference? Of course, if you use normal cables, they should be run around any high-traffic areas and away from power lines.

Natural sound. The natural sounds are necessary to make any event real and believable. You'll rely heavily on the camera microphone, but sometimes you may even have to place a microphone for optimum reception of natural sounds. Consider the pick-up patterns you'll need. Crowds, for example, will best be captured with an omnidirectional pattern. Your camera microphone is a shotgun or supercardioid pick-up pattern.

Power

Calculate the production's total power requirements, and be sure the power you need is available. Besides noting the voltage and amperage, make sure the wiring configuration is compatible with your equipment.

You have batteries for your equipment and usually that's the simplest way to go, but remember, batteries limit the amount of operating time. Also, after you have used up your batteries, you can't use them again until after recharging.

What if some fast breaking news story requires you on the way back to the station? If you just used all your batteries, you can do nothing about it. Always use available AC power at the site when you can. Save your batteries for the emergency that will always pop up when you least expect it.

Check all outlets in advance. Never assume that they work. Know where the breaker box is located. Try to spread your power requirements out as much as possible to avoid blowing a fuse or throwing a breaker in the first place.

Cables. Plan the power cable runs to cameras, recorders, lighting instruments and any other production equipment. Don't use extension cords intended for home use. They are too thin a gauge wire for your requirements. Make sure your cables are the heavy-duty, insulated electrical cable for professional use that provide the durability, safety and power load for a remote situation. Plan not only on the number you'll need, but the length as well. When planning the power cable runs, remember that they should not be run where they can interfere with audio cable signals. Don't forget to keep them out of the camera shots.

Communications

There are two types of communications you must consider when surveying the site. Are there telephones available to call back to the station if necessary? What kind of communicating are you going to have to do during the event between crew members? Will you need PLs? Can you do what communicating you need by sign language? Never leave yourself unable to communicate or restricted in your ability to communicate with your crew or your on-site contacts, if you can possibly avoid it.

Security

Will you require any special security arrangements? How about for your equipment? Be sure your equipment is secured against both theft and damage. People have no concept of the cost of television equipment. They can't imagine a camera costing more than an automobile and their treatment of them reflects it.

The remote location site may have security that will require you to have credentials and passes. During the site survey is a perfect time to arrange for them. You'll have to specify how many people you'll need passes for, to include staff, technical crew and talent.

Food and Lodging

Your local contact will be a great help in providing food and lodging for your crew, but it's up to you to make sure that it's taken care of. Your job, no matter what rank, is that of a first sergeant, taking care of the troops. It's a good idea to keep everyone together for meals that are during the production, such as breaking for lunch. Then you won't have to wonder if everyone is going to make it back for the afternoon session. When covering something like a field exercise, you'll probably eat with the troops anyway and your crew will then be in close contact with you for the entire break.

Even if you don't have to provide a full meal, some sort of coffee and doughnuts (in cold weather) or cold drink and a snack (in hot weather) will be greatly appreciated. The lift in morale will be well worth the effort on your part. Of course, if you need to be on location overnight, it's up to you to arrange billeting for the crew.

Transportation

You are responsible for transportation, not only to the site, but to and from the lodging for the duration of the production. That can be something very simple, or a major logistical operation.

Construction

Will there be any special construction required? Scaffolds to serve as camera platforms, or lighting or announcer platforms? If so, find out during the site survey and have everything done prior to the event.

Graphics

If the production is going to require any graphics or character generation, you should plan it at this time. Knowing ahead of time will allow you to make available to yourself the graphical equipment you'll need. After the on-site production, you may not have time to get the graphics together and shot in time to meet your deadline. At the time of the site survey, you will probably be able to anticipate all of your graphic needs.

PRODUCTION MEETING

Once the site survey has been conducted, the final preparation point is to have a production meeting. Even if there are only two people who are going to accomplish all the tasks, it is necessary for those two to meet

and discuss all facets of the production. Be sure that everyone knows what his job is and that all jobs are covered by someone.

You have tried to think of everything that needs to be addressed. You've asked yourself questions about everything that is likely to happen. Now ask questions concerning some things that are even unlikely. Make some contingency plans. Just like defensive driving, expect the unexpected. If you have already asked yourself what you would do if a certain thing were to occur, and answered the question, you will be well prepared to handle the situation if it does occur. Of course, if on the other hand, you haven't even thought about that same possibility, the chances are pretty good that it will cause you a lot of problems.

DETERMINING LIGHTING REQUIREMENTS

Outdoors

During the daytime, there will usually be enough light outdoors to satisfy the technical requirements of the camera. That doesn't mean that you will have nothing to do about the lighting. There are a lot of different circumstances that can require additional lighting outdoors. It's your concern, as ENG team chief, to ensure, not only sufficient lighting, but proper lighting for the production. Just because you're going to be shooting outdoors, don't neglect to carry with you and plan the use of lighting instruments, sun guns, reflectors, stands, cables, screens, scrims, barn doors, spare bulbs, fuses and any other piece of equipment necessary. Remember color temperature when augmenting lighting outdoors.

Indoors

All of the equipment you MIGHT need outdoors to help ensure proper lighting, you WILL need indoors. The event you're covering will most likely be lighted for human eyes and not for television. As you know, the camera requires a certain amount of light to operate, and it's your job to supply that light. This can be a serious problem in a lot of situations. The person in charge of the event may have reservations about television lights and the chance that they could interfere with the event itself. You have to know how the lighting could cause heat, glare and distractions to persons involved in the event, and reassure those responsible.

Consider having a properly lighted area for interviews off to the side somewhere. Think about lighting a portion of the event if you can't light everything that's taking place. In lighting an event indoors, also

consider your ability or inability to control all the light on the scene. If there is light of another color temperature that you can't eliminate, you must white balance for the mixture that you'll be shooting. If you eliminate some other light, be sure to repeat that step when the event actually occurs.

Much of the time, you will have to have a lot of tricks up your sleeve in cases where the event is taking place in a large area indoors. More and more, portable television cameras are requiring less light to operate. Know what your camera needs and be sure you operate within your system's limits, and be sure that both the technical and the aesthetic requirements of lighting are satisfied.

PRETESTING EQUIPMENT

Just because everything was working at the last event, doesn't mean that it's still going to perform up to standards for you. Of course, if you weren't the last one to have the equipment out, you will want to know that everything is still working before you depend on it. It has been transported since its last use and that in itself could be enough to cause something to malfunction.

There is no substitute for proper care of equipment and in spite of the best care, things still go wrong. The time to find out if something isn't working properly is before you need it. As you are undoubtedly becoming aware, every piece of your equipment plays a vital role in the accomplishment of your mission. One piece not working properly can ruin your whole production. Be aware of Murphy's Law (anything that can go wrong will go wrong), and take away as many possibilities of failure as you can.

COORDINATING TRANSPORTATION

During your site survey, you found out exactly what transportation would be required. Knowing about it doesn't get it done. You have to follow up and be sure that you can get everyone and everything to the site. Don't depend on someone at a motor pool somewhere understanding the importance of your mission. They have worries of their own and somehow your getting the event covered doesn't rank too highly on their list of priorities. Have emergency back-up plans to cover the possibility of someone not keeping their promise.

ASSIGNING AND BRIEFING PERSONNEL

Most of what you do as ENG team chief will touch on the responsibility of assigning and briefing personnel. Unless you are going to be doing absolutely everything yourself, and chances are, you're not, you will need to be certain that each member of the crew understands his responsibilities. To correctly assign personnel, you must know them. Know their strengths and weaknesses. Then it's a matter of using your resources properly. Assign personnel to the jobs they can best fill and keep them away from those tasks they're not qualified to perform. Above all, you must be sure they understand what is expected of them and what they need to do in order to accomplish it.

SUPERVISING ON-SITE SETUP

Unlike studio productions, where certain necessary elements are in place and set up all the time, every remote situation must be set up from scratch. As soon as you arrive on the scene, you'll begin to work on getting things in the order of the plan you made during the site survey. Cameras will be unpacked and placed at planned locations and set up on tripods. You'll already have built any necessary platforms, stands or barriers. Once you've accomplished this, the operators will power up the cameras and recorders and go through their checklists.

Those responsible for audio will unpack equipment, run cables and place microphones (hand, lavalier, boom, shotgun, etc.) at the proper locations. Depending on how many microphones and the likelihood of confusion, you may want them labeled with the name of the person who will use them. At each audio position, you'll want to run an audio check, then make certain the instrument is secured in a manner to make sure it won't be mishandled or damaged before the production.

All necessary lighting instruments should be set up, tested, positioned and focused. Since this takes a little time and everything else depends on lights, you may want the lighting setup to begin a little earlier than other things so that everyone won't have to wait for lights. For elaborate situations, you may even want the people responsible for lighting to arrive before everyone else.

Once everything is in position and set up, you'll want to check it to be sure that it all works properly. The transporting is over for now and what still works, will probably continue to work. Within reason, try to keep spare parts such as extra light bulbs and so forth, close to where it might be used. If a bulb were to burn out, you wouldn't want to hold everything up while someone had to run out to the truck to get a spare, or

miss covering that much of the event. Of course, you can't keep two complete systems on hand in immediate reserve either.

A final briefing before the action begins is always a good idea. Everyone should have one last chance to ask questions and clarify his role. That way, the team will know what each member needs to do, and be sure all bases are covered.

SUPERVISING REHEARSALS AND SHOOTS

If you have the opportunity, rehearse. The more you do anything, the better you'll be able to do it, and rehearsing the production will enable you to work out any difficulties as well as point out to you where they may pop up unexpectedly. An uncontrolled event such as fast-breaking spot news will certainly not allow for rehearsal, but if your crew has worked together in the past and rehearsed at every opportunity, they will be able to function as a tightly knit team in all situations. Even if an event seems routine to you, the entire team can benefit from rehearsal.

SUPERVISING ASSEMBLY OF THE FINAL PRODUCT

As stated in chapter three, after all the functions you've performed in announcing, writing, scripting and interviewing, there is still more to do. As ENG team chief, the same holds true. After all the functions that have been performed in surveying, coordinating, setting up, shooting and everything else, there is still more.

There are still to be made. What TREATMENT WILL YOU GIVE THE COVERAGE IN FINAL EDITING? Will you use music? Will you try to make the coverage hard hitting or just matter-of-fact? These are decisions that you, the ENG team chief, must make. You can seek and rely on advice from your crew, but in the final analysis, you are responsible. When credit is given for a job well done, it should be shared among everyone who contributed, for they all had a hand in keeping the standards up and making the product excellent. When the standards are not up and the product is not excellent, there is only one person to blame. The person in charge.

PRACTICE EXERCISE

LESSON 5

SUBCOURSE NO. DI0351

PERFORM AS ENG TEAM CHIEF

INSTRUCTIONS:

Review the material in this lesson. Answer the questions below by circling "T" or "F" next to each question. Compare your answers with the answer key on the next page.

- | | | |
|---|---|--|
| T | F | 1. Since the military trains personnel in all facets of ENG, it doesn't matter which person is assigned to which position in the crew. |
| T | F | 2. The camera microphone is the only acceptable way to capture natural or background sound. |
| T | F | 3. A production meeting after a site survey is a good time to be certain that everyone understands what is expected of him. |
| T | F | 4. Site surveys are to determine where all the production equipment and personnel will be positioned. |
| T | F | 5. After all the functions have been performed in surveying, coordinating, setting up, and shooting, the ENG team chief has fulfilled all his duties. |
| T | F | 6. If your equipment was working properly at the last production, and still functioning at the station, there is no reason to suspect it won't work well at the new location. |
| T | F | 7. It is the responsibility of the ENG team chief to decide what equipment should be purchased for remote productions. |
| T | F | 8. You should rehearse coverage of routine events. |
| T | F | 9. The ENG team chief is responsible for getting the entire crew to and from the site of an event. |
| T | F | 10. Camera positioning should not be determined until just before an event begins since plans often change and you want to avoid unnecessary extra movement of delicate equipment. |

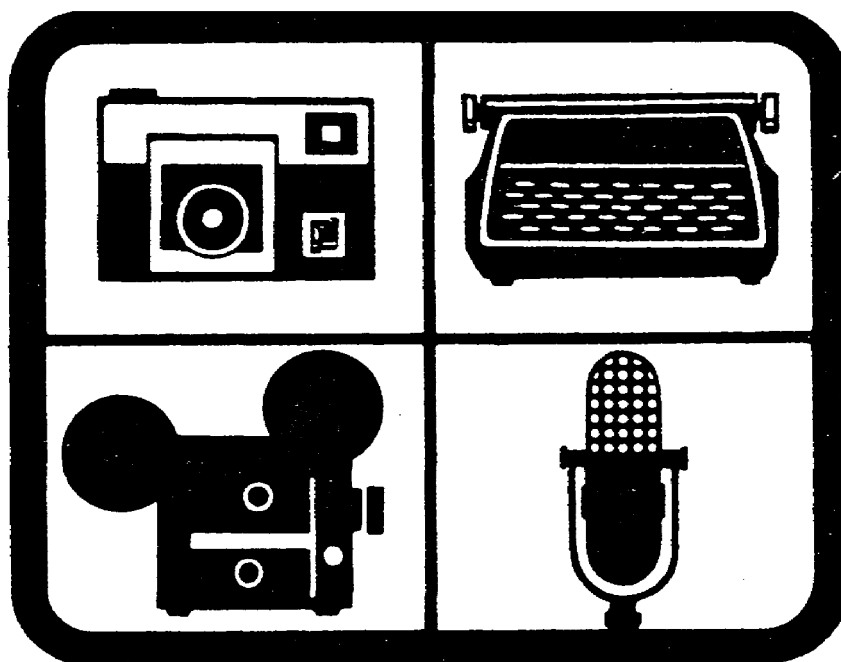
ANSWER KEY
PRACTICE EXERCISE
LESSON 5
SUBCOURSE NO. DI0351
PERFORM AS ENG TEAM CHIEF

1. FALSE (Page 95)
2. FALSE (Page 90)
3. TRUE (Page 93)
4. TRUE (Page 87)
5. FALSE (Page 96)
6. FALSE (Page 94)
7. FALSE (Page 86)
8. TRUE (Page 96)
9. TRUE (Page 92)
10. FALSE (Page 89)

BASIC TELEVISION LIGHTING AUDIO AND SCENERY

(BROADCASTING)

PUBLIC AFFAIRS



THE ARMY INSTITUTE FOR PROFESSIONAL DEVELOPMENT
ARMY CORRESPONDENCE COURSE PROGRAM

A
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THRU
GROWTH

MOS 71R SKILL LEVELS 1 AND 2

BASIC TELEVISION LIGHTING, AUDIO AND SCENERY

Subcourse DI0370

October, 1987

Army Public Affairs Center
Fort George G. Meade, Maryland

Ten Credit Hours

GENERAL

The Basic Television Lighting, Audio, and Scenery part of the Broadcast Journalist 71R Skill Level 1 and 2 Subcourse, is designed to introduce Army broadcasters to an entry level understanding of three point lighting techniques, microphones used in various productions and related audio equipment and television scenery/backgrounds. This subcourse is presented in three lessons.

ADMINISTRATIVE INSTRUCTIONS

SUBCOURSE CONTENT

This subcourse contains three lessons, each related to the fundamental tasks of television lighting, audio and scenery for the Army Broadcaster. These lessons will provide a basic knowledge and understanding of the different phases of basic television lighting, audio and scenery.

Supplementary Requirements:

This lesson may be taken without any prerequisites.

Material Needed: You will need paper and T No. 2 pencil to complete this subcourse. No other materials are needed.

Reference. No supplementary references are needed for this subcourse.

GRADING AND
CERTIFICATION INSTRUCTIONS

Ten credit hours will be awarded for successful completion of this subcourse..

Task: In these lessons, you will first become familiar with basic lighting techniques and the requirements used for setup of simple television sets. Secondly, you will learn the two-categories and five types of microphones, their characteristics and usage. The functions of the two types of audio boards and related equipment. And finally, the role scenery, properties and set dressings play in the television environment.

Conditions: Given the material presented in this subcourse.

Standards: Demonstrate a basic knowledge and understanding of the fundamental techniques of lighting, lighting equipment, and the three-point-lighting method. Know the types of microphones, their characteristics and how they are used. And, the important role television scenery plays in the visual portion of a TV program.

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BASIC TELEVISION LIGHTING

INTRODUCTION TO LIGHTING

Lighting for television is not only an art, it's also a science. The art of television lighting is creating certain moods and effects with lighting techniques. The science is the application of specific technical rules.

The broadcast journalist needs to be aware of these differences because they will affect the quality of the work in both studio and field production.

Television cameras will not reproduce a quality picture without proper lighting. Your eyes need much less light to see than does a television camera. Outside, the sun, moon and even stars provide illumination. Inside, table lamps, overhead lights, recessed lights and other lighting fixtures provide illumination. However, when you start to control illumination for the purpose of creating special moods or for technical reasons, you are involved in lighting for television.

TECHNICAL OBJECTIVES

The first thing you need to consider when learning the basic concepts of television lighting are the technical requirements of the television system itself. There are two basic objectives you must be concerned with: Quantity and Quality of light.

Quantity

In order for the television camera to see the subject, there must be enough illumination/light. A TV camera requires considerably more light than the human eye. If the overall light level is too low, you get what is called a "noisy or snowy picture, or none at all. When the picture is noisy, it looks grainy -- Similar to a photograph that has been enlarged a great deal.

Another aspect of the quantity of light is the intensity of the shadows in the scene. A television system can accommodate a contrast range, of NOT more than twenty times darker than the brightest element of the scene.

LESSON 1/Learning Event 1

If shadows are darker than 20: 1 there will be reproduction problems for the camera. For example put yourself in a dark room and have a flashlight available. You will be able to find any object in the room. But a television camera in the same room, under the same conditions, would not be able to identify a thing. That's because your eyes have a contrast ratio of 160 to 1, but a camera only has a ratio of 20 to 1.

With too much light, subjects have an appearance of glowing or "blooming". This, when seen on television, shows a washed out appearance. Obviously both situations are unacceptable.

Light Meter. The most common method of finding out if a scene or subject has enough light to reproduce a good quality television image, is by measuring the amount of light falling on or reflected by the scene or subject. This is done with the aid of a light meter. The meter measures light by allowing light to strike a light sensitive strip or cell which produces a small electric current. The amount of current produced is directly proportional to the amount of light entering the meter. A lot of light produces more current and a little light less current. The current in turn moves a needle over a printed scale. (Fig. 1-1)

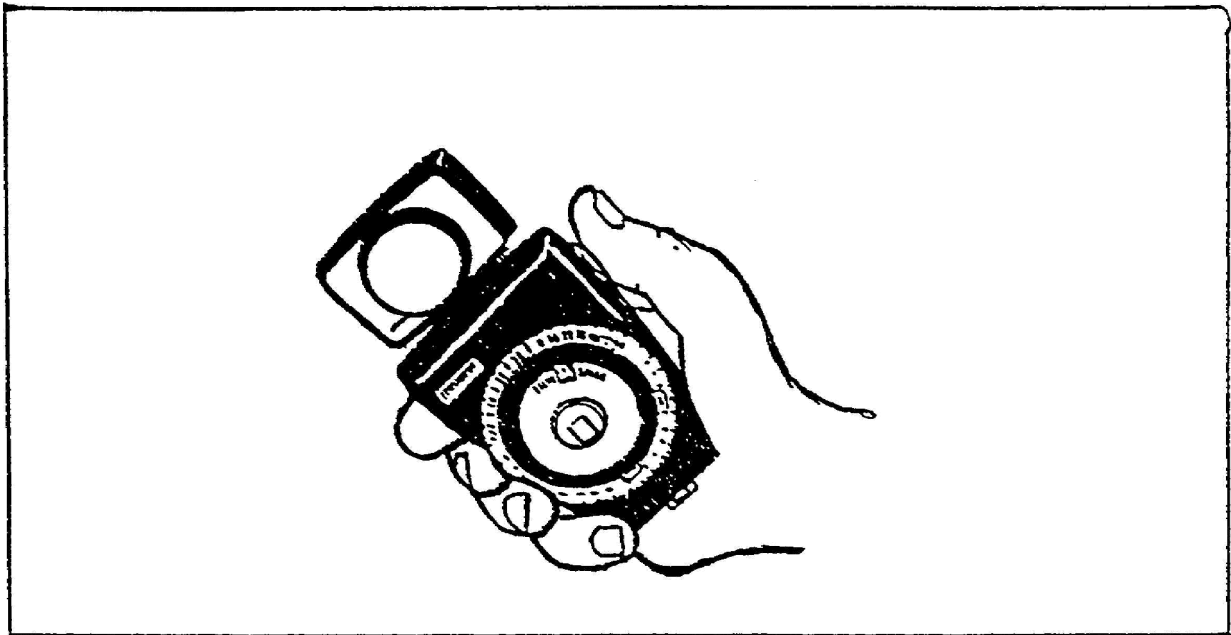


Figure 1-1
Light Meter

LESSON 1/Learning Event 1

The scale is calibrated to indicate how much light is entering the meter. The scale is normally calibrated in footcandles but may also be marked in lumens (which are equal to footcandles). The footcandle scale is normally used in television.

Quality

Let's take a look at the second technical consideration. The quality of light refers to the color temperature of the light source. Color temperature is properly termed "Kelvin Temperature." This refers to the amount of red, yellow and blue-white quality in the light, and is expressed in "degrees Kelvin". Do not confuse color temperature with footcandles. Footcandles measure the intensity of the light, not its color temperature.

Color cameras may be balanced to any color temperature. But, the television industry has set 3,200 degrees Kelvin as the standard for studio lighting. The outside color temperature from the sun on a bright day is rated at 5,600 degrees Kelvin. This standard may not always be consistent, because clouds filter the sun's light and create a different color temperature. Different color temperatures will cause unpredictable color distortions. Such distortions might produce purple faces. Mixing lights of different color temperatures will produce other technical problems. Most quartz halogen bulbs used in television produce 3,200 degrees of color temperature. DO NOT try to use stage lights from a theater. Stage lights use a different color temperature, and will throw the color TV cameras off balance. Using lights other than those designed for 3,200 degrees Kelvin will cause engineers many problems.

There are many different makes and models of light meters with multiple options and functions. When you start to work with a light meter, take the time to read the operating instructions and become familiar with the meter. A little practice in reading the meter and you will have the technique in no time.

LESSON 1/Learning Event 1

Measuring Light. There are two methods of measuring the light in your studio.

a. Incident

b. Reflected

1. Incident light reading. Measuring the actual light falling on the subject is called "incident" light measurement. To take an incident light reading, a light meter is held near the subject, but the top of the light meter pivots, and should be facing the light source. The meter measures the amount of light falling on the subject. The incident light meter reading is the most commonly used method in television (Fig. 1-2).

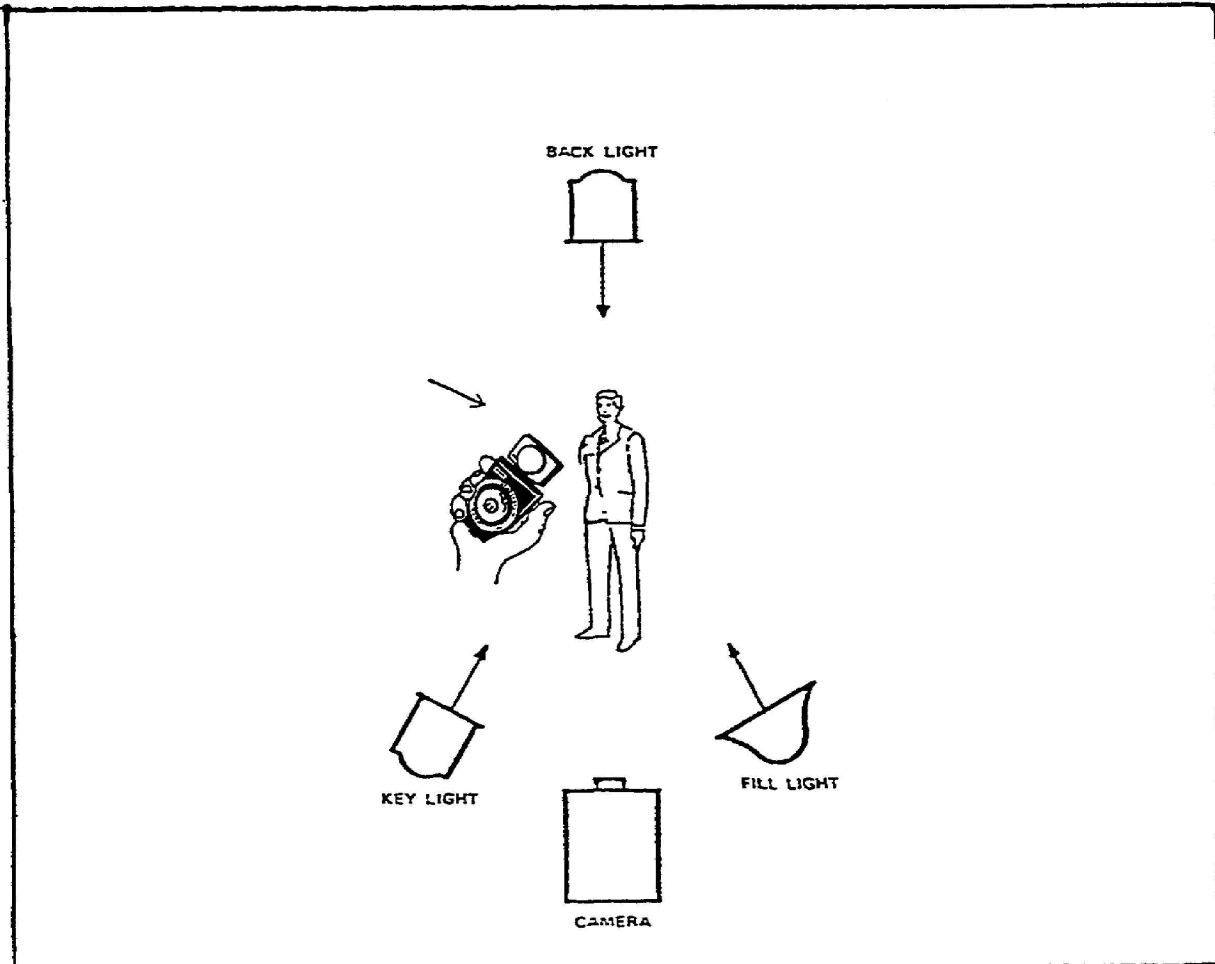


Figure 1-2
Incident light measurement

2. Reflected light reading. The second method of measuring light is called a "reflected" light reading. A reflected light meter reading measures the amount of light reflected from the subject.

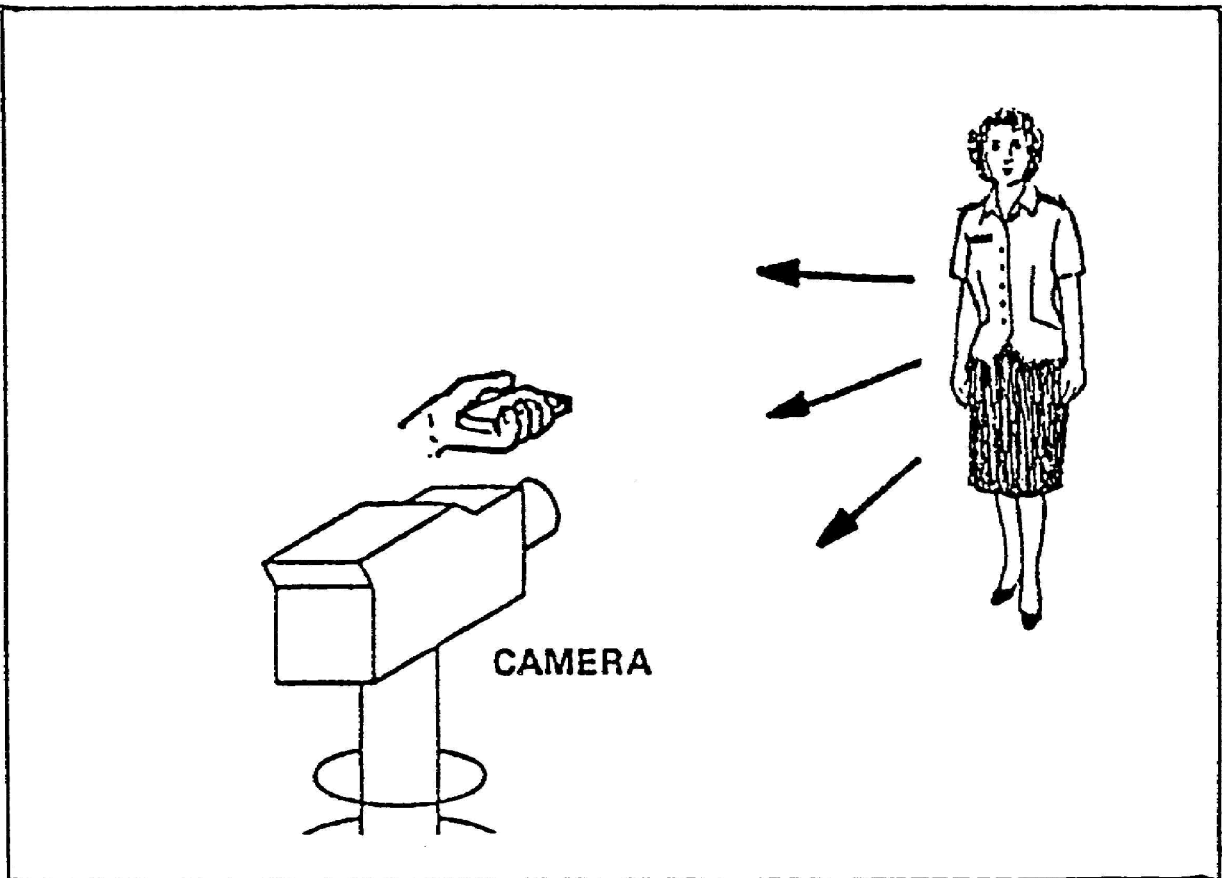


Figure 1-3
Reflected light measurement

The reflected meter reading is used in television primarily when the overall scene is composed of dark colors. (Fig. 1-3)

AESTHETICS

The needs of a lighting technician do not end once the technical requirements of lighting the set have been met. Certain aesthetic or non-technical objectives are mood, form or dimension, and directing attention.

Mood

Using shadows and different light levels discreetly will set the mood of a program or scene, and even the time of day, when necessary. Every scene has some sort of mood to convey. Usually, the set and lighting should work hand in hand to accomplish this effect.

Dimension or Form

Television is currently a two-dimensional medium. In the future, there may be 3-dimensional hologram TV. Right now the TV screen has only height and width, but there are ways to create the illusion of the third dimension "depth," with effective lighting. While we need to be careful of creating harsh shadows, we need some shadows to create form. By using backlight on a subject we separate objects in the foreground from subjects in the background. This technique gives the illusion of depth and dimension.

Directing Attention

Directing the viewer's attention can be done in a number of ways. The most obvious way is to use a "follow spot." A follow spot is a spotlight that keys in on a particular subject and follows that subject, directing the viewer's attention. Normally though, we will want to be a little more subtle. Using key and fill lights properly to direct attention will do the same thing without being so obvious.

Important Note: Each situation for lighting a set or scene is different. Separate illumination should be used for the background, foreground and subject at all times. Attention to each step of the lighting setup is needed to accomplish specific requirements. Take time when attempting these tasks. As a broadcast journalist, be aware of the objectives and how they apply to each project. The difference between excellent lighting and adequate lighting is the dedication, not the time spent.

LIGHTING INSTRUMENTS

There are two primary types of lights used in the three-point lighting method spotlight and the floodlight.

Spotlight

A lens spotlight provides a variable focus or beam spread of light (Fig 1-4). The light field is smooth, even, and

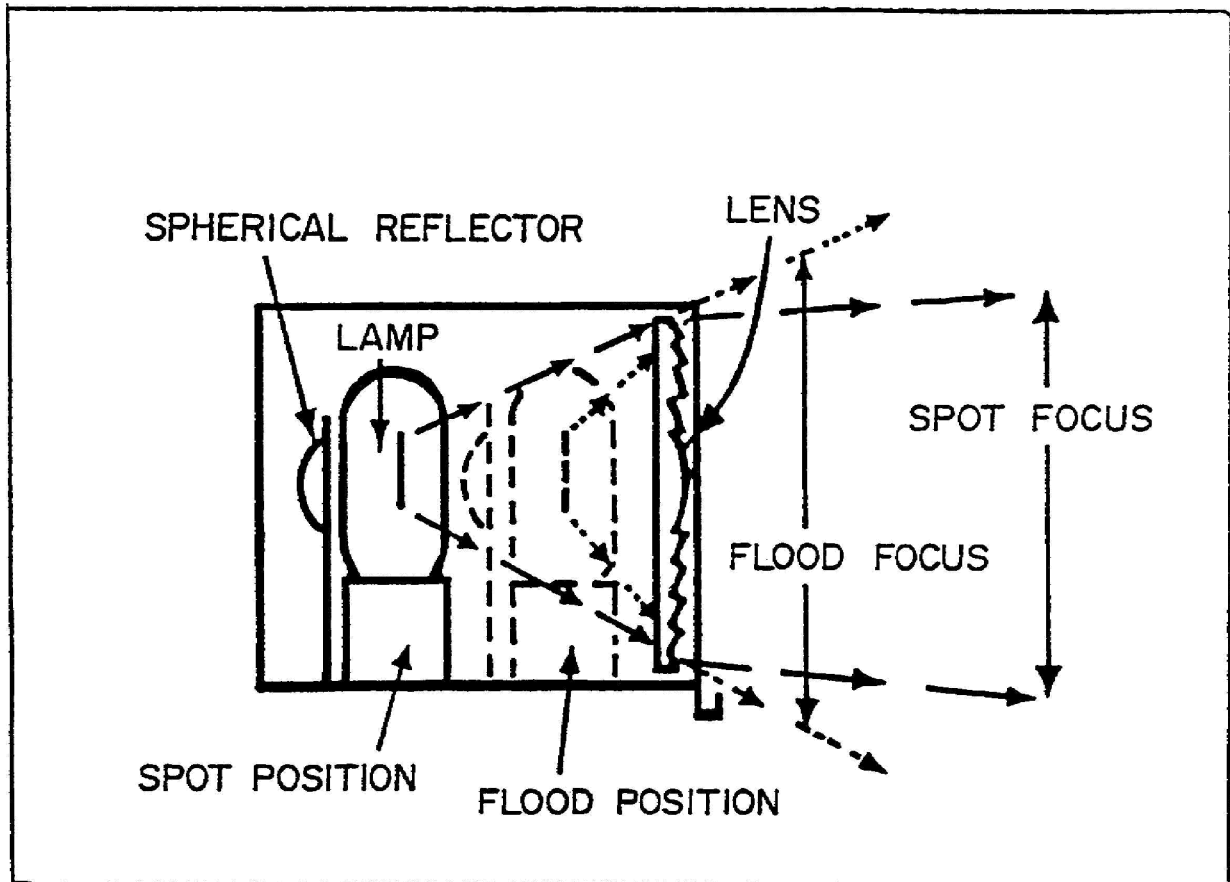


Figure 1-4
Spotlight

the outer edge of the spotlight beam is less intense than the center. They are very directional, have a highly polished reflector and a relatively thin, lightweight clear lens. They may be used in many situations such as key light, backlight and other spotlight applications.

Floodlights

The floodlight is a wide-angled "scoop" used to provide fill and base light with a very wide, diffused beam (Fig. 1-5). The bulbs are exposed inside a brush-finished reflector with no lens. Fiberglass scrim or metal mesh may be placed across the front in a special holder to dim the light.

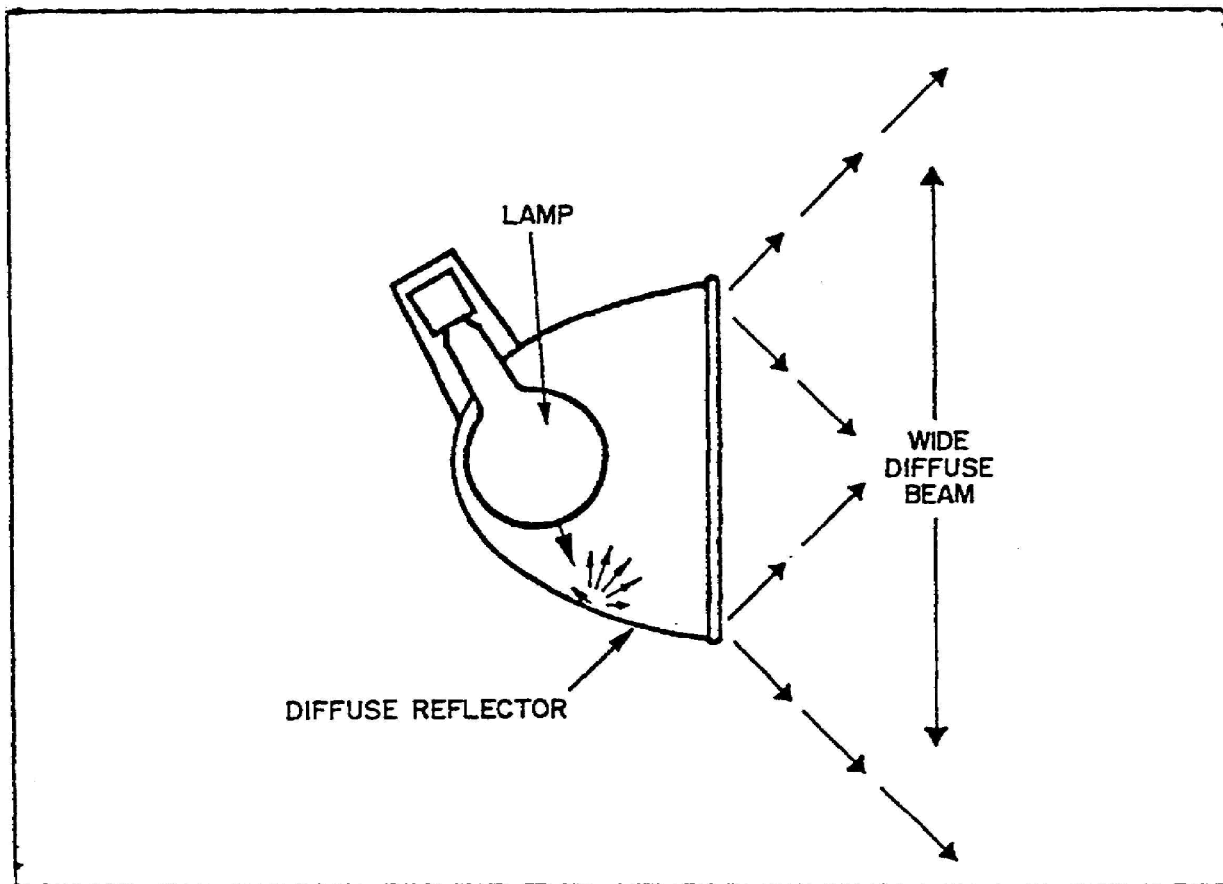


Figure 1-5
Floodlight (Scoop)

THREE-POINT LIGHTING

With all the information presented here, it may seem very difficult to provide light for television. However, following proven photographic lighting techniques makes the task manageable.

The methods for lighting all non-visual mediums such as motion picture photography and television originated from still photography. The basic three-point lighting format (Fig. 1-6) is still the basic photography layout.

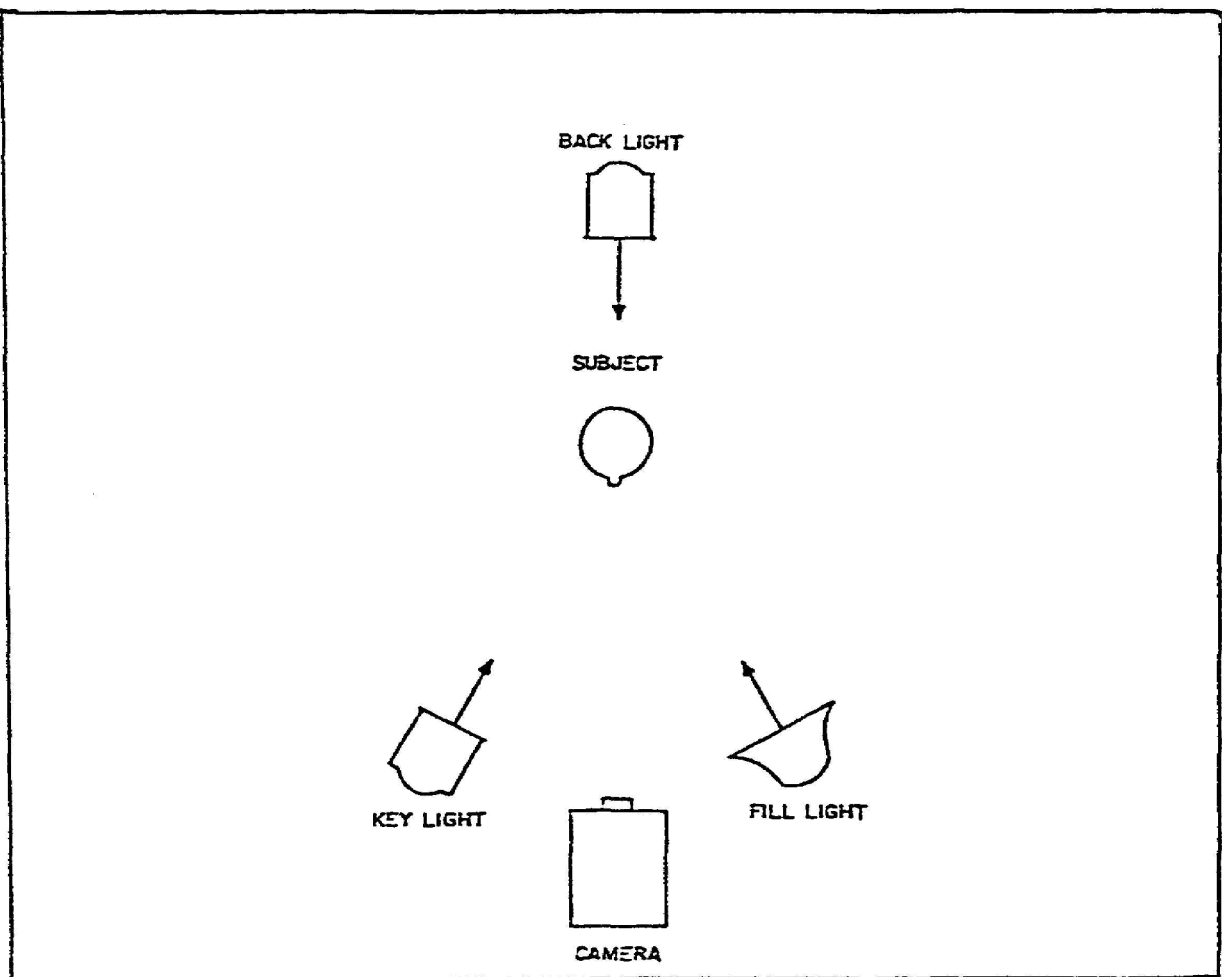


Figure 1-6
Three-point lighting

LESSON 1/Learning Event 4

Key Light. The key light is the primary source of illumination when setting three-point lighting, and should be set up first. Generally, the key light is placed at a 45-degree angle to the left or right of the camera and above. When lighting is natural, the light comes from above. So the key light should also be elevated above the level of the camera in relation to the subject. The main function of the key light is to bring out the basic shape of the main subject. The subject will have a very dark shadow. A key light or spotlight allows a great deal of directional control over the light source.

Backlight. The secondary light source is the backlight. The backlight is used to separate the subject from the background and provides the illusion of a third dimension -- depth. A spotlight or key light that has been shaded to prevent "flare" is always used for the backlight. Flare is the excess light that enters the camera lens when the backlight is not positioned properly. "Barn doors" must be used to prevent direct light from entering the camera lens. Barn doors are used to direct light coming from a lighting instrument. The doors shade the light itself on the top and bottom.

Once the key light and backlight have been set, the definition or dimension of the object should show quite well. But the fall-off area from the light to dark area is very fast. So we need to fill these areas in, and this is accomplished by using a fill light.

Fill Light. The fill light is the third light source and has a more diffused characteristic compared to the key light and backlight. In three-point lighting, a fill light or scoop is used to fill in the dark areas created by the key and backlight. The main function of a fill light is to reduce shadows. Don't eliminate all the shadows, because we need some shadows to create depth. The fill light should be placed opposite the key light at a 45-degree angle above the camera.

The ratio or contrast range of key light to fill light is best when kept to about 2:1. This means that the key light is twice as bright as the fill light. This reduces the contrast range or shadow density but still leaves enough shadow area to create, rather than eliminate, the three-dimensional effect.

CONTROLLING LIGHT

The lighting instruments themselves will hang from the ceiling on a series of pipes or battens called a "grid." These lights plug into a series of electrical outlets which are numbered and are attached to, or mounted in a strategic location, along the lighting grid.

The lights are fastened to the grid by a "C" clamp that is attached to an accordion-like device or telescoping pole, called a "pantograph." The C-clamp is a clamp that looks like a "C" -- with a locking bolt that is threaded through the open ends of the C clamp. Pantographs allow vertical (up and down) movement to vary the height of the light.

The electrical outlets in the grid connect to a central electrical "lighting patch panel" either in the same studio or another room. The patch panel is used to assign each individual light to a specific control or dimmer switch.

These in turn are connected to a dimmer bank of switches that are used to control a group of lights. This allows the technician to group lights together. Therefore, all fill lights are put on one bank, key lights on another, etc.

Lighting instruments have many physical sizes but they all produce two basic types of light:

- o Directional
- o Non-directional or diffused light

Remember that the object is not simply to turn all the lights on and point them toward the subject. The controls that are used to blend and shape lights to meet our technical and aesthetic objectives must now be put into practice. We will look at how we can control the intensity, direction and color of our light.

Intensity

There are several ways to control the brightness or intensity of the light falling on the subject. The most convenient way is by using dimmer circuits. These circuits work by reducing the amount of electrical current to the bulb. While dimmers are very convenient and easy to use, they have one major drawback. As the amount of electricity

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decreases, the filament of the bulb dims and color temperature changes, giving an increasingly reddish light. Most experts agree that we may dim a light to about 85 percent of its rated voltage. This decreases the color temperature about 200 degrees Kelvin without a noticeable change in color.

Beware of using dimmers, especially for light that falls on a subject's face or skin. Flesh tones are the only true way of adjusting color levels on a viewers set. If we alter that color in any way, our reference will be lost. And all the color levels, on all the television sets receiving the video picture, will end up out of adjustment.

Another way to reduce the light intensity is by increasing the distance between the subject and the light. Remember, as the distance increases, the angle, distribution and light intensity changes in direct proportion to the subject. Putting "screens" and "scrims" in front of your light also reduces the intensity of your light. Screens are used mostly on directional lights because they do not alter the hard directional light beam or affect color temperature. A scrim is made of translucent gauze or glass fiber material. The fiber diffuses the light beam and decreases light intensity.

Barn doors. Barn doors are adjustable metal shutters, resembling doors, that allow the operator to control the edge of the beam of light. The barn doors slip into a slot on the front of the lighting instrument (normally fresnels). Barn doors are used to shape the light. The doors come in two-and four-door varieties.

Some spotlights have a built in "lens" control that does the same thing as a set of barn doors but with more accuracy.

The lens control allows a very accurate amount of light to be targeted to a specific area.

Scrims and screens. Scrims and Screens are placed in front of a light source to soften and diffuse the light. One layer of scrim material will normally reduce light output by 50 percent. Thus, the scrim reduces light output and softens and diffuses the light. The scrim does not affect the color temperature of the light. If there is still difficulty in getting the right intensity, the wattage, not the voltage, of the bulb in the fixture is changed.

Direction

The directional control for lighting comes from the grids, clamps, and pantographs or other hanging devices in the studio. Lights may be hung and pointed in any direction.

Effects lighting. Lights coming through windows and doors may be used to highlight a specific area or object dictated by the script or setting. An "eye light" can add sparkle to a performer's eyes and teeth or small objects in dark corners. The effects lights are the last lights added to the set. These are added to correct deficiencies of the key, back and fill lights. Poor lighting should be corrected by adjusting or relocating the key or fill light already in place.

Color gels. Gels are available in a wide selection of colors. They are placed in front of the light in the same way scrims and screens are positioned. Color lighting is used sparingly in television because flesh tones are used as a color reference. Do not splash color on the subject unless there is a special reason, and then, only when the engineers have been informed. Color gels are used primarily to place color on cycloramas and/or sets.

Light for color television. A major consideration in lighting for color television is the color temperature of the lighting. Color cameras are normally balanced electronically for lighting that has a color temperature of 3,200 degrees Kelvin. Most tungsten-halogen or quartz-iodine bulbs are manufactured with this specific color temperature.

We are most interested in lights that affect skin tones of a subject. For this reason we will seldom, if ever, use color lights on a television subject. When the lights are on a dimmer, always try to maintain the color temperature of 3,200 degrees Kelvin (plus or minus 200 degrees).

Final check. The final check for determining adequate light levels may be made by viewing the results on the control room TV monitors. The engineers will indicate which level is the most technically accurate.

***** SAFETY WARNING *****

All television lights become extremely hot when they are used. You may receive serious burns if you are not careful. Be careful when you are adjusting barn doors, scrims, etc., after the lights have been on. After use lights remain extremely hot for about 5 to 10 minutes.

PRACTICAL EXERCISE

LESSON #1

BASIC STUDIO LIGHTING FOR
TELEVISION

SUBCOURSE No. DI0370

INSTRUCTIONS:

Review the material in this lesson. Answer the questions below by circling "T or F" next to each question. Compare your answers with the answer key on the next page. Ensure that you understand the lesson material and answers before proceeding to the next lesson.

- T F 1. There are two basic lighting objectives.
- T F 2. You can control the intensity, direction and the color of light in a studio.
- T F 3. The color temperature that is the industry standard is 3,100 degrees Kelvin.
- T F 4. Backlight, properly used, is the main contributing factor used to create the illusion of a third dimension.
- T F 5. The best lighting ratio for key light to backlight is 1:1.

ANSWER KEY

PRACTICE EXERCISE

LESSON #1

BASIC TELEVISION LIGHTING

SUBCOURSE No. DI0370

- | | | | |
|----|-------|------|---|
| 1. | TRUE | Page | 1 |
| 2. | TRUE | Page | 4 |
| 3. | FALSE | Page | 5 |
| 4. | TRUE | Page | 9 |
| 5. | FALSE | Page | 9 |

INTRODUCTION TO BASIC AUDIO

SOUND THEORY

In this lesson, we will describe the fundamentals of sound and how it is transmitted. Let's begin with the theory of sound. Everything that takes the form of matter --solid, liquid or gas --is made up of micro bits of material called molecules. We can't see the molecules because of their size. These molecules stay approximately in the same location until they are disturbed. When this happens they collide.

During the collision, the molecules transfer energy to each other through whatever material they are made of --solid, liquid or gas. In sound theory, molecules continue to collide with each other until they make contact with the ear. The ear picks up the vibrations or pressure waves (energy) and channels the vibrations into the eardrum where they are converted into electrical signals. The brain then process the signals. The conversion from pressure wave to electrical information in the brain produces what we know as sound.

MICROPHONES

A microphone, like the ear, is a transducer that converts acoustical sound energy into electrical energy. The energy is then amplified and transmitted to a speaker. All microphones are basically the same. They all have their own housing, diaphragm, magnetic field and moving parts within that field. Until a sound wave is changed from the wave in the air to an electrical form, it can't be used electronically. This is the function of the microphone.

Microphones are classified by the way they change the sound waves into electrical energy. There are two components microphones must have to change sound energy into electrical energy:

1. a diaphragm, which vibrates in response to sound pressure
2. a generating element, which changes the physical vibrations of the diaphragm into usable electrical energy.

According to their principles of operation, microphones are separated into two categories. They are:

1. pressure-operated microphones
2. velocity microphones

Pressure-Operated Microphones

There are several types of pressure-operated microphones: carbon, crystal or ceramic, and condenser or capacitor. When someone speaks into a pressure-operated microphone, the diaphragm vibrates in response to the air pressure from the sound (See Figure 2-1). These vibrations cause the voice coil to move back and forth within a magnetic field. The coil produces a fluctuating electric current which, when amplified and transmitted to a speaker, reproduces the exact sound the microphone picked up initially and makes the sound audible to the listener.

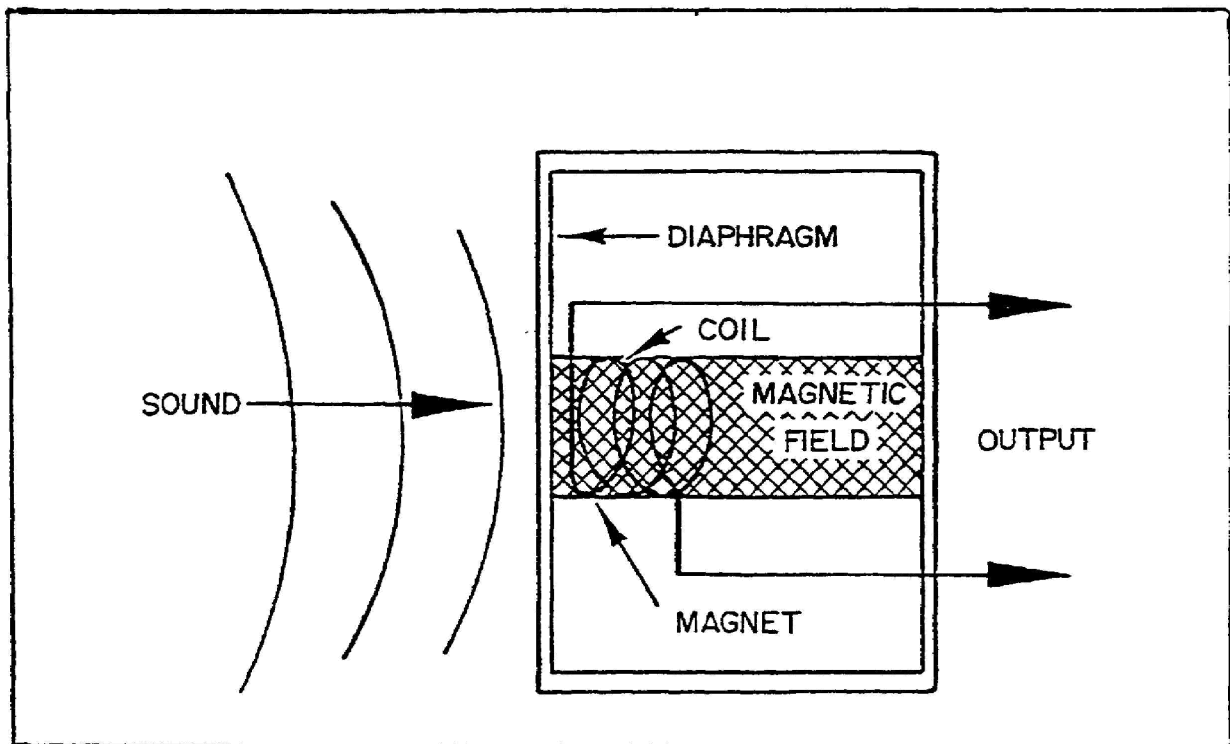


Figure 2-1
Pressure-operated microphone

Velocity Microphones

The velocity or ribbon microphone employs the moving conductor principle, in which a thin, flat piece of metal is suspended, so that it vibrates freely in a magnetic field. In this case, the ribbon element is the diaphragm. Again, a generating element changes the vibrations of the diaphragm into electrical energy (Fig. 2-2). The ribbon is not encased in a closed housing; it's exposed to the air on all sides. This type of microphone is very fragile. Any sharp, loud blast of air close to the microphone, may damage or even destroy it.

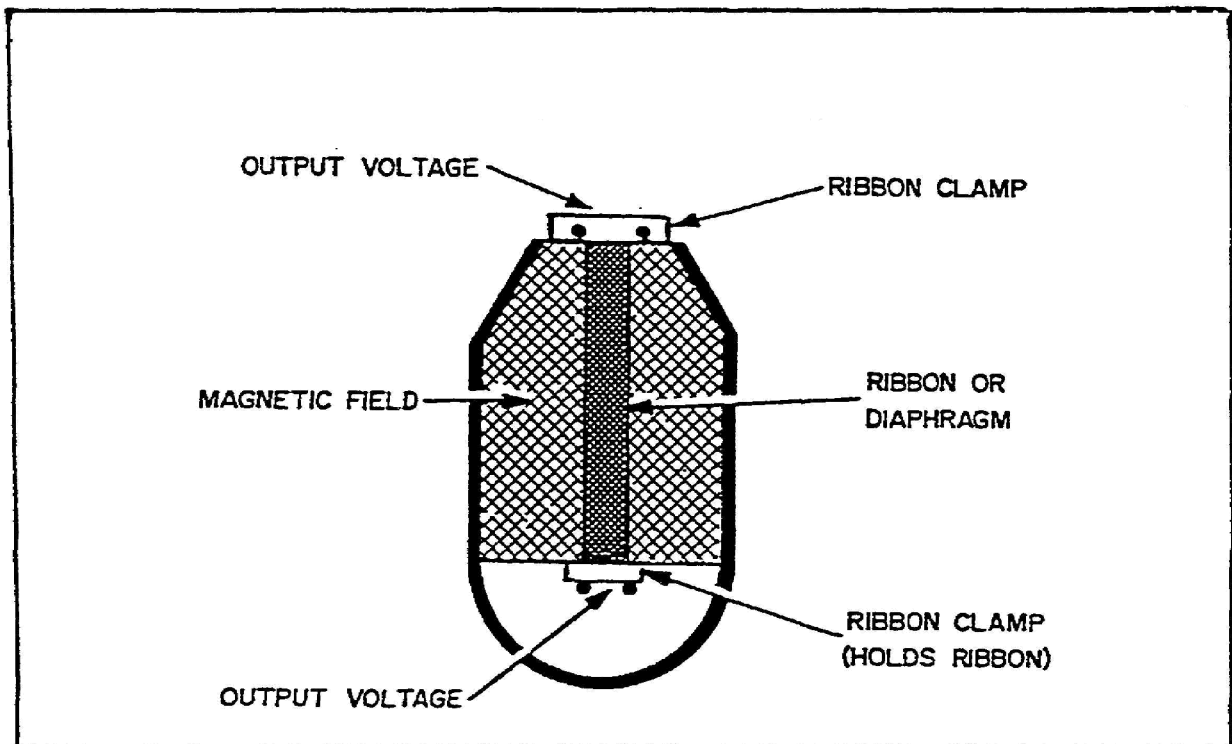


Figure 2-2
Velocity-operated microphone

ELECTRONIC CHARACTERISTICS

All audio broadcasting and/or recording begins with the use of a microphone. "Mike's" as they are commonly referred to, may be grouped into three classifications according to their directional pickup properties.

1. unidirectional (one direction)
2. bidirectional (two directions)
3. omnidirectional (all directions).

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Some mikes belong to only one class while others can be changed or adjusted to either of the other two. Microphones do not pick up sound equally from all directions. The pickup pattern of a mike will tell you how to best place the microphone or subject for optimum sound reception.

Unidirectional Microphones

The pickup pattern of the unidirectional microphone is, roughly, the shape of a heart or cardioid pattern. These microphones accept sound best at the 0 degree point with minimal response at the 180 degree point (Fig. 2-3).

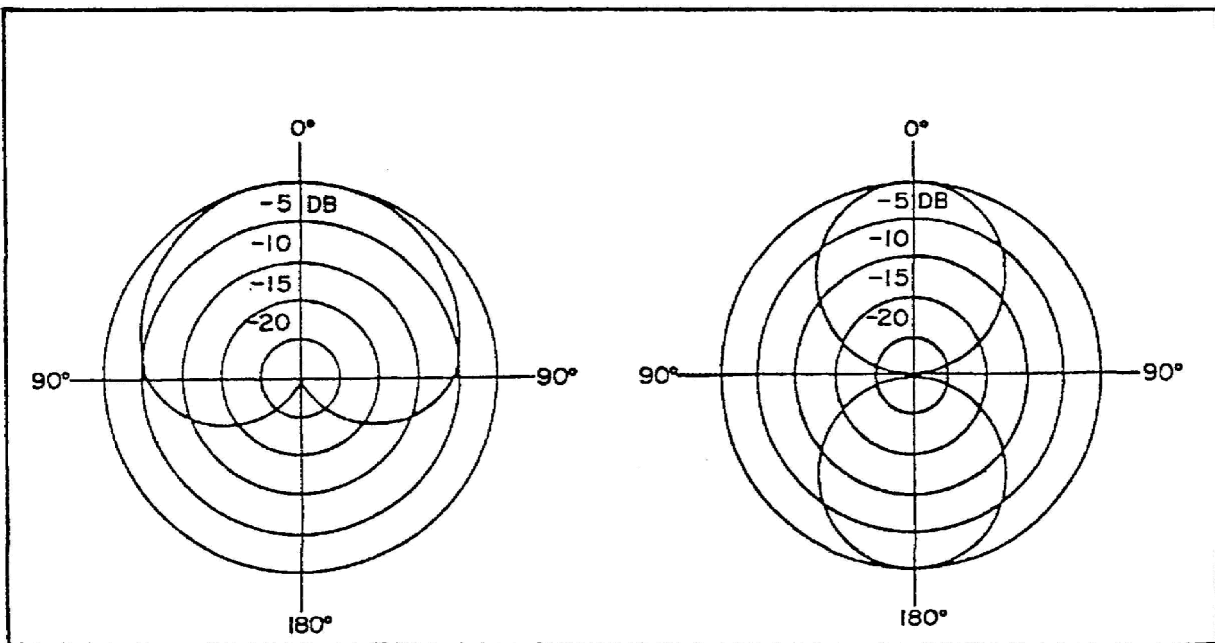


Figure 2-3
Unidirectional

Figure 2-4
Bidirectional

An example of the value of a unidirectional or cardioid microphone would be a singer performing with an orchestra. Let's say the singer uses a unidirectional mike. Its dead side may be turned toward an orchestra so the orchestra will not overpower the singer. Another example would be a speaker addressing a group. The unidirectional mike will only pick up the speaker talking. The side noise will not be heard, or if it is, it will be very faint. The unidirectional microphone must be pointed in the direction of the sound source for best results.

Bidirectional Microphones

This particular microphone has a figure eight type pickup pattern. The dead side of the microphone is on either side. This configuration accepts sound best at the 0 degree and 270 degree axis points or sides (Fig. 2-4). In radio, with two or more performers, the bidirectional microphone is usually preferred. When two or more people perform at a bidirectional mike, they not only feel less crowded. They have the advantage of playing to each other, thus giving them a feeling of natural, human interaction.

Omnidirectional

Omnidirectional mikes accept sound equally well from all directions without any loss. There are no variations in this pattern (Fig. 2-5). This microphone allows the performer to talk from any direction. The omnidirectional mike is particularly valuable for round table discussions and for voices in a group.

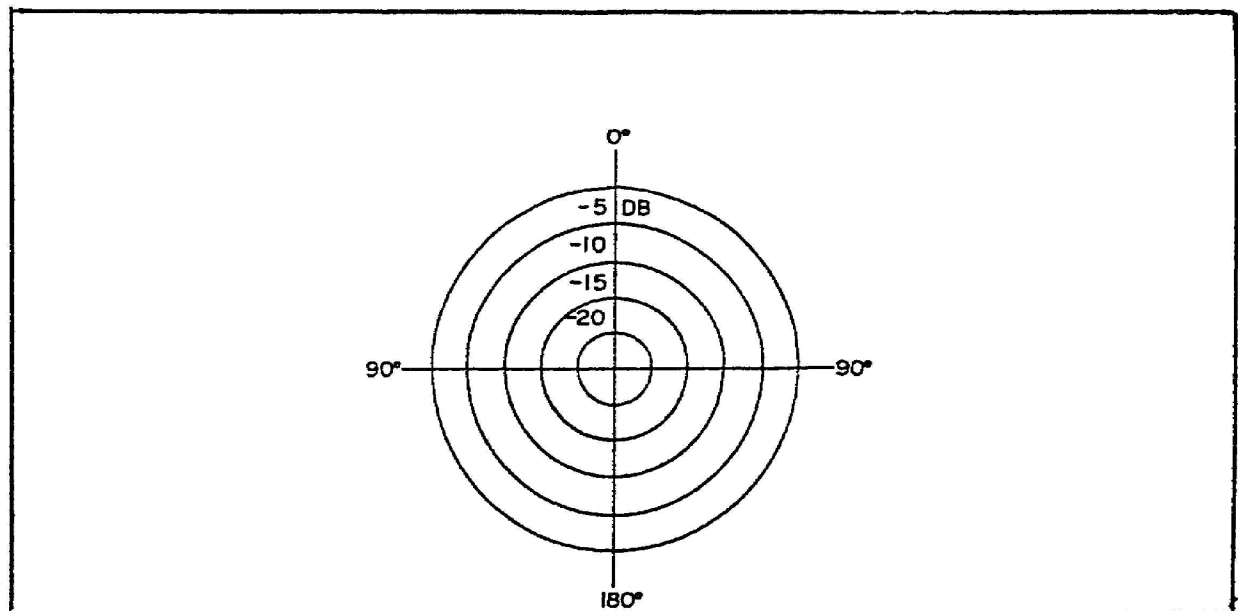


Figure 2-5
Omnidirectional

CATEGORIES OF MICROPHONES

There are two types of microphones: the dynamic and the velocity.

Dynamic

The most popular microphone in broadcasting is the dynamic microphone. The dynamic mike is the most ruggedly constructed of all the microphones. The dynamic microphone is used in all types of environments, both in studio and on remote assignments. This is because the dynamic mike has a low wind-noise characteristic. This trait and its dependability make the dynamic mike the most trusted of all microphones. The dynamic mike tends to favor high-frequency over low-frequency sounds. Because of its inherent high-frequency cutoff, the dynamic mike tends to accentuate sibilance in a person's voice. Sibilance is a hissing sound made when the letter "s" is pronounced. Dynamic mikes are pressure operated microphones.

Velocity

A close relative of the dynamic mike is the velocity microphone. This is the old standby for the broadcast and recording industry. The velocity or ribbon mike has a superb uniform frequency response between 20 to 20 thousand hertz. This may be seen with an audio test generator. The ribbon mike is extremely sensitive and should never be used outdoors. A strong wind may break the ribbon rendering the mike useless. The ribbon element is enclosed by a screen. The velocity microphone has a tendency, because it's so sensitive, to make performers "pop" their p's, b's and t's if they get too close to the mike. The explosive quality of these letters causes a very sharp, momentary increase in the pressure component of the sound wave. This may sound to the listener like a very small firecracker exploded in front of the microphone.

The velocity mike tends to favor low-frequency over high-frequency sounds. Consequently, a velocity mike may be used to deepen the voice. A unique characteristic of this mike is the closer the announcer gets to the microphone the deeper his voice will sound.

Condenser

The condenser or capacitor microphone is the mike that is chosen most by professionals. This microphone has the most exacting reproduction of sound with perfect uniformity and full-range response. The condenser mike is a pressure-operated microphone and operates on the storage of an

electrical charge which requires a battery or power supply. The head of the mike contains two plates. One plate is the diaphragm, the other is a heavy backplate. The backplate is insulated from the diaphragm and spaced parallel to its' rear surface. As sound waves enter the mike, the sound pressure causes a change in the spacing of the two plates. This varies the internal capacitance and the voltage of the battery or power supply to the signal current. The condenser mike, with its battery, has an extremely low electrical output and requires its own power supply. Because of its technical complexity and accuracy, it is one of the most expensive microphones to manufacture.

MICROPHONE PLACEMENT

Microphone placement in a radio studio is simple. The mikes are normally placed on a desk stand ready for use. Radio studio microphones are usually placed on a 45 degree angle, about four to six inches from the announcer's mouth. However, this is only a suggested guideline. As each announcer becomes more accustomed to a particular mike, they may want to move it around to get the best results for themselves.

Microphone placement is more critical for television if and when the mike is to be seen on-camera. The mike should not interfere with viewing the picture or distract the eye of the viewer by being in strange locations.

KINDS OF MICROPHONES

Lavalier Microphone

The most commonly used microphone in television is the lavalier (Fig. 2-6). The "lav" is always omnidirectional. When an announcer uses a lavalier, he talks across the mike rather than directly into it. Because it is omnidirectional

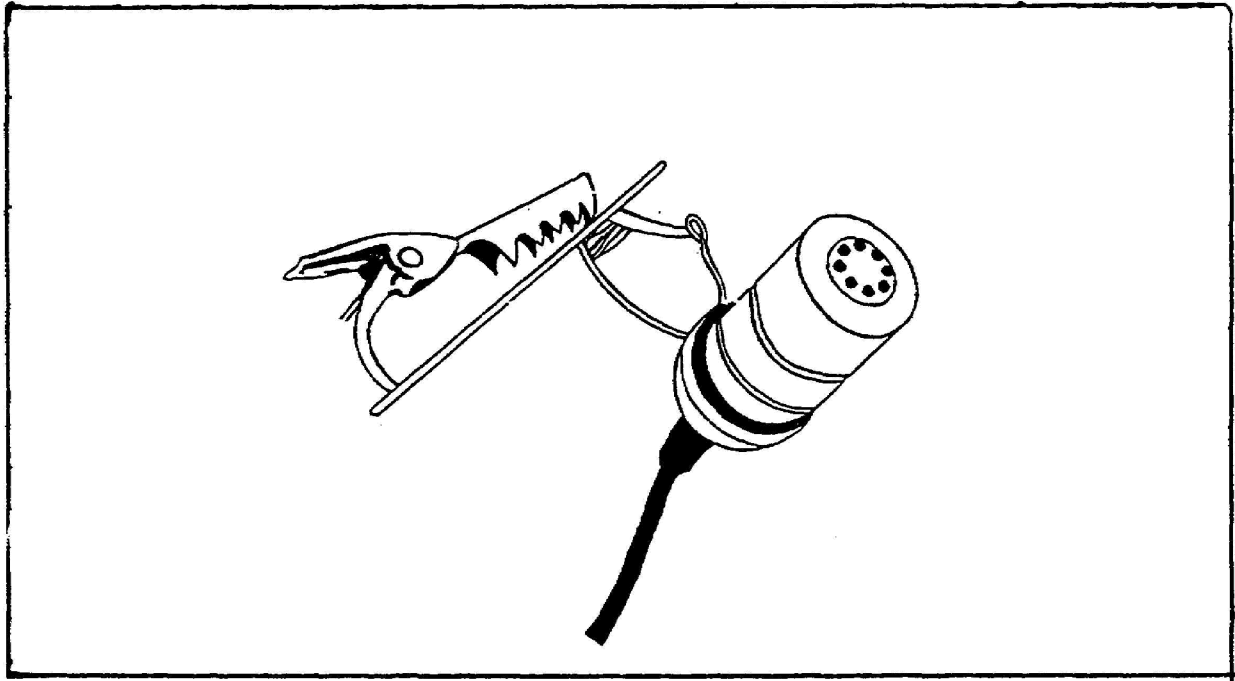


Figure 2-6
Lavalier microphone

the lav has a tendency to pick up studio noise and must be positioned properly to avoid this situation. Have the production personnel place the mike on the subject. The untrained guest who puts on his own microphone probably will position the lav where it looks best rather than for best sound pick up.

A good rule of thumb for positioning a Lavalier microphone is to place the mike in the direction the performer will face. For example, during interviews, the host and guest should face each other at about a 45 degree angle. The microphone should be attached to their lapels on the side where the host and guest face each other.

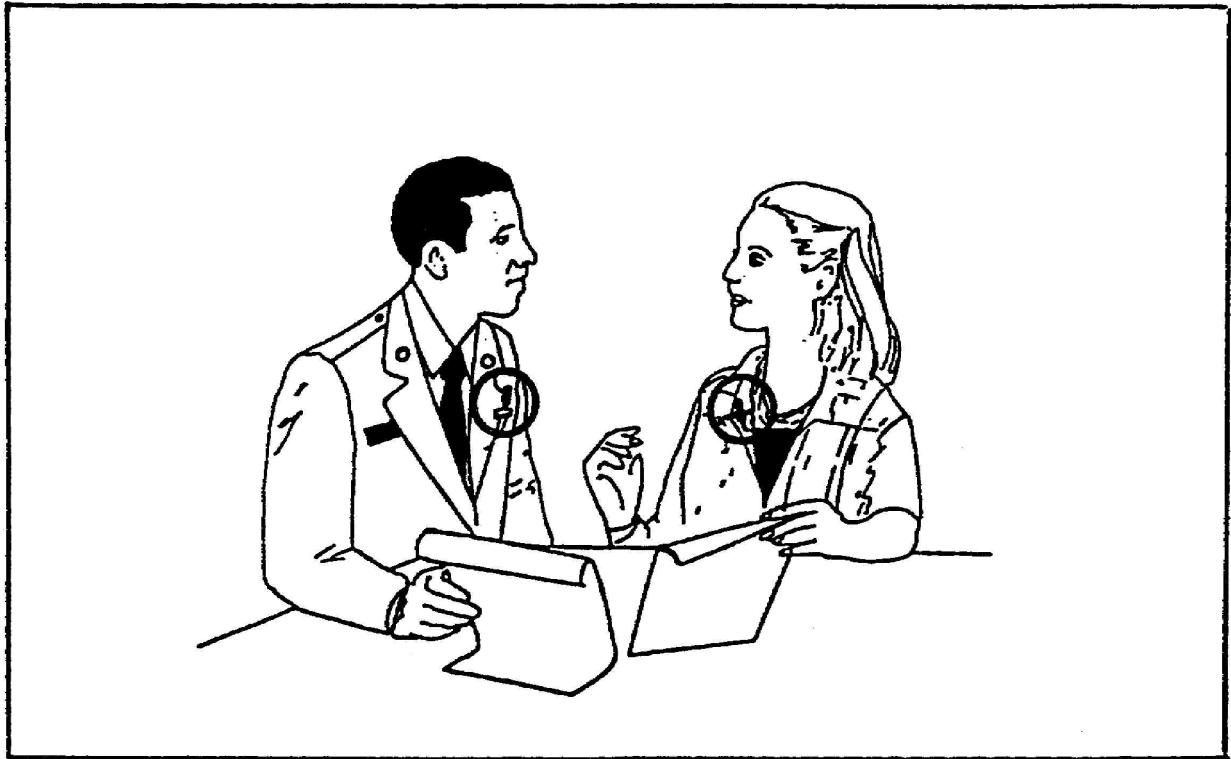


Figure 2-7
Lavalier placement

Do not place a lavalier microphone under a tie or clothing (Fig 2-7). This may result in muffled audio or extraneous clothing noise when the microphone rubs against the material.

The lavalier microphone is a good tool to use when movement is required on the set. For example, a weather report where movement is required by the weatherman from a sitting location to a standing location in the weather maps area. The lav is attached to his clothing which allows freedom of movement to the weatherman. This enables him freedom to move to the maps and back again to the set with a minimum of problems.

Desk Microphone

The desk microphone is attached to a small stand and placed on a desk or table top. The front of the mike should be pointed in the direction the announcer will normally face during the production (Fig. 2-8). Desk mikes are very sensitive to external noise. Announcers should be reminded not to tap or kick the desk.

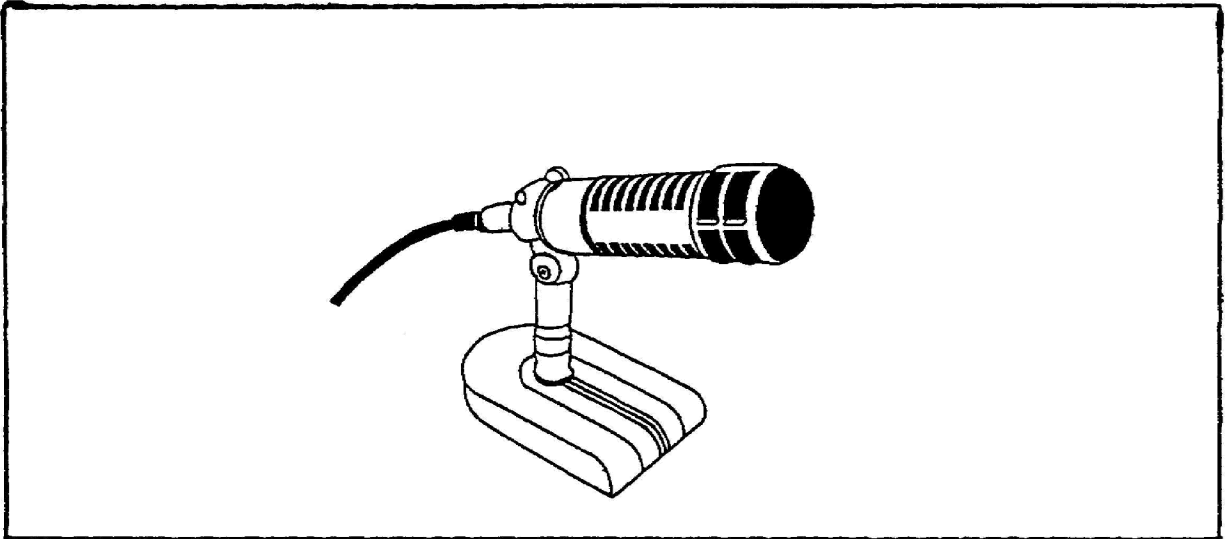


Figure 2-8
Desk microphone

Hand Microphone

The hand held microphone (Fig. 2-9) is commonly used by radio and television reporters for interviewing in the field

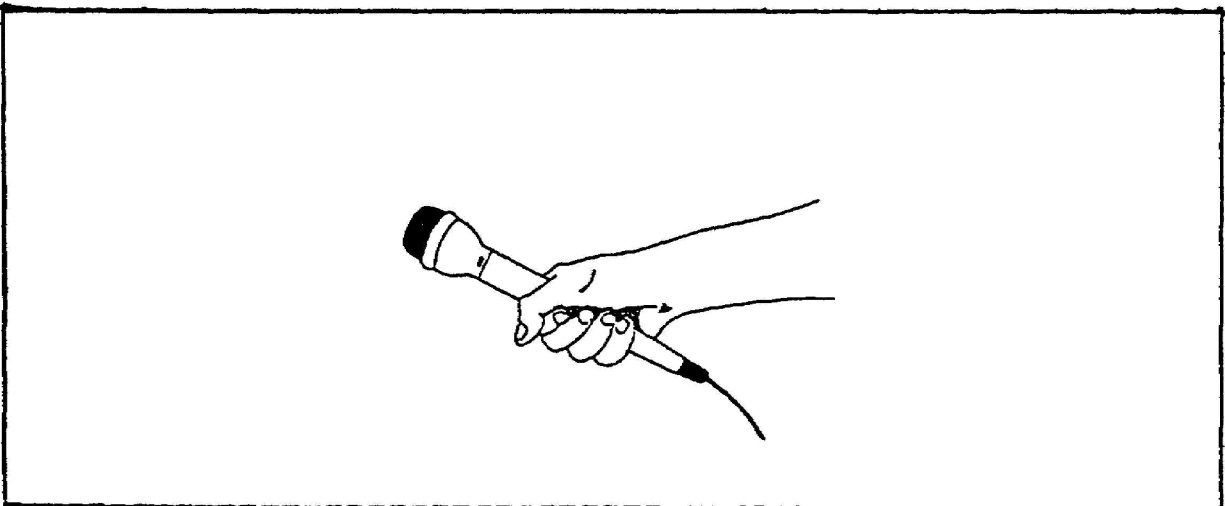


Figure 2-9
Hand microphone

LESSON 2/Learning Event 6

and by entertainers. The interviewer and performer have complete control over the positioning of the microphone, since they hand hold the mike. Because both news people and entertainers need to move around, this mike is an excellent choice.

Stand Microphone

This is basically a hand held microphone positioned on a tall stand and frequently used by singers or placed near musical instruments (Figure 2-10). The stand microphone is normally preset to the subject's height for ease of use.

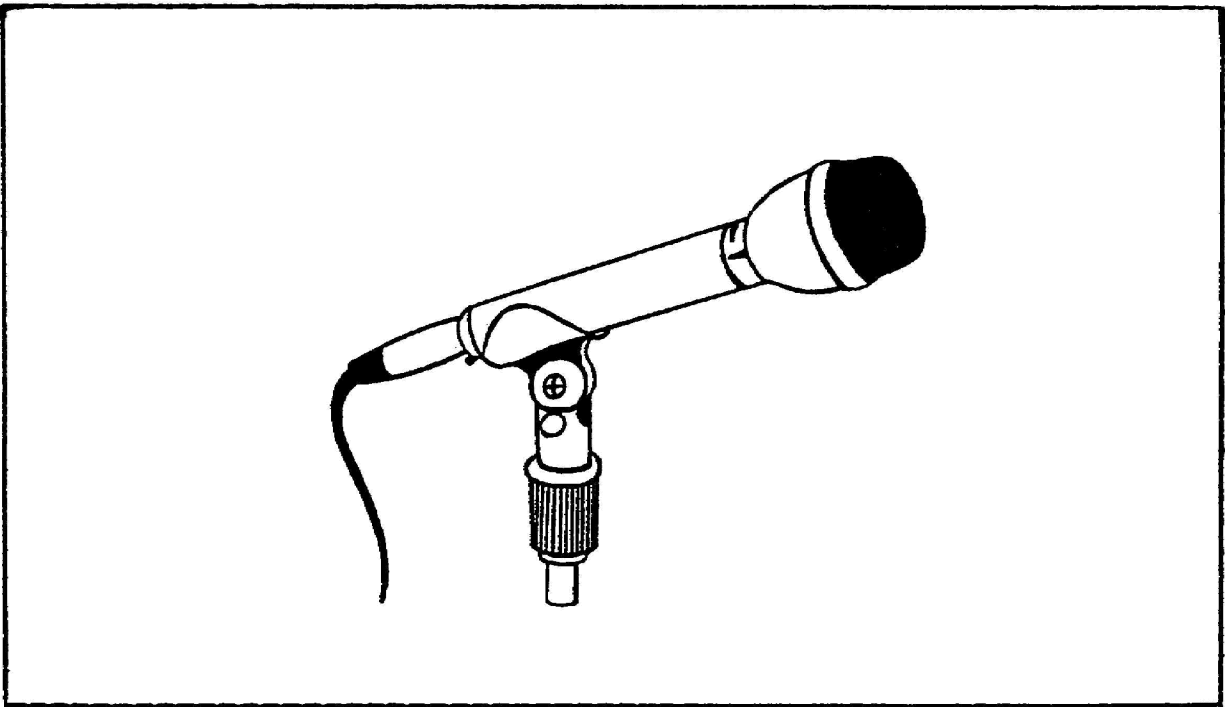


Figure 2-10
Stand microphone

Shotgun Microphone

The shotgun microphone is designed to pick up sound and not be in the picture. This is particularly useful when it is not possible to place a microphone on a speaker's lectern. The shotgun mike may be several feet from the speaker and still pick up acceptable audio. Because this mike is highly unidirectional, the shotgun locks in on the main source while eliminating most ambient or side noise. The shotgun

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microphone is specifically designed to gather sound from the front and suppress sound at the sides and rear of the microphone (Fig. 2-11).

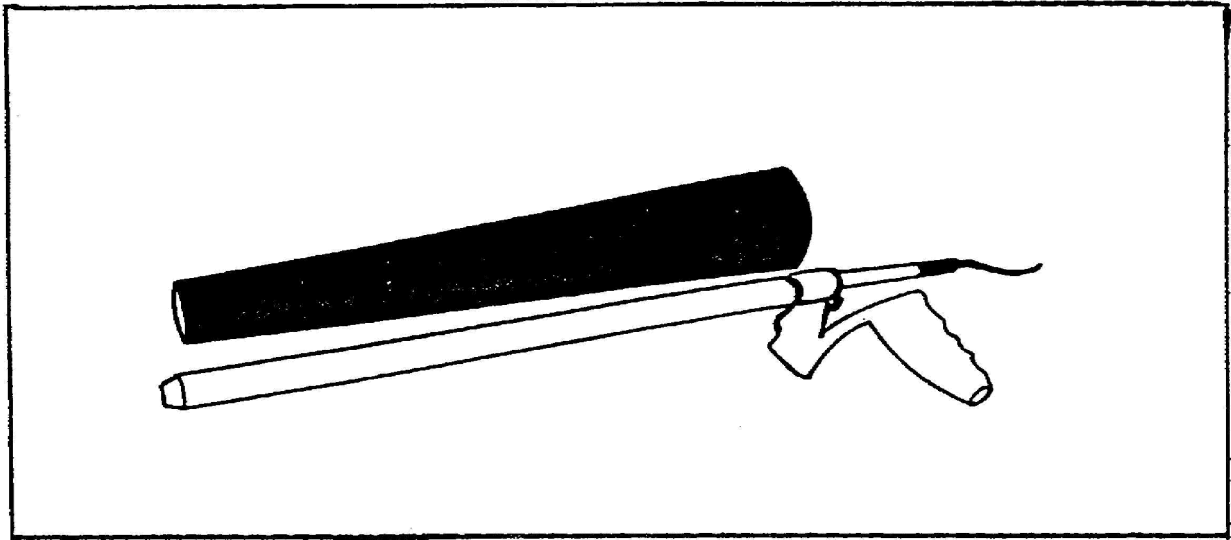


Figure 2-11
Shotgun microphone

ACOUSTICS

Most studios are acoustically controlled for recording. However, many recording situations will not be in the controlled environment of a studio. An empty room reflects sound and therefore, records differently than that same room filled with furniture; a small room sounds differently than a large room; inside acoustics are much different than outside.

For example, when covering an open-air speech where a large crowd is present, the main consideration should be recording the speech and keeping the ambient or outside noise from interfering. An omnidirectional microphone will pick up the speaker and the ambient sound. In this situation, a unidirectional microphone should be used, eliminating much of the ambient noise and keying in on the main speaker.

An interview conducted in a room that has a hollow sound presents other problems. Rooms with high ceilings or sparsely furnished and containing many hard surfaces will create this hollow effect by causing the sound waves to bounce off the hard surfaces. A bidirectional mike should be used here because this type of mike picks up sound best directly in front, and in back, with decreasing sensitivity at the sides. (See Fig. 2-4)

When conducting an acoustical analysis, it is important to know the directional characteristics of the microphones that are available. The audio person must take all possible audio situations and problems into consideration. Examine the alternatives and then select the type microphone that will provide the best pickup for the specific situation.

ACCESSORIES

Professional mikes and cables use standard jacks or connector plugs called "Canon XLR" connectors or "Canon Plugs". The canon plug is a three pronged plug with male and female connectors. Generally most audio outputs, such as the microphone end, use the male plug while most inputs in the studio audio connector box use a female receptacle. When connecting these plugs, listen for a click which tells when they are joined. When taking them apart, be sure to release the safety lock or the wires may be pulled out of the connector.

Windscreens/Filters

Most microphones are sensitive to loud, sudden, sounds and wind noise. "Pop filters and screens" are used on mikes to diminish these sounds. Pop filters are built in electronically and are usually used in dynamic microphones. Windscreens are external attachments on any mike that cover the microphone. Pop filters and screens will not eliminate all the unwanted sound but they will help. They are excellent tools to use against unwanted distortion or loud sounds.

LESSON 2/Learning Event 8

These filters slightly reduce the frequency response of a microphone (Fig. 2-12).

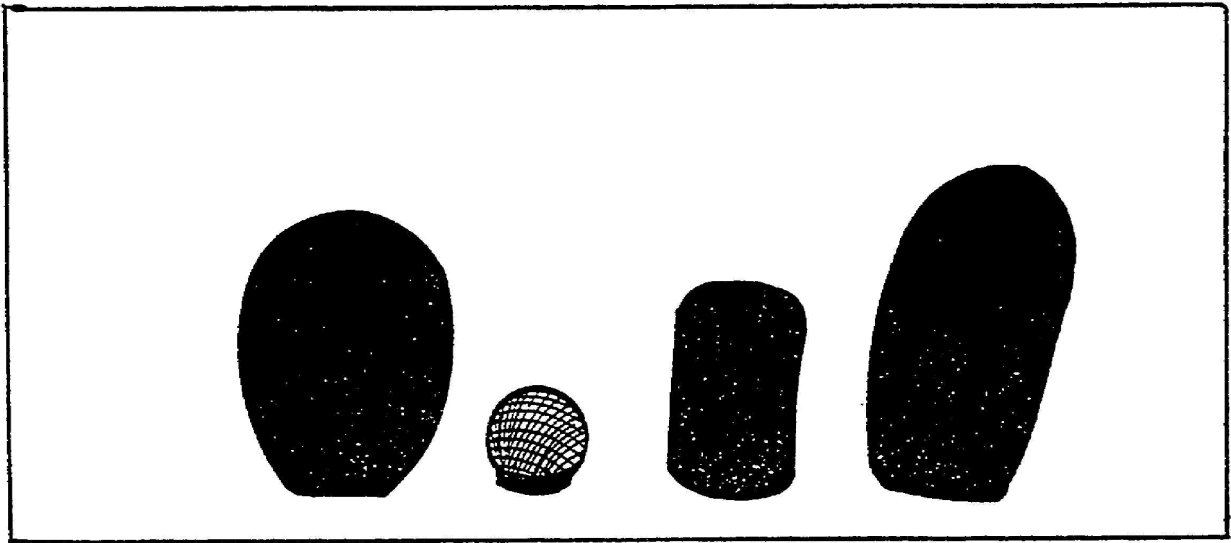


Figure 2-12
Windscreens

Connectors

Audio connector boxes are usually located low to the floor along the studio wall. These boxes usually will contain female receptacles. Connecting a microphone is easy. Just line up the pins to the female connector and push them together. To release a mike from a receptacle, push the release button. Use caution when inserting and removing a cable and handle the cable by the metal connector, NOT by the wire. Pulling on the cable may damage the wires inside. A little care will prevent a lot of problems.

Fig. 2-13 shows the different types of connectors that you may run into in a studio or field situation.

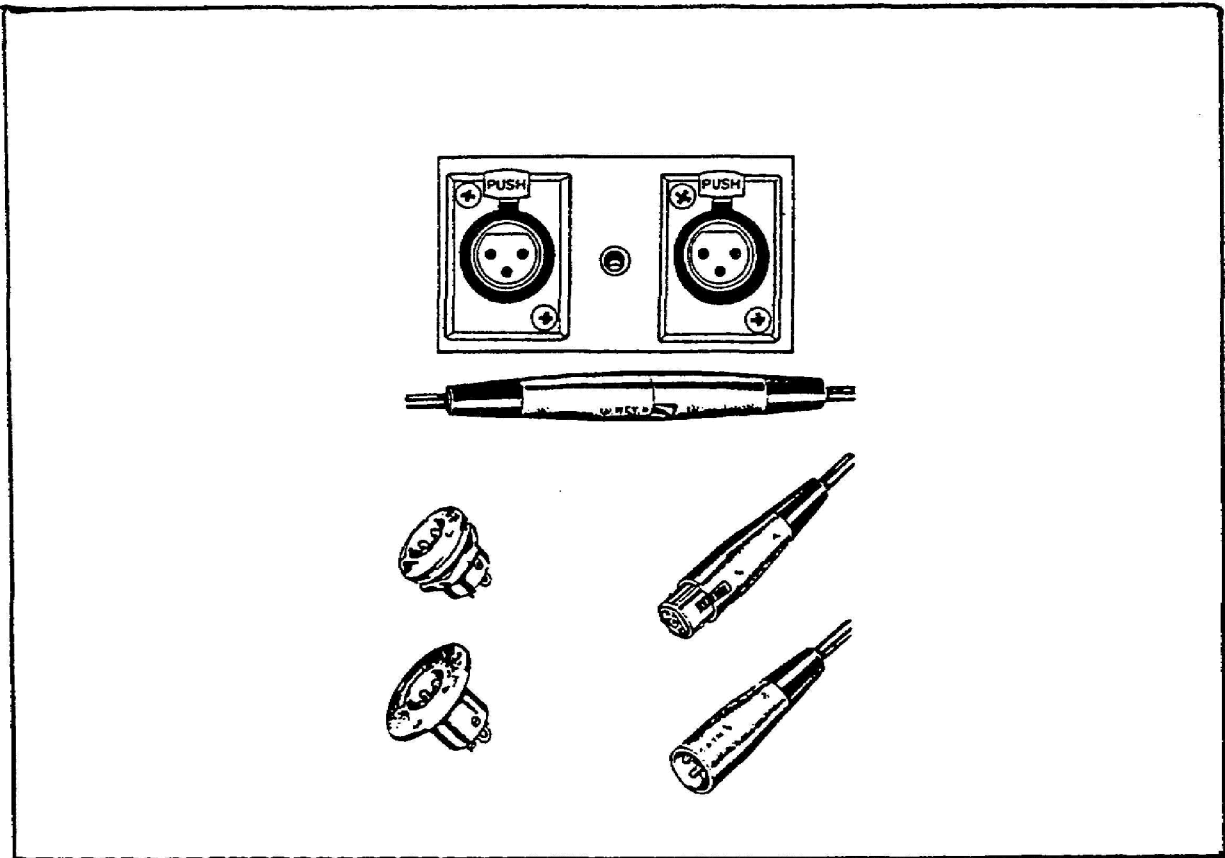


Figure 2-13
Connectors

Cables that are not in use should be neatly coiled. Be careful not to wrap them too tight or damage to the wires inside may occur. If cables or connectors are abused, they may not function when you need them. Before leaving for an assignment, always inspect the cables and connectors before you plug them into an input.

Make sure you have enough audio cable. You need to have a sufficient amount to allow for subject or crew movement and to keep it out of the camera view. It is important to have enough audio (mike) cable so it can be taped out of the way of traffic areas. When cables are run across the floor, tape them down so that no one will trip.

CONSOLE FUNCTIONS

All control consoles in the broadcast industry have the same basic similarities. Learn one control console thoroughly and be able to operate it properly and, in most cases, the other audio boards will be less difficult to operate. So take the time now at your earliest opportunity to learn audio operations and procedures.

An audio control console has three primary functions:

1. amplify sound
2. control sound
3. route sound

Amplify Sound

Amplification is accomplished when different levels of sound are received by a microphone, turntable, or tape playback sources. The audio levels are then amplified into a greater or usable sound without distorting the quality of that sound.

Controlling Sound

Sound is controlled through the use of potentiometers (pots) or faders that increase or decrease the level or intensity of the audio elements.

Routing Sound

This channels the sound by activating specific input program selector switches and turning or sliding the faders to a desired level. The sound is sent to a specific area left for Audition, the middle for Off and right for "On Air".

CONTROL CONSOLES

The operator sits in front of the audio board and operates the equipment. The audio console is an indispensable part of any audio system using more than one or two

LESSON 2/Learning Event 10

"input sources". Input sources are items of equipment like mikes, turntables, etc., that are connected to the audio board. The console allows selection from a large number of audio inputs, allowing the operator to blend or mix those selected sources into a signal output. There are two basic types:

1. Traditional monaural/stereo console.
2. Modular mono/stereo console.

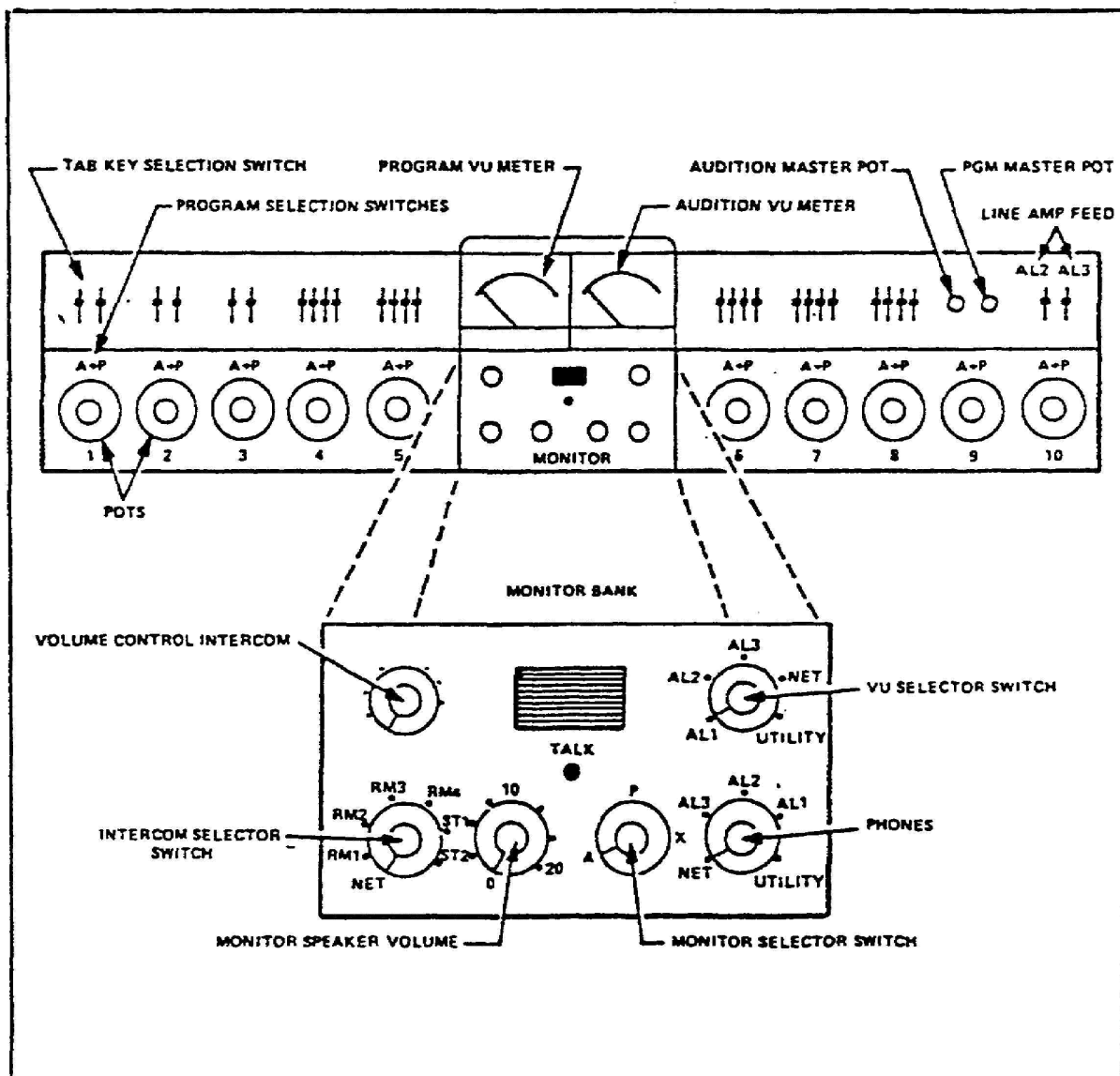


Figure 2-14
Traditional monaural/stereo console

Traditional Mono/Stereo Board

The front panel has a fixed placement of knobs, pots, switches, volume speaker controls, and one or two VU meters (Fig. 2-14). These are the older boards.

Modular Mono/Stereo Console

These are the most current audio boards. These have operating panels designed for specific applications. They have volume speaker controls, faders, mixer keys and VU (volume unit) meters (Fig. 2-15). However, "vertical linear faders" are used instead of the standard circular pots for mixing. A vertical pot is also called a linear fader.

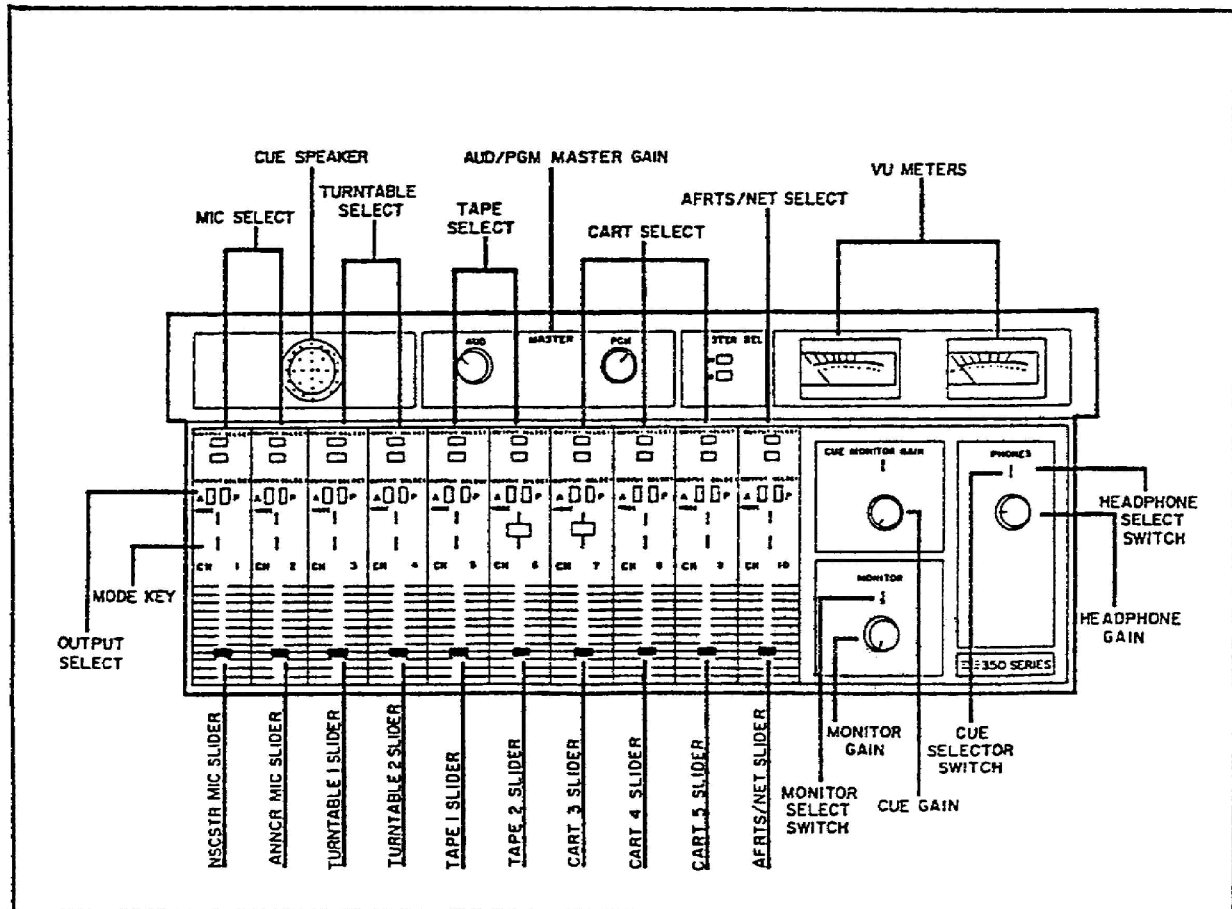


Figure 2-15
Modular mono/stereo

LESSON 2/Learning Event 10

The vertical faders appear on the console face as sliding knobs that are moved up and down to control the sound level or intensity. "Output channels" direct the sound to a specific location, i.e. PROGRAM, OFF or AUDITION.

VU Meter

Above the individual faders/pots or controls, right in front of the operator, is a large meter(s) called the "volume unit" or VU meter. The volume meter is an essential tool in dealing with audio levels or signals. It is impossible to determine how loud a sound is, or how loud we think the sound is without a VU meter to tell us. VU meters are expensive and delicate. All audio levels are set with the VU meter. Look at the VU meter (Figure 2-16). Notice there are two scales. The upper scale is read in volume units, from -20 to 0 and then +3. The zero mark is a representation of "decibels or db" with zero db equal to 100 percent modulation or audio without distortion. The newer VU meters have 0 to 100 on the top scale and the decibels on the bottom scale. Beyond zero, the scale is marked in red. Sound level readings in this area, should only be permitted momentarily because these readings indicate volume unit (VU) distortion in the audio signal.

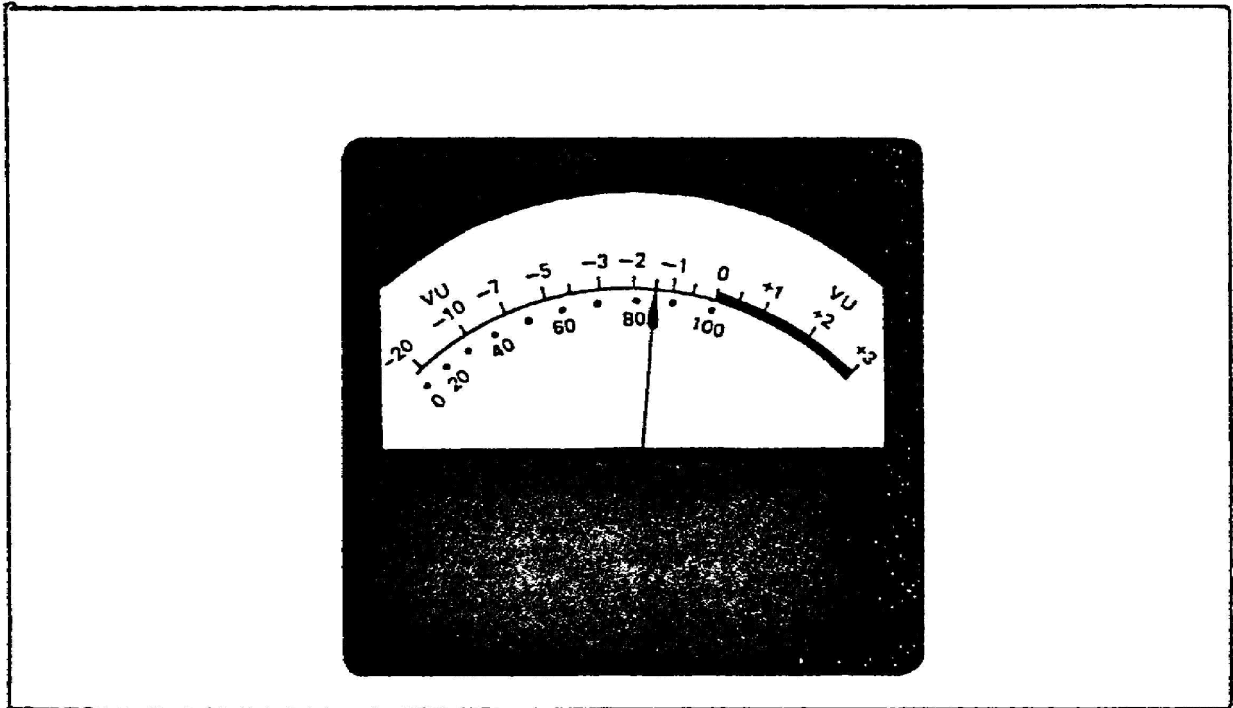


Figure 2-16
VU meter

The lower scale has a range from 0 to 100 and is a reflection of that percent of modulation. When the audio signal exceeds 100 percent modulation the scale indicates red. This is called "in the red" and is not a desirable place to be. When the needle is all the way to the right, we say "the needle is pegged". Pegging the needle may damage the needle mechanism by bending the needle. This will cause inaccurate readings. When the needle reading is down around the minus 20 mark, at the left, we say we're "riding in the mud". Riding in the mud means that the audio level is too low and should be brought up. The term "Riding Gain" refers to the amount of sound level or volume that the needle is measuring. Riding or monitoring gain with the VU meter then consists of watching the moving needle while adjusting the pot that controls the sound. The normal acceptable level for riding audio is between 80-100 per cent VU modulation and should read this at all times.

RELATED EQUIPMENT

Additional control room equipment includes turntables, cartridge and/or cassette tape recorders, speakers, clocks, remote controls and filters.

Turntables

A turntable is a high-quality record player that play records at speeds of 78, 45 and 33-1/3 revolutions per minute (rpm). The 78 rpm speed is seldom used today. The most common speeds are 45 and 33-1/3 rpm.

Tape Recorder

Audio tape recorders have three operating formats: reel-to-reel, cartridge and cassette. Entire programs, special events, and on-the-spot news items are recorded on tape, in these three formats for later insertion. Talks by inexperienced speakers may be taped and later "edited" to remove those embarrassing long pauses. The ease of editing, plus the ability to "erase" the tape and reuse it makes the tape recorder a requirement of good broadcast operations.

Reel-to-Reel. Tape recorders for broadcast use are operated at 3-3/4, 7-1/2 and 15 inches per second (ips). The

playback and recording heads on a tape recorder are the heart of the recorder. The three electromagnets are called heads. The tape heads are arranged in a line near the tape transfer mechanism. They are aligned from left to right: erase head, recording head and playback head. The tape recorder consists of:

1. A tape transfer mechanism which moves the tape from a feed reel, past the tape heads, to a take up reel at a constant speed. The constant speed is maintained by a capstan motor that pulls the tape through a pair of tangent wheels or rollers.
2. A speed-changing and start switch which allows the operator to change speeds. The speeds are either 3-3/4 to 7-1/2 or 15 ips and/or any combination of the three depending on the designs of the recorder/reproducer. The start switch is positioned to start the record/play back process and/or fast forward and reverse.
3. A recording amplifier to impress the sound onto the tape through the record head.
4. A play back amplifier to feed the sound from a previously recorded tape to the audio control board. The sound on the tape activates the play back head which in turn sends it to the play back amplifier.
5. An erase head or oscillator to clean unwanted, previously recorded sound from the tape. The erase oscillator operates the erase head which then erases the tape. This oscillator operates at a frequency above human hearing at about 25 kilohertz.

Cartridge Recorders/Reproducers. Cartridge machines use a plastic case containing a cartridge that has an endless tape loop. The tape rewinds itself as it is played back. An inaudible tone is placed on a tape by the operator for cueing purposes. This tone will rescue or stop the tape at any specific location on the tape the operator wants, automatically. In recent years, cartridge tapes have been used in place of turntables for playback of recorded transcriptions or records. This saves the records from repeated use when they first appear on music charts. News and sports announcers use cartridge tapes for recording on-the-spot events. Cartridges are also widely used in radio

and television for recording station identifications (ID's), program themes, sound effects, announcements and public service announcements (PSA's).

The cartridge tape recorder is designed to use a standard tape cartridge holding tape lengths of from 20 seconds to 31 minutes play time, at 7-1/2 ips. Cartridge tape uses the half-track format with program material recorded on one track and cue pulses recorded on the other. The cue portion of the tape has a pulse at the beginning of the program material to cue the tape. After the audio program material has played, the tape continues to roll silently through the cart until another cue tone is reached. The tape will then automatically stop. The cart may then be removed and played at a later time.

Cartridge tape may be bulk erased and re-used just like reel-to-reel tape. Cart machines are manufactured as either recorder/reproducers or as reproducers only. Storage racks are available for wall mounting or as mobile rotating stands that hold from 20 to 200 carts for studio use.

Cassette Recorder/Reproducer. The cassette recorder was originally designed for use in home entertainment. However, in recent years, they have been put to use in broadcasting by reporters for on-the-scene coverage, conducting interviews and as an audio cassette broadcast system.

Speaker

The control room speaker is an important guide to both operator and director. During a broadcast, the speaker reproduces what is on-the-air. During rehearsals, what is heard over the speaker is the basis for audio corrections and for the director's suggestions to the announcer or performers. The control room speaker may be turned up or down to a comfortable level in the control room. This does not affect what 's going over the air for broadcast or recording. There are normally two sets of speakers. The broadcast monitor speakers and the cue channel speaker.

Clocks

In radio and television, everything runs by the clock. For this reason, all clocks should be set properly. This

indicates a well run station to the listeners. Adequate consideration should be given to what clocks are used for and what types are available.

Round-face clocks are the most commonly used time instruments. They should be large enough to be read easily from anywhere in the studio. Large plain numerals and hands are a must. A 12-hour face is more desirable than a 24-hour face with small markings. A second hand is essential.

The second hand should move in one-second increments, rather than one smooth circular motion found on most household clocks. All clocks should be synchronized either by a master timer or by resetting once or twice a day as needed. It is not unusual for a majority of the non-essential clocks on a military installation to be set from times given over the radio or television. Don't confuse the listeners.

Clocks with a digital read-out have become extremely popular in recent years. The electronic read-out is preferable and generally more accurate. Some of these units may be used as clocks, standard counters, countdown timers, and stop clocks. However, some individuals can't visualize the remaining time in a program, the elapsed time or cue time, as readily as they can with the more familiar circular face clocks.

Timers

Timers are essential tools for good production work in broadcasting. They may range from a simple stop watch or photographer's timer, to an elaborate electronic timer capable of starting and stopping equipment. In broadcasting, it's generally preferred that the timer have at least start and stop capability without having to be reset to zero.

Remote Controls

Remote controls are switches that operate equipment located some distance from the audio control board. These controls allow the operator to function from a central location without having to physically touch the equipment. These remote controls are available from the equipment manufacturer.

TERMS

The following is a list of terms that will help the student better understand broadcast terminology.

Pots. Pots are the round knobs or linear (vertical) faders used to increase or decrease sound levels on an audio control board.

Inputs. Audio "inputs" to the console are normally "hardpatched," that is, permanently wired into the console. For example, mike number one and two will probably always be fed to their individual pot. The operator uses the selector key to determine if microphone number one or two will be in the audition or in the program mode and fed into the pots. Newer boards use a linear fader. This type of fader is a vertical attenuator or pot. The linear fader slides up and down a graduated scale. The strength of the signal increases in a linear or straight line output. The scale graduation has a closer tolerance.

Outputs. The next step is to determine where the signal is going. We normally have three choices: cue, audition or program. The cue system amplifier will let the operator hear the input signal. This signal does not reflect on the VU meter nor does it go out over the air. The cue system is solely for the operator to hear what is going to air. The cue system has its own lower quality speaker, and distinct sound. The speaker quality allows the operator to tell the difference between the on-air audio and the next source audio in cue.

Channel selector switch. Immediately above each pot is a three positioned switch. This switch directs the sound to the different audio channels. In the left position, the signal or audio is fed to the audition monitor/speaker channel. The middle position is off and in the far right position the channel is sent to the program or on-air output.

Terms continued

Audition/Program. The audition channel is primarily used to set up the next sound source. On many audio boards, the audition system will have the same quality as the program channel. In order for the operator to see the VU level reading in audition the operator must turn the audition/program monitor switch to the position that indicates audition VU monitor. Likewise, for the operator to monitor or hear the program information, this switch must be in the program channel.

Master Program Switch. The master program selector switch normally has only two positions; Off and Program. If the program is to be heard by the listener, the audio must be sent to the transmitter and this switch must be in the program position.

The master program level is predetermined and set. The engineer calibrates the signal to determine what the best audio output level of the console is to the transmitter. NEVER change this preset level unless directed to do so by an engineer or your supervisor.

Operating Techniques. Operating techniques refer to the operators ability to mix, blend and control sound sources. Let's make sure we are talking the same audio language for basic audio technique. "FADING" is opening and closing the pot. "CROSSFADE" is to reduce the level of an existing sound source while increasing the level of a second sound. "SEGUE" (pronounced seg-way) is an audio transition whereby the preceding sound is faded out and the following sound faded in immediately. "DOWN and UNDER" is the fading down of music to a low level for the entrance of a voice and then holding the music source at a low level. "UP and UNDER" is the gradual increase of music to a low level while an announcement is being made, usually being followed by "UP and FULL" when the announcement is concluded. "DOWN and OUT" is fading down the music to a low level for the entrance of a voice and then taking the music completely out. Remember, avoid crossfading with music vocals where the voice will be cut in either direction. Only use down and under, and up and under, etc., when vocals are needed for emphasis.

Terms continued

Patch Panel. In a control room that has a patch panel, patch bay, or patch board, the major pieces of equipment in the studio may be connected to the preceding unit through patching. A patch panel lets the operator or engineer connect or by-pass the output of one piece of equipment to the input of another through a system of standard jacks that are attached to short lengths of shielded cable with male plugs on both ends. The process is called "patching". The by-passing is always done from the "output" of the last good piece of equipment, around the bad piece of equipment, in line to the "input" of the replacement piece of equipment. This process will allow the broadcast process to continue. These interconnecting cables are called external patch cords.

Patch cords should always be in one of two places; hung up on a storage hook; or with both plugs inserted into the patch panel. Do not leave one end of a patch cord dangling. The cord may become damaged or become the source of unwanted static or noise in the audio system. Give frayed or damaged cords to maintenance personnel for repair. Keep only well maintained cords in the studio.

PRACTICE EXERCISE

LESSON #2

BASIC AUDIO

SUBCOURSE No. DI0370

INSTRUCTIONS:

Review the material in this lesson. Answer the questions below by circling the "T" or "F" next to each question. Compare your answers with the answers on the next page. Ensure that you understand the lesson material and answers before proceeding to the next lesson.

- T F 1. In a pressure-operated microphone, the diaphragm vibrates with the pressure from the sound and makes the voice coil move back and forth in a magnetic field.
- T F 2. The omnidirectional mike accepts sound quality from only one direction.
- T F 3. The most commonly used microphone in television is the lavalier.
- T F 4. Windscreens are externally mounted on the microphones and can help eliminate loud distortion.
- T F 5. All audio control consoles are similar.
- T F 6. When patching, patch from the input to the output.
- T F 7. When the channel selector switch is in the program position, the signal will be sent to the transmitter.

ANSWER KEY

PRACTICE EXERCISE

LESSON #2

SUBCOURSE No. DI0370

INTRODUCTION TO BASIC AUDIO

- | | | | |
|----|-------|------|----|
| 1. | TRUE | Page | 16 |
| 2. | FALSE | Page | 19 |
| 3. | TRUE | Page | 21 |
| 4. | TRUE | Page | 25 |
| 5. | TRUE | Page | 28 |
| 6. | FALSE | Page | 37 |
| 7. | TRUE | Page | 37 |

BASIC SCENERY

SCENERY

Television scenery plays a major role in the quality of the visual portion of a TV program. Guidelines applicable to other visual elements also apply to scenery, especially the concepts of contrast and detail.

Today, the emphasis is on simplicity when designing scenery. Scenery created for television should be symbolic rather than too realistic. Size, texture, color and location of sets are specifically adapted to what the television camera can see. The scenic environment, though important, remains secondary. However, broadcasters should know something about the design and construction of scenery and properties.

Scenery is divided into two categories. Simply put, all scenery either stands or hangs.

Standing Scenery

The most commonly used standing scenery units are known as "flats". Flats consist of a frame and muslin or canvas covering, plus tacks, glue, nails, screws and hinges as required. Standing flats should be high enough to prevent overshooting by the camera during wide-angle long shots. The height is usually 8 to 10 feet and the width may vary from 3 to 5 feet depending upon studio requirements. Scenery constructed today is much lighter than it was several years ago. Remember to make the scenery light enough to be assembled or disassembled with a minimum of time by one person. Paper-covered sheets, and plywood, or other construction materials serve this purpose very nicely.

Flats may be single, twofold, or threefold, with different horizontal dimensions and fold for storage. Flats may contain openings for doors or windows into which these units may be fastened. Sets may require miscellaneous standing units such as pylons (which look like three-sided pillars), step blocks, pedestal, platforms, plastic bushes and a variety of folding screens. All of these special set pieces are considered as standing scenery.

Hanging Scenery

Hanging scenery is either suspended from an arrangement of pipes, battens, grids, or from some other piece of standing scenery. The most versatile hanging background unit is the cyclorama.

A cyclorama is a large curtain that hangs down from the grids in sections. They usually come in three colors white, black and chroma key blue. Usually they cover three sides of a studio.

Other hanging scenery may include painted canvas drops, curtains which may be slid or traversed horizontally, drapes, murals and sometimes photomurals. The chroma key drop is a wide roll of blue canvas that is for "keying" Keying is electronically inserted information to the side or behind the announcer. The electronic insert adds support information for the announcer. Normally, this technique is used in newscasts for slides and videotapes.

PROPERTY

Studio sets are normally built from a number of separate, prefabricated scenic units, positioned and fastened together. Subsequently, they are dressed with appropriate furnishings, properties, drapes, etc., to create the total scenic effect. There are three types of properties:

1. stage properties, or props,
2. hand props
3. set dressings.

Stage Props

There are many types of stage properties, but the term generally refers to furniture: news desks, tables, lectern, chairs, etc.

Hand Props

Hand props consist of all items that are actually handled by people during a show. They include such items as ashtrays, telephones, typewriters, dishes, silverware, glasses, bottles and food.

Set Dressings

Set dressings are furnishings that normally give an apartment or set its distinguishing characteristics of locale, mood, etc. Set dressings also include pictures, draperies, bookcases, fireplace, lamps and chandeliers, indoor plants, and miscellaneous decorative items, etc.

STUDIO BACKGROUNDS

In preparing studio backgrounds, the main problem of contrast and layout are important to consider in the overall program. Before preparing the background or scenery for a program, broadcasters need to identify camera movement, whether or not the background will be seen in a close up, and what type of action will take place in front of the background. The background, as a general rule, should be darker than the foreground. A darker area tends to recede from the viewer while a lighter area tends to stand out. This gives greater separation or depth between background and subject. Separation is a feature which is always desirable for television transmission. If the background is not to be shown in a close up, the lines and designs may be coarse. But, if one area is to be seen close up, then more detail should be added to that particular area.

Contrast

Television lighting contrast is important. Backgrounds may be adjusted by varying color, material texture, or light intensity. The most important characteristics of any particular light are direction, intensity and quality.

All three characteristics will influence the reflective value of the backdrop but in no case should the contrast range exceed the limits of the television system of 20 to 1. The brightness of color is usually measured by how much light objects reflect.

Highly reflective objects should never be included on TV as property or as part of a costume. If it is necessary to use a highly reflective surface, dull it with a special dulling spray. If dulling spray is not readily available, use soap or a solution of Epsom salts and stale beer (1 tablespoon of salt to 1 cup of stale beer). Spraying or brushing a shiny surface with this mixture will appreciably dull reflecting properties. Brasso will also dull very shiny objects. Just dab it on and let it dry.

Storage

Small station operations will be primarily concerned with non-dramatic local presentations. For this reason, the station wardrobe or costumes will be somewhere between nonexistent and very small. What there is, if anything, will probably be miscellaneous items occasionally necessary to correct clothing contrast problems.

We defined scenery at the beginning of this lesson using the terms "standing" and "hanging". In any case, if there is a lot of scenery, storage may be a problem. From the standpoint of availability, storage in the studio is best because some scenery is quite heavy. However, some scenery may require too much studio space when not in use. If so, operations personnel may have to move it into hallways or adjacent rooms or to a props and sceneries storage area. Wherever scenery is stored, it's best to have scene docks for the flats. A scene dock has slots into which the top and bottom edges of the flats slide for vertical storage like books in a bookcases. If there is no room for scene docks, scenery may have to be leaned against walls or stacked in layers. If necessary, it is best to reserve an area for each type of flat which will at least segregate singles, two folds, and three folds. Pile flats in flat horizontal layers, back to back to avoid damage. Space around the walls should be assigned specific types of flats. Drapes will be less apt to wrinkle or develop horizontal folds if they are hung on high racks. Costumes and set dressings should be stored in a prop room adjacent to the studio.

Flameproofing

Fire regulations require materials that are to be used for scenery to be flameproofed. This may be done by spraying or painting the scenery (either before or after it has been made or painted) with special FLAMEPROOFING chemicals. These chemicals are available from companies that deal in stage or scenery equipment or may be mixed at the studio from ingredients found in almost any grocery store. One formula commonly used is:

- a. 1 pound borax (sodium tetraborate)
- b. 1 pound sal ammoniac (ammonium chloride)
- c. 3 quarts water

WARNING

Although the scenery material may have been flameproofed, this does not mean that the scenery will not burn. Flameproofing only retards or slows the ignition process.

Issue Control

As with all station equipment and supplies subject to intermittent use, it is best that issue slips be completed by personnel requiring scenery or other material from storage. The issue slip should identify the material; show the length of time the material will be needed; and give the probable date of return. A suspense filing system is advisable so that the scenery and/or property custodian has information immediately available on the location and future availability of items. The custodian should establish controls for such supplies as paint, fabrics, and hardware. The reason for supply controls, other than avoiding waste, is to insure adequate inventory and sufficient lead time for planning, requesting, and purchasing.

PRACTICE EXERCISE

LESSON #3

SCENERY

SUBCOURSE No. DI0370

INSTRUCTIONS:

Review the material in this lesson. Answer the questions below by circling the "T" or "F" next to each question. Compare your answers with the answer key on the next page. Ensure that you understand the lesson material and answers before proceeding.

- T F 1. A cyclorama has many different pieces that cover only one wall.
- T F 2. The most commonly used standing units are flats.
- T F 3. The brightness of color is usually determined by the amount of light it reflects.
- T F 4. Studio settings are built from a number of separate prefabricated scenic-units, positioned and fastened together.
- T F 5. The best way to store flats is to put them all together one on top of the other.
- T F 6. Fire regulations require materials that are to be used as scenery to be flameproofed.
- T F 7. Issue control slips should be required of personnel requesting scenery and other materials from storage.

ANSWER KEY

PRACTICE EXERCISE

LESSON #3

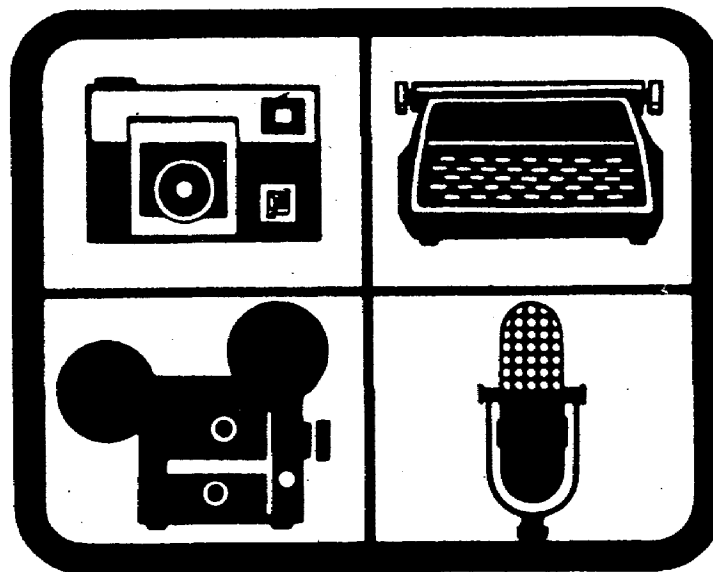
SUBCOURSE No. DI0370

SCENERY

- | | | | |
|----|-------|------|----|
| 1. | FALSE | Page | 42 |
| 2. | TRUE | Page | 41 |
| 3. | TRUE | Page | 43 |
| 4. | TRUE | Page | 42 |
| 5. | FALSE | Page | 44 |
| 6. | TRUE | Page | 44 |
| 7. | TRUE | Page | 45 |

**TELEVISION GRAPHICS FOR BROADCAST
JOURNALISTS**
(BROADCASTING)

PUBLIC AFFAIRS



THE ARMY INSTITUTE FOR PROFESSIONAL DEVELOPMENT
ARMY CORRESPONDENCE COURSE PROGRAM

**A
I
P
D**



MOS 71R SKILL LEVELS 1 AND 2

TELEVISION GRAPHICS

for

BROADCAST JOURNALISTS

Subcourse No. DI0390

JUNE 1988

**US Army Public Affairs Center
Fort Meade, Maryland**

3 Credit Hours

GENERAL

The Television Graphics subcourse, part of the Broadcast Journalist 71R Skill Level I and 2 Subcourse, is designed to introduce the Army broadcaster to an entry-level understanding of Television Graphics. This subcourse is presented in one lesson.

ADMINISTRATIVE INSTRUCTIONS

SUBCOURSE CONTENT

This subcourse contains one lesson, related to the basic tasks of the entry-level broadcaster. This lesson will provide a general knowledge and understanding of television graphics.

Supplemental Requirements:

This lesson may be taken without any prerequisites.

Material Needed:

You will need paper and a pencil to complete this subcourse. No other materials are needed.

Reference Material:

No supplementary references are needed for this subcourse.

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*** IMPORTANT NOTICE ***

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PLEASE DISREGARD ALL REFERENCES TO THE 75% REQUIREMENT

TELEVISION GRAPHICS for BROADCAST JOURNALISTS

INTRODUCTION

The television broadcaster must be able to think visually in order to make the most of the television medium. Visuals can, in some cases, tell the entire story by themselves and should be an integral part of a production instead of an afterthought. You may have heard the cliché "one picture is worth a thousand words." Well it's true, and effective visuals will help you tell the story clearer. A viewer's imagination can actually provide the "soundtrack," sometimes enhanced by narration (used sparingly) and television dialogue.

The term "visuals" may be categorized into three separate areas:

1. Graphics (maps, charts, diagrams, illustrations, printed IDs, outlines and summaries, plus character-generator information).
2. Photographic techniques (films, slides, filmstrips, and still photos).
3. Television backdrops, props, scenery and subject/talent visual information not included in the first two categories.

TECHNICAL REQUIREMENTS

Before you even plan or use any type of television graphic, you must be aware of the technical limitations and guidelines involved. Even if you do, or do not actually design or prepare the graphics, you'll need to be able to guide your artist and understand the limitations of the medium.

Therefore, it's important to understand how visuals must be tailored for television before producing or selecting them. The novice broadcaster, who doesn't understand these basic principles, may see a random visual he likes and try to use. The veteran will not rely on first impressions, but base his decision on more scientific guidelines and experience.

Any producer of television programs learns quickly that he needs a "working knowledge" of many contributory fields.

One of these is graphic art. All television shows use graphic materials--title cards, photographs, illustrations, charts and maps, just to name a few. Graphic materials greatly enhance news and feature productions, spot announcements, and virtually all types of TV programs. Keep in mind that, in television, it is important to present information visually as often as possible. Without visuals, you lose the force of this effective television medium and might as well be on radio. People tend to think visually. Generally, people remember visual information longer than Just the spoken word.

Important Characteristics

Whether written, pictorial, diagrammatic, or sheer design, graphics have a place in almost every television production. In preparing graphics for TV, you should pay close attention to the aspect ratio, size, area limitations, type of graphics, preparation techniques, methods of presentation, storing and cataloging of the visuals.

Aspect Ratio

The aspect ratio of any television screen, regardless of physical size, is 3 x 4. This means that the TV screen is divided into three units high and four units wide. The visual elements themselves should be kept in a format size that will complement either 6 x 8 or 9 x 12. These aspect ratios will help you keep the materials and objects within the 3 x 4 aspect ratio format (Figure 1-1). All graphics should be prepared within this aspect ratio. This allows all of the information to be seen on the TV screen, not just a portion of the information. For example: A vertical picture without the proper aspect ratio will lose a major portion of its information from either the top, bottom or both and/or its sides and look poor on a TV screen.

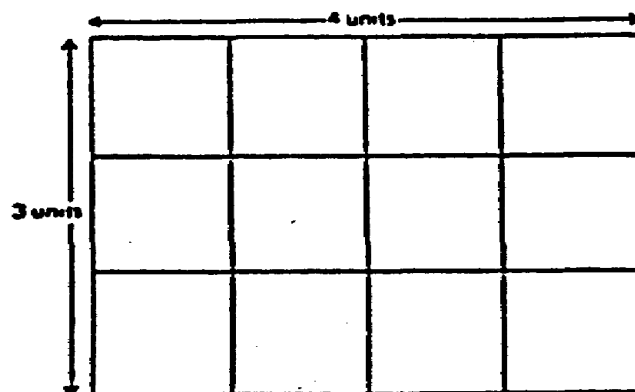


Figure 1-1
TV aspect ratio

The total area that the camera "sees" is called the "scanning area." This entire image is fully transmitted, but the outer edges and the corners usually don't appear on the home television set due to the shape of the picture tube. A properly aligned TV receiver will display all scanned information at the top and bottom center of the picture, but will crop corners due to the non-square corners of the picture tubes. Older picture tubes cropped even more at the corners and on the sides. A common mistake made by many new broadcasters is to allow too much headroom at the top of the picture. Remember, the home receiver sees everything at the top center, so don't overcompensate the same way you do for edge and corner cropping.

Essential Area

The part of the picture that reaches the viewer must include all of the important information and this is known as the "essential picture area." All visuals have a scanning area and an essential area. The scanning area is the entire picture from top to bottom and from side to side. The essential area is the main information within that picture area, the meat of that picture (Fig. 1-2).

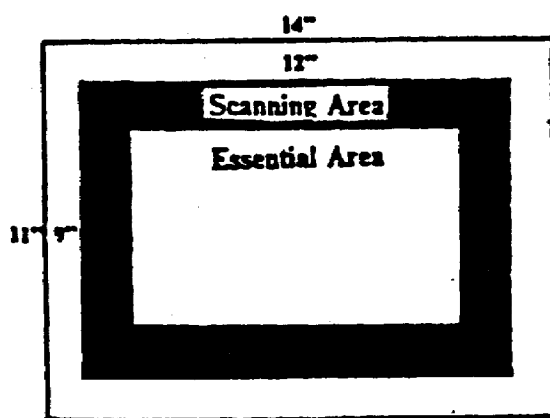


Figure 1-2
Scanning and Essential Area

In the case of program titles or credits, for example, the essential area includes all of the title or other lettering. Every visual has a scanning area and an essential area. However, there is another area which can be as important --the "Border Area."

Border Area

Graphic artwork should have a "border" around the scanning area for several reasons:

1. It helps keep the picture from being damaged if dropped.
2. It helps protect artwork from fingerprints and smudges.
3. The border area may prevent your audience from seeing past the card to some behind-the-scenes activity if the cameraman did not have time to frame the shot properly.
4. It serves as a "bleed-off" area for overscanned sets. The excess border contains no essential information.

Size

There is no specific size of studio title cards for all television artwork or graphics. However, a generally accepted standard size for most cards is 11 x 14 inches. It's best to make all graphics the same size for storage purposes. The 11 x 14-inch size fits well in a standard file cabinet. The cards should be numbered with a piece of marking tape on the edge. Stagger these tabs for easy access. This 11 x 14-inch size has several advantages:

1. It allows an ample 2-inch handling border on which fingerprints and smudges will not damage the primary information.
2. It leaves a 9 x 12-inch working area for both the cameraman and artist.
3. It also agrees with the aspect ratio requirements of 3 x 4, but in addition this physical size incorporates a safety measure.

It's also wise to mark off an additional 10 or 15 percent inside this 9 x 12-inch area. This allows for the area that is lost due to cropping on the home television receiver (transmission loss). Thus you will wind up with a copy area of about 7 1/2 x 10-inches. This protects against

information loss at the edges of the picture (Figure 1-3).

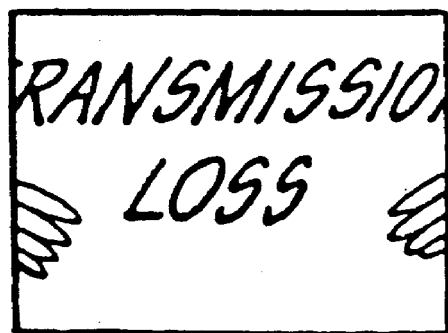
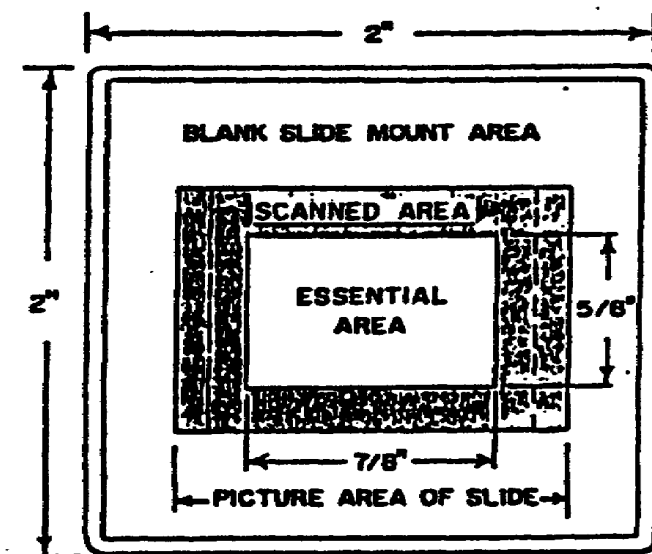


Figure 1-3
Transmission Loss

Figure 1-4 shows the application of the same principles for a 2 x 2-inch photo slide. A small television camera (located in the film chain room) focuses on the scanned area, which measures $27/32 \times 11/18$ -inches. Approximately $1/16$ -inch on each side of the picture is lost due to transmission over the airwaves. The essential area is reduced to about $5/8 \times 7/8$ -inch. These 2 x 2-inch slides may be made with any 35mm camera, but it is best to use a single-lens reflex camera (SLR) in order to more accurately place essential material in the center of the frame.



Figures 1-4
2 x 2-inch slide

Remember to use the scanning area, because on some television sets the total scanning area is visible, while on others there is a 10-percent loss. Therefore, keep all pertinent information within the essential, or "safe", area. This is especially critical for words.

TYPES OF GRAPHICS

The types and uses of graphics are limited only by your imagination. Graphics come in various forms, each having a name that makes it easily identifiable to production and artwork personnel. The major types of television graphics include:

1. Studio card
2. Plain title card
3. Combination title card
4. Super or key card
5. Chroma key card
6. Slide
7. Maps and charts
8. Character generator
9. Computer Graphics

Studio Card

The studio card shows illustration or pictorial-type information,. The picture may be a mounted photo or an illustration. The studio card sits on an easel and may be a plain card (words only) or may have an illustration or picture with words. Combining words and illustrations requires the coordination of two video sources during a production, i.e. character generation and art.

Wallpaper "samples" are an excellent background source for studio cards. Color slides and other transparencies are usually made from studio cards. This allows for easier storage.

Plain Title Card

The plain title card has printed lettering (such as the title of the show, the name of performers, producer, etc.), with no pictorial background. Rich, deep color backgrounds with light Lettering make reading easy.

The combination title card has lettering against pictorial information for the background. The picture may be either artwork or photography. The lettering may be either on the card itself or on an overlay.

Super or Key Card

Normally you should avoid white lettering on a black background, because the contrast is too great between the two. But when making a super or key card, the lettering must be white and the background black.

During the showing of a super, or key, the card lettering is superimposed (electronically placed) over another background (or over another picture) from either another camera or from a film chain camera. This technique is an accepted form for placing the name of the subject on the air while the subject is talking. Use simple, bold letters only, and try to restrict the amount of information on the super/key card. Be careful in planning the card, you must consider how two camera shots will look in one picture. Lettering should be placed in the lower third and centered on the picture so as not to obstruct the background and/or the main action. The super is the only time you should ever use two divergent shades, i.e. off-white and/or off-black.

Chroma Key Card

The chrome key card is similar to the super card, except that the background for the lettering is usually blue instead of black, and the letters are imprinted on the card. The background of the card may be any color. However most TV production houses/TV stations use a chroma-blue background color because it makes skin tones appear natural and suppresses picture distortion.

Through electronic means, the chroma-blue background becomes totally transparent during the matting process, only showing the lettering (usually white or yellow). The camera picture from the second camera shows through without interfering with the foreground image. The chrome key matting process appears to the viewer as a rear screen projection, i.e. the picture is keyed (shown) behind an announcer or is a boxed support graphic inserted alongside the announcer. The video source may be a film chain, VTR or a live TV camera shooting a studio card.

Slides

Slides are televised from a remotely controlled projector directly into a small television camera connected to the projector. The slide is then inserted on to the screen and becomes part of the set with an announcer speaking over the slide, or it's used as still photo. Slides are most often used and preferred over studio cards since they do not tie up a studio camera and may be easily changed.

When using slides, it's important to keep all pertinent information within the essential area. The projected picture area of the slide must conform to the standard 3 x 4 television format. In other words, use only horizontal slides, not vertical slides. Ideally, all TV cards should be made into slides. This cuts down on storage space and keeps cards from becoming dog-eared through handling. However, detailed and complete artwork such as maps, logos, insignias or graphics covering common subjects should be saved for future use.

Maps/Charts

Maps and charts are also important visual aids for television programs, especially newscasts. Using simplified drawings, details should be limited to the essential areas. For example, to emphasize a whole area, such as the state of Colorado on a map of the United States, retrace the borders and then darken the state area with green or blue tints. Charts should have as little written copy as possible. Maximum clarity with minimum essentials must be your chief objective.

Character Generator

When you have a lot of printed information to get across such as names of individuals, sports scores or closing credits, the best and easiest way to do it is with a "character generator." The character generator is an electronic "graphic" system that has been used extensively in closed circuit and broadcast television for several years. The special-effects device creates letters and numbers in a variety of sizes and "fonts," or letter styles. The layout of the solid-state keyboard is similar to a typewriter or computer with the addition of several functions and operating controls. Information may be entered into the character generator from a keyboard and stored on a floppy disk or tape. Since the letters may be placed anywhere on the screen. A "cursor" (electronic location indicator) allows you to move the information anywhere on the screen (Figure 1-5).

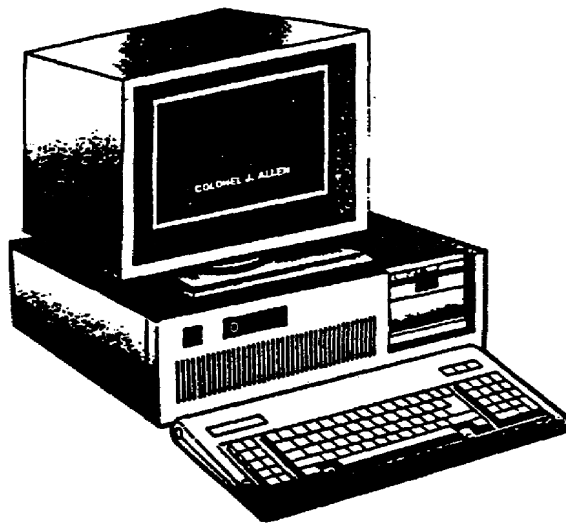


Figure 1-5
Character generator

Some of the more advanced character generators feature 14 to 16 lines of 32 characters within the full-screen scan area, line-by-line memory recall, automatic centering, word flash, word or line underline, stand alone titling, titling over video, and two-speed roll, or crawl, through all or part of the memory. Through a colorizer, the letters may be programmed in various color arrangements. Optional features permit mass storage on floppy disk of character displays, for easiest recall at any time for a key or matte key insert. You may find the character generator to be a lifesaver as a quick means to display information, i.e., sports scores, title credits, departure times, weather information. However, it should not rule out the use of other graphic support materials available.

Computer Graphics

Computer graphics are the newest part of the technology that's available today for the television industry. Basically, the system works like this: An electronic picture is recorded on tape from a television camera, slide projector, videotape, magazine, still photo, or a studio camera. The artwork is then converted and stored in a digital code format. The computer system then converts them into electronic pictures. The computer can recall any graphic stored on the disk within seconds by random access. The graphic artist then paints/draws a picture, using an electronic pen (brush) and palette, and may add material, delete information or change the colors of the picture or letters at will and while "on-the-air". The more advanced computer graphic systems have more colors and can produce more animation.

Before this, and as stated earlier, the artwork had to be transferred into photographic slides that were filed for possible future use. Valuable time is lost changing the artwork on these slides and Just trying to locate them may be a big problem in a large television station that uses many graphics (Figure 1-6).

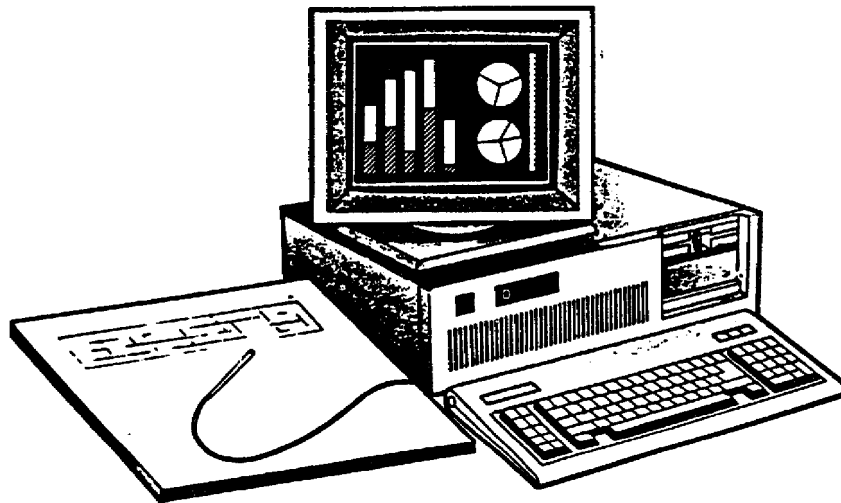


Figure 1-8
Computer graphics

PREPARATION TECHNIQUES

Regardless of the format or purpose of your graphic, there are a few musts, or fundamental aesthetic considerations to be made while planning. Simplicity, contrast, balance and composition are the keys to a good graphic layout.

Simplicity

The old adage "KISS" or "Keep It Short and Simple," is best when making or creating graphics. Your graphic should be easily recognizable and uncomplicated. Don't make the viewer work too hard to understand what he's seeing. People normally will ignore a visual with too much lettering. Use bold lines and lettering, and keep colors to a minimum, preferably white or yellow.

All copy or lettering must be readable. Fancy lettering may look good on paper, but might not permit the viewer to understand what you are trying to convey. After all, we don't use lettering unless it is necessary, and if it is necessary, the audience should be able to read the information. Example: Don't use Gothic fonts when reporting about Miami. However, Gothic lettering may be appropriate for a story on old Europe.

Sizing of the subject in the picture also is important. Keep the primary subject somewhat large within the picture that you are framing. Don't make the viewer have to strain to read or see the subject. A good type size may be about a half-inch in height on a 19-inch monitor.

Contrast

High definition, or contrast quality, is important for reproduction over a television system. Contrast in visuals should be sharp but not excessive. Avoid large areas of white, because such high intensity light will cause the pickup tube(s) in the camera to transmit glitter and flair, especially during camera movement, and may introduce audio noise into the video picture.

The human eye can identify about 100 different shades of gray. The TV camera clearly identifies only about ten shades. Since the brightest area can be no more than 20 times as bright as the darkest area, you'll have to be careful about using pictures and graphics that have high contrast. It should be noted that "TV white" is not really white at all. Pure white will reflect 100% of the light shone on it. TV white has a reflectance value of only about 60%. TV black is actually dark gray, reflecting about 3% of the light.

You also need to consider how color will appear on a black and white (monochrome) TV set. Color material will appear as shades of gray on a monochrome TV set, and must be used according to its gray scale value. The best way to test colors is to check them with a color TV camera and color television (monitor) that is correctly set up. You'll find that brown, purple, dark blue and black appear black on a monochrome TV; red, medium blue, and medium green appear dark gray; light blue, chartreuse, gold and orange appear light gray; pastels, bright yellow, light gray and tan appear almost white.

Even a color television system acts as a filter--it only sees a portion of the hue (color itself) and saturation (color strength) that the human eye can see. Most color cameras have trouble with the colors red and orange. Saturated colors cause excessive video noise or color stretching over the whole screen. Stripes or color banding may also show up as color vibrations, disrupting the picture. Stay with basic, solid colors, primarily blues and greens, and avoid supersaturated reds and oranges.

Studies have noted that color may influence our judgments of size, weight and temperature, and even affect our psychological state of mind. Colors are viewed as "high energy" or "low energy." Cool colors are considered low

energy; warm colors are termed "high energy". Make sure that you avoid using two colors that have the same value on the gray scale.

Balance and Composition

When designing, balance and composition are also important points to remember. For full screen graphics, make sure the design is balanced and aesthetically pleasing to the viewer. Note that certain lines and shapes have different effects on the mind. Visualize the final, on-air picture. Will it be well composed and balanced (Figure 1-7) ?

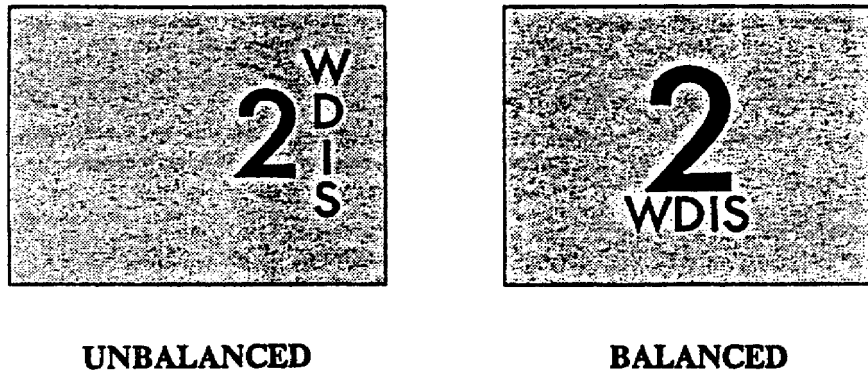


Figure 1-7
Balance and Composition

When designing chroma or mono (black and white) key graphics, be aware of the technical requirements of color, intensity and final composition. Is the position correct for the over-the-shoulder key? Seldom if ever would you use an over-the shoulder-key. Will the name or information be superimposed over the announcer's or guest's face? When using maps or charts for weather reports or special programs, keep the detail to a minimum. The viewer doesn't need to see the small towns or roads to get the message. (By the same token, some productions overdo and overuse graphics...going from one map to the next before the viewer can comprehend the information.)

Lettering

When letters are made too small or too thin, they will not be seen. A general rule of thumb is not to offer letters smaller than 15 to 20-percent of the essential area. If the visual is too "busy," or includes too much material, it will probably be distracting to the viewers. Five or six lines

of 15 to 20 characters is considered to be the most a viewer can handle at one time. This permits the use of a lettering size that is easily legible. Boldness of type also is important. Large letters are especially important for color television since the limited resolution (seeing) power of a color distribution system will not reproduce detailed artwork or small print work well. Thin lines may not appear clearly on the television screen. Irregularity of lines in a drawing are intensified when the camera shows a close-up. This also points up the need for simple fonts.

Do not use glossy inks or prints except for special effects. A glossy black, while appearing black to the eye, may pick up light reflection and transmit through the television system as a white, or near white. The television camera is sensitive to light reflections, and a smooth hard surface will reflect more light than a rough, dull surface. Another point to remember is to use only matte photographs whenever possible. The glossy prints, while appealing to the eye, usually cause problems for the camera.

There are many shortcuts for television lettering, such as the Leroy lettering pen, acetate templates, spaghetti (menu board), or paper and plastic letters that the artist may lay out and rub, or glue, onto the artwork. Transfer letters are available in hundreds of typefaces, many of which are used effectively on television. Some typewriters have oversized type, called bulletin board type, used for small visuals. Flat artwork and hand lettering may be done with opaque paint or, in some cases, with professional felt-tip pens. Almost any form of lettering device can produce a good television visual if proper contrast and layout are observed. Large colored areas generally are illustrated with colored paper or overlays. Make sure that you use a matt surface to prevent glare.

Background materials for slides may be selected from pictures in books, magazines, calendars, postcards, greeting cards, and wallpaper samples (but, be careful of copyrighted material). By printing your information on acetate (clear plastic, such as document protectors), you can then place the plastic overlay on top of the background material, and photograph both together.

When you prepare artwork for supers, or key effect, use black letters on a white card. The photographic process reverses the polarity of the artwork and allows you to use the film negative with the black background and the white letters for-your "super" slides.

Handmade letters may be made from a lettering book by making a paper copy (enlarged if necessary) and tracing the letters on the back of bright colored paper, and then cutting them out and placing them on a background. This allows more variety in color and letter styles.

METHODS OF PRESENTATION

There are many ways to present visual information in television productions, several of which we have already discussed. Other methods include:

Still Pictures

The flat or still picture was extensively used in early TV productions. They were any size according to production needs. Maps on walls or large "poster type" drawings are considered to be stills, the same as the smaller 11 x 14-inch cards. Stills were shot "live" in the studio with a TV camera using the 3 x 4 aspect ratio. Today, most stills are stored on slides, videotape or in a computer graphic system.

There are several instant cameras that use 3 1/4 x 4-inch in size, using color or black and white instant film, print and negative combinations, and transparencies. This method in the past was a popular means of acquiring fast visuals for television. Some of the instant cameras offer plastic frames for mounting transparencies. These work well on rear screen projectors, light boxes, and on flip cards that may be used during productions. Pictures may be taken of an event and shown immediately in lieu of videotape or as a support graphic, although best overall reliability is still the 35mm slide, videotape, or artwork. In addition, rear screen projection enables a variety of background settings in other types of productions.

The 8 x 10-inch transparency may be useful in small studio facilities that do not have videotape available. The 8 x 10-inch transparency can be made through a photo lab or graphic aid shop. The transparencies are shown in a device called a "light box," which needs only a low-wattage bulb and a good piece of frosted plastic or glass to diffuse the light. This same kind of transparency may be used on an overhead projector for either a frontal or rear projection screen. Either way will work for television. However, with the advent of more advanced graphic systems, these formats (rear screen projection and light box) are not used that much in television anymore, and are only mentioned here to let you know that they exist and may be used.

Drop cards

You'll find that the character generator, in large facilities, is predominantly used to support a substantial amount of lettered or numbered information. However, drop cards or flip cards are often

used as a main means of graphic support. The principle is the same as that of loose-leaf binders, except that the ring binders are mounted horizontally on a board or easel. The ring perforations are made through the bottom edge of each drop-out card, and at the top of each drop-in card. Drop-in cards seem to fall "into" the camera shot and appears on the screen. Drop-out cards appear to fall "out" of camera range, and they seem to disappear from the screen (Figure 1-8).

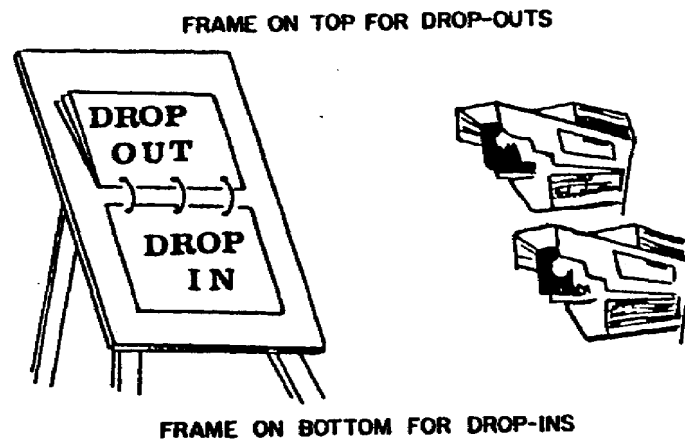


Figure 1-8
Drop cards

When you place cards on the stand or easel, make sure they are parallel to the camera. Otherwise, the information will look as if it is running uphill or downhill on the screen. Shooting off-axis produces "keystone" distortions, e.g. when the viewpoint is too high or shot from the side. If the lettering runs uphill (high on the right), rotate the easel clockwise.

If the lettering runs downhill (high on the left), rotate the easel counterclockwise (Figure 1-9).

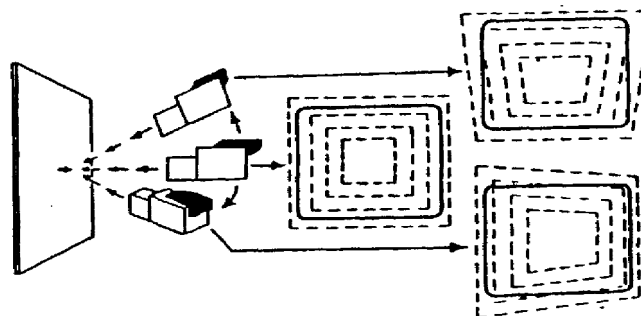


Figure 1-9
Shooting graphics

Storing or cataloging visuals

It is important to be able to prepare graphic material; but equally important, you must be able to find it promptly and keep it in usable condition. You need to provide adequate storage and care for them, and you should know where they are at all times. As stated earlier, standard-size studio cards and the slightly smaller 8 x 10-inch transparencies fit well in legal-sized file folders/cabinets. Larger items will require special shelves and bins to allow them to stand upright. If the dividers of the bins are only about 6-inches square, the chance that the cards will get that "bent" look is reduced.

Regardless of your duty location, all production aids that you receive--station identification (ID) slides, weekly news service slides provided by a commercial vendor, and 8 x 10-inch prints, just to mention a few--are not accountable items. They should be retained however and filed for as long as they are serviceable. Color slides should be stored in special trays and cabinets designed for them.

No matter where your graphics are stored, keep an up-to-date index of the items. A type of cross-indexing is suggested. Slides should be filed by subject numerically, and caption index cards (also cross-referenced) should be filed alphabetically.

Graphic supports

There are several types of graphic supports. They are (Figure 1-10):

1. The caption stand (tiltable shelf, adjustable height) suitable for title cards.
2. The card pulls (tabs) are attached to edges of cards to make removal easier.
3. The title card box is used when you want to reveal the next title by pulling a card out of the box.
4. The strapeasel is used for larger graphics. Weighted webbing straps adjust to all sizes.
5. Flat displays use various graphics of different sizes.

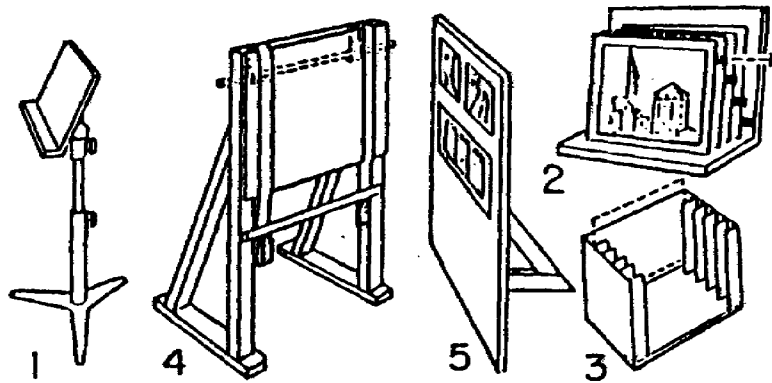


Figure 1-10
Graphic supports

Types of graphs

A graphical presentation enables information to be assimilated and compared rapidly. Several formats are available, having greater visual interest than a routine line-graph (Figure 1-11):

1. Multisurface or strata graph
2. Column graph
3. Combined column graph
4. Bar graph
5. Sector, pie or circle chart
6. Volume chart, height chart, area chart

7. Pictogram pictorial chart
8. Pictorial symbols
9. Flow chart

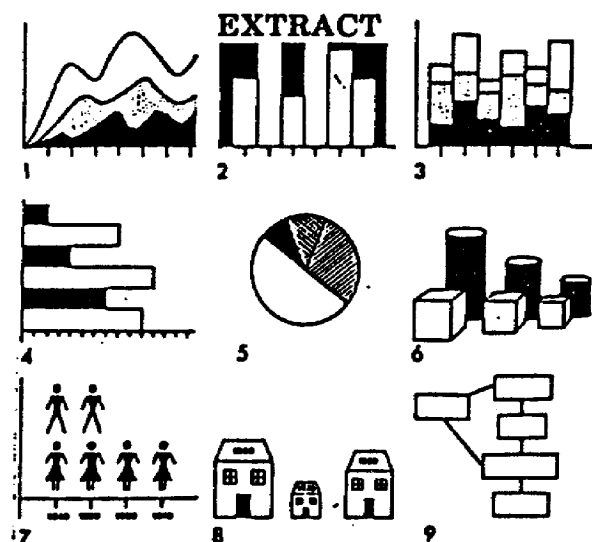


Figure 1-11
Graph charts

Animated graphic-flips: (Figure 1-12)

1. Title cards in ring binders, flip into shot (drop-in); or bottom hinged flip-out (drop-out). Margin finger-grip tabs aid operation.
2. Flip-over--double-faced title-card horizontally pivoted.
3. Flip-round.
4. Rotating flip.

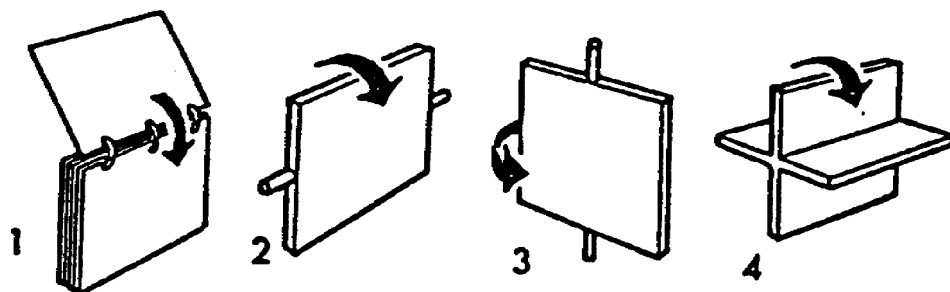


Figure 1-12
Flip-cards

Pull-outs (reveals): (Figure 1-13)

1. Top card is slid aside to reveal the next.
2. Black slide-out section in black card, reveals titling underneath.
3. As each black card is pulled, titling on the clear sheet beneath is revealed.
4. Slide provides push-over wipe effect.
5. Shutter slide aside to reveal new information below.
6. Breakaway, where the top graphic splits (slides apart or hinges) to reveal another.

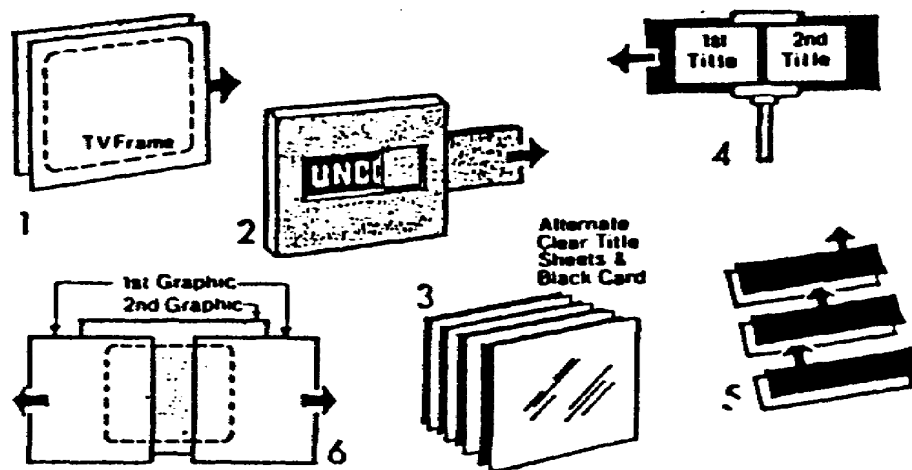


Figure 1-13
Reveal graphics

Animated graphics-rotates: (Figure 1-14)

1. Turntable
2. Flop-over or vertical slide
3. Rotating box

4. Rotating strips

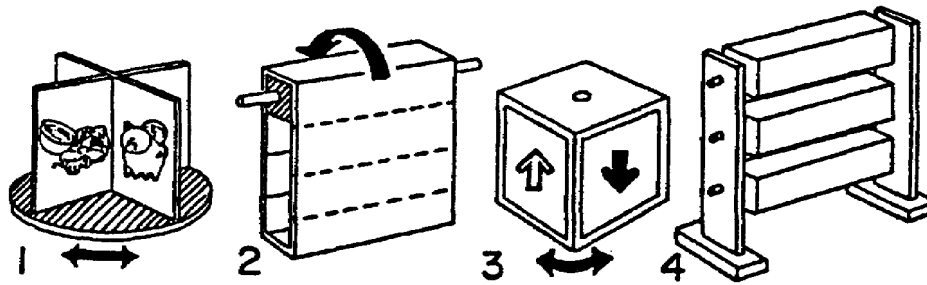


Figure 1-14
Rotating graphics

Animated detail: (Figure 1-15)

1. Rotating and sliding sections
2. Hinged or pivoted sections
3. Pull-out reveals
4. Rear illumination

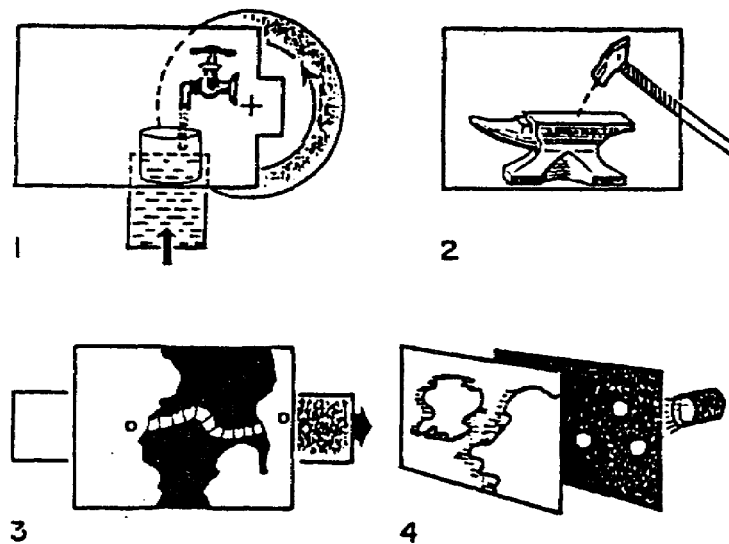


Figure 1-15
Animated graphics

PRACTICE EXERCISE

LESSON #1

**TELEVISION GRAPHICS
for
BROADCAST JOURNALISTS**

SUBCOURSE No. DI0390

INSTRUCTIONS:

Review the material in this lesson. Answer all the questions below by circling the "T" or "F" next to each question. Compare your answers with the answer key on the next page.

- T F 1. Visuals or graphics for television are categorized into two specific areas.
- T F 2. The standard size for studio cards is 11 x 14-inch.
- T F 3. The character generator is a type of graphic system.
- T F 4. Studio cards are preferred over slides.
- T F 5. In lettering, "looking good" is the most important consideration.
- T F 6. The television camera sees less than the eye.
- T F 7. Gloss inks and prints are acceptable for special effects.
- T F 8. Drop-in cards seem to disappear from the television screen.
- T F 9. Caption index cards should be filled numerically.
- T F 10. Slides should be filled alpha-numerically.

ANSWER KEY

PRACTICE EXERCISE

LESSON #1

SUBCOURSE No. DI0390

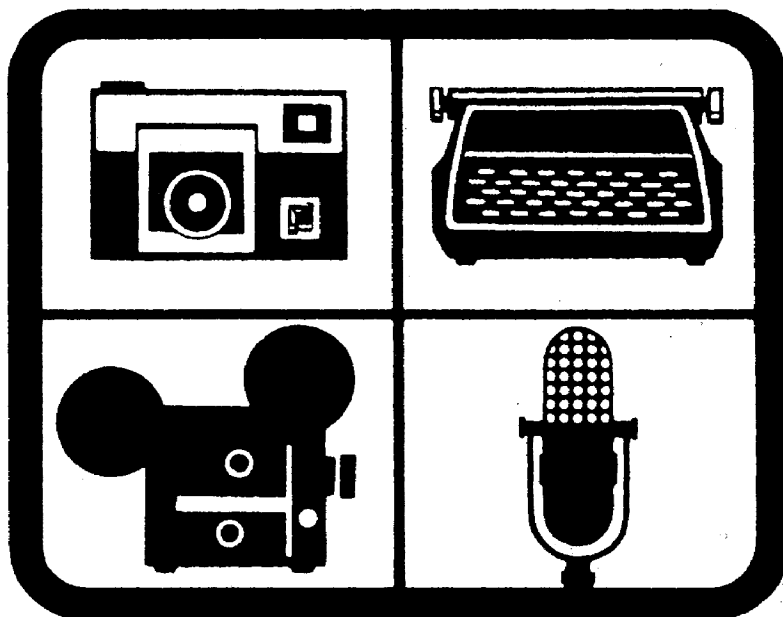
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**SUBCOURSE
DI0430**

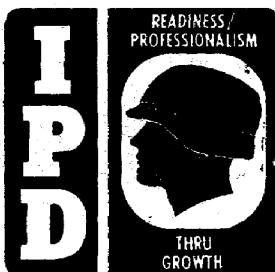
**EDITION
A**

ADVANCED BROADCASTING

PUBLIC AFFAIRS



**THE ARMY INSTITUTE FOR PROFESSIONAL DEVELOPMENT
ARMY CORRESPONDENCE COURSE PROGRAM**



ADVANCED BROADCASTING

Subcourse Number DI0430

EDITION A

US Army Public Affairs Proponent Center
Fort George G. Meade, Maryland

5 Credit Hours

Edition Date: September 1990

SUBCOURSE OVERVIEW

This subcourse, containing three lessons, introduces broadcasters to an advanced level of understanding when producing radio features, conducting audience surveys and determining radio music formats.

You must have a basic knowledge of military broadcasting prior to taking this subcourse. There are no other prerequisites to this subcourse; however, it is suggested that broadcasters with limited experience complete the basic broadcaster course before taking this subcourse.

This subcourse reflects the doctrine and technology current at the time it was prepared. In your own work situation, always refer to the latest publications.

Unless otherwise stated, the masculine gender of singular pronouns is used to refer to both men and women.

TERMINAL LEARNING OBJECTIVE

ACTION:	In this subcourse you will learn how to produce radio features, conduct audience surveys and determine a radio music format.
CONDITIONS:	You are given the material presented in this lesson.
STANDARD:	To demonstrate competency of this task, you must achieve a minimum of 75 percent on the subcourse examination.

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LESSON ONE

PRODUCE A RADIO FEATURE

46R Soldier's Manual Task: 214-177-2003

OVERVIEW

LESSON DESCRIPTION:

This lesson provides an overview of radio feature production.

TERMINAL LEARNING OBJECTIVE:

ACTION: Describe procedures necessary to properly produce a radio feature.

CONDITION: You are given the material presented in this lesson.

STANDARD: Perform all the duties described in this lesson.

REFERENCES: The material contained in this lesson was derived from the following publications:

STP 46-46R14-SM-TG Soldier's Manual & Trainer's Guide, Broadcast Journalist, MOS 46R Skill Levels 1/2/3/4, August 1988.

Defense Information School Radio and Television Handbook, May 1982.

PRODUCE A RADIO FEATURE

INTRODUCTION

A feature is a program, or segment that explores, explains or demonstrates a noteworthy subject in an imaginative and colorful manner. The feature should be factual, avoiding editorial points of view. It may be similar to a documentary but is shorter and not quite as detailed. Feature programs are useful for presenting interesting but generally little-known information.

In radio you are primarily responsible for all stages of feature production. In commercial radio, particularly in smaller markets, the station's disc jockeys are also responsible for producing features. The same thing usually applies in the military. Once you are assigned a production, the whole process, from researching the subject to putting it on tape, belongs to you.

ELEMENTS OF RADIO

There are three main elements of radio you will use in the production of radio features: music, sound and voice. You must understand what they are and what purpose each of them has.

Music

Music is used to set a production's mood. It can create a feeling of excitement, tranquility, suspense or sadness.

There are basically four types of music that can be used in audio production. They are theme, background, bridge and fill.

Theme. Theme music is intended to make people associate the music with something in particular such as a character, a theme, or an idea. "Thanks for the Memories," brings Bob Hope to everyone's mind. It's his theme song. It's a good example of what theme music is intended to do. It also illustrates why you don't want to use music that has already established itself with something else. It will put the audience's mind on the other thing, and thus distract from your message.

Background. Background music is used to help set the mood of the feature and increase audience appeal. A voice-only production can be very boring, especially if it's just one voice. For example, a few strains of dramatic fanfare might heighten listener anticipation of a story climax. On the

other hand, light, melodic music could be used to support a comical subject. There is instrumental music to fit almost any mood. It's just a matter of listening to the selection, perceiving the emotion or mental image it creates and matching the appropriate mood to your subject.

When selecting music for background, instrumentals are preferred over music with vocals. Vocal songs tend to distract the listener from the message of the production. Vocal music may be used only if it contributes to the message. If vocals are used, level balance becomes critical so that the music does not override the message. Background music should be unrecognizable and match the subject. By adding the right background music, you add to the aesthetic appeal of the feature.

Bridge. The purpose of this kind of production music is to connect or "bridge" two ideas or thoughts together. Bridge music, also called "transitional music," was used in radio theater to change the scene. A short instrumental fanfare can signal a change in topics. Or, a new scene can be introduced with a short musical theme that suggests a particular location.

Fill. This type of music is often called "pad" and is usually an unrecognizable instrumental song. If your feature production is required to be a certain length, fill music can be used to eat up time at the end. This also allows the person airing the production an opportunity to gracefully transition to the next program element with less chance of lapsing into dead air.

Sound

The use of sound and sound effects works much the same way as music. Its purpose is to enhance the spoken word. Creative use of sound can help develop a vivid picture in the mind of the listener. The success of an audio production often depends on the mental picture conjured up by different sound effects.

A good example is the spot campaign produced for the Radio Ad Bureau promoting radio advertising. By using sound effects, the producer created a visual picture in the listener's mind that showed radio's versatility by doing such things as draining Lake Michigan and filling it with chocolate and then topping it off with a 750-foot mountain of whipped cream and a 10-ton maraschino cherry. This versatility is unique to radio production and is limited only by your imagination and ability to locate or create sound effects.

There are three types of sound in audio production: real, simulated and prerecorded.

Real. Real sound effects are produced in the studio using the actual source, papers shuffling, scissors, etc. The limitation is in the availability of the particular item to make the desired sound.

Simulated. Simulated sound effects are those that don't recreate reality, but merely suggest it. Crinkling cellophane can suggest a camp fire, and running your thumb across the teeth of a comb can suggest casting a fishing line.

Prerecorded. Prerecorded sound effects are those that are available on tape, record or compact disc. There are two types of prerecorded sound effects: those that create a sound picture, such as a city street or factory; and those that create individual sounds, such as footsteps, a door opening and so forth.

When using prerecorded sound effects, a broadcaster is limited to those recordings available in his station's record library. One thing most prerecorded sound effects have in common when found in record libraries is that they sound like old, much used, scratchy records. That's something the advent of the CD has taken care of. If you have prerecorded sound effects on vinyl discs, and they are old and have the scratchy sound, it will severely limit the quality of your productions. Faced with this problem, it may be to your benefit to try to record your own sounds and sound effects.

Voice

Voice is the essence of most radio productions. It's the voice that conveys the message. Each announcer interprets copy according to his style of delivery, and the type of delivery needed to effectively communicate the message. Voice characterizations may be used if it is appropriate to the production, but be very careful that the characterization is realistic and well done.

PREPRODUCTION

The preliminary steps of a feature production are usually called "preproduction" steps. As the name indicates, they are those steps taken before you actually get into the production phase of the feature.

Gather and Audition Supportive Elements

Gather all supportive elements called for in the script and audition specific music and sound effect cuts to make sure they are appropriate to the production. Of course, you'll want to be sure nothing violates the rules of SAPP (Security, Accuracy, Propriety, Policy). If music is used, it should convey a mood that enhances the production's objective. If sound effects are desired, they should support the theme of the production. If vocals occur in background music, make sure they are necessary to convey the production's objective and not distracting to the listener. Audition sound effect and production music cuts for technical merit to make sure they meet local broadcast technical standards.

Gather Supportive Actualities

Whenever possible, use actualities. You use the voices of the news makers to add credibility and interest to your news products. Why not adapt actualities for use in almost all styles of features, most notably, the news or personality feature? Remember, we as military broadcasters are more tuned toward getting the story told by those involved. The message is more important than the messenger.

Determine Length

You must determine the length and format requirements of the finished program. These will, of course, depend on the subject, and where the finished production is slotted to air. Much of the time, these will be determined for you, but you must make note of them anyway.

Schedule Rehearsal Time

Whenever you have the opportunity, rehearse. An uncontrolled event such as a fast-breaking spot news story will certainly not allow the time for rehearsal, but usually a news feature will, and you should take full advantage of it. The more you do anything, the better you'll be able to do it, and rehearsing any production will enable you to work out any difficulties as well as point out where they may pop up unexpectedly. More rehearsals in as many productions as possible add to the experience level of each crew member.

Schedule Production Time

You must be prepared for each and every step of all productions, and the time to prepare is, of course, before the fact. One place where it's easy to fall short due to lack of planning, is in production time. Always be sure that you'll have use of needed equipment, such as an edit suite, when the time comes for you to use it. Be sure that someone else doesn't have it already scheduled.

Rehearse the Script

As previously mentioned, you must take full advantage of time to rehearse. Rehearse the script. Do it aloud. Besides confirming that it meets time requirements, that is the time to find out if there are any tongue-twisters, or difficult pronunciations. If another voice is called for, make arrangements for someone to be in the production and have copies of the script prepared for that person. Make sure the announcing style is appropriate for the subject.

PRODUCTION

Assemble Required Materials

The first step in the production phase is to assemble all the required materials. Once you begin to put things together, the most distracting thing you can experience is to have to stop to get something you forgot. It interrupts your train of thought. It requires additional time that may interfere with your schedule to the point that you won't be able to complete your production on time.

Check Equipment

Make sure all the required equipment is in good working order. Although this is best done in the preproduction phase, you must repeat it as an early step in the production phase as well. Just because it worked yesterday doesn't mean that it will be fine when you need it. Like assembly of materials, you must be sure you have assembled the necessary equipment in good working order.

Prepare Tapes

In order to prevent accidental airing of unwanted material, and to make cueing easier, bulk erase any production tapes you intend to

use. And in order to keep the production operation organized, label tapes according to local procedure.

Follow the Script

Unless you wrote the script, don't make substantial changes without the approval of the author. Besides being common courtesy, there exists a chance that you'll edit something out that was necessary to the content of the script. Follow it as it was approved.

Choose Production Mixing Technique

The mixing technique you choose will depend on two things: your preference and the equipment you have available. There are several acceptable methods available to you, and you are not limited to any particular one. Although you can use any one of them, or even a combination, keep it simple.

Beginning-to-end method. This method is not recommended for beginners. It takes many rehearsals and requires much skill and experience. It is simply recording all the supportive elements of the production onto tape as required by the script, non-stop. Thus the name, beginning-to-end.

Prerecorded-voice method. As the name indicates, this calls for prerecording the voice element. As the voice element is being played back for the master recording, other supportive elements are mixed in without stopping. This production method lacks flexibility for the narrator since it is nearly impossible to match script interpretation with any music or sound effects. Of the various methods available, this is probably the least used and definitely the least recommended.

Prerecorded-music and sound-effects method. A prerecorded-music and sound-effects method simply means the music and sound-effects are prerecorded and mixed to the master recording as the announcer reads the script. In this fashion, vocal mood can be adapted to the mood created by the other elements. This seems to be the preferred method.

Segmented method. This method involves dividing up the production into smaller, more manageable segments that can be produced independently and then edited together. This would be the most recommended method for the beginning broadcaster, since you can pay more attention to each little segment and then put together the more skillfully produced parts.

No matter which method you choose, you must constantly monitor audio levels. You must be sure they are appropriately balanced. Supportive audio (background music or sound) should not override primary audio (voice). Your recording level peaks should be between 80 and 100 on the VU meter.

POST-PRODUCTION

Once you have the finished feature on tape, you should check the final product for a number of things. They are:

- o time limits
- o audio levels
- o SAPP violations
- o air quality
- o free of errors
- o dirty edits

If necessary, re-edit any portion of the production that is incorrect or unsatisfactory.

Once you have satisfactorily completed the feature and it meets all requirements, you have one final step to take. You must deliver it to the appropriate approving authority. It might not hurt to retain a master copy until you're sure the need for the feature has passed and it has accomplished its task. With bulk erasers around your station there always exists the possibility of an accidental loss, and keeping that master copy on hand could prevent a disaster.

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PRACTICE EXERCISE

LESSON 1

SUBCOURSE DI0430

PRODUCE A RADIO FEATURE

INSTRUCTIONS:

Review the material in this lesson. Answer the questions below by circling the "T" or "F" next to each question. Compare your answers with the answer key on the next page.

- T F 1. There are three types of sound used in audio production.
- T F 2. There are two basic types of music used in audio production.
- T F 3. The assembly of required materials is a preproduction step.
- T F 4. Background music is used to help set the mood of a feature.
- T F 5. The production mixing technique will depend on personal preference and equipment available.
- T F 6. The beginning-to-end method is most recommended for beginners.
- T F 7. Actualities add no credibility to a feature.
- T F 8. There are four main elements of radio.
- T F 9. A feature is a program about personalities only.

ANSWER KEY

PRACTICE EXERCISE

LESSON 1

SUBCOURSE DI0430

PRODUCE A RADIO FEATURE

1. True (Page 4)
2. False (Page 2)
3. False (Page 6)
4. True (Page 2)
5. True (Page 7)
6. False (Page 7)
7. False (Page 5)
8. False (Page 2)
9. False (Page 2)

LESSON TWO

CONDUCT AN AUDIENCE SURVEY

46R Soldier's Manual Task: 214-177-3402

OVERVIEW

LESSON DESCRIPTION:

This lesson will provide you an overview of the conducting of an audience survey.

TERMINAL LEARNING OBJECTIVE:

ACTION: Describe procedures necessary to properly conduct an audience survey.

CONDITION: You are given the material presented in this lesson.

STANDARD: Perform all the duties described in this lesson.

REFERENCES: The material contained in this lesson was derived from the following publications:

STP 46-46R14-SM-TG Soldier's Manual & Trainer's Guide, Broadcast Journalist MOS 46R Skill Levels 1/2/3/4, August 1988.
Defense Information School Radio and Television Handbook, May 1982.

CONDUCT AN AUDIENCE SURVEY

INTRODUCTION

When your mission is to provide information and entertainment programming to a given audience, you must know their likes and dislikes when it comes to radio and television programming. There is only one way to accomplish that task. That is through an audience survey. Although there's no rule requiring an audience survey with any predetermined regularity, any station that wants to be responsive to its audience's wants and needs will conduct a survey to find what those wants and needs are.

This lesson examines the basic elements of a survey and the different types of surveys. It constructs a survey questionnaire and discusses how questions are developed. And it explains techniques for managing a mail survey and analyzing survey results.

SURVEY EXPECTATIONS

As a rule, audience surveys are a mystery to the uninitiated and a headache to broadcast journalists who have to conduct and analyze them. But if surveys are conducted properly, everyone associated with the station will know how well they are serving their total audience.

What can you expect from an audience survey? Suppose the station commander would like to know how many people watch the six o'clock news. Would you conduct a survey to find that out? That in itself is not enough reason to conduct a survey, but the commander should try to obtain as much information about the station's viewing or listening audience as he can.

An audience survey can provide valuable information in five main areas. They are:

- o determine the approximate size of the "potential" or "available" audience.
- o define the viewing or listening habits of the audience.
- o identify program or personnel changes that might improve your programming.
- o identify the demographics of your "typical" viewer or listener.
- o demonstrate the station's public image as a provider of information and entertainment.

ELEMENTS OF A SURVEY

There are two main elements of a survey: the problem and the population.

The problem is the big question or questions that you need answers for, and the population is the group from which you select people to give you those answers.

Let's go back to the original supposition that the commander wants to know how many people watch the six o'clock news. When putting this problem before the audience, the commander could indicate the purpose for the survey as "obtaining information concerning the listening or viewing habits and program preferences of our audience." The audience can then respond to a variety of questions. At the same time, the survey provides needed information for the station commander by also responding to specific questions concerning the six o'clock news.

SURVEY STEPS

Once you know the big question and have some ideas for other questions, you must follow a guideline to put your ideas into survey form. There are 10 basic steps in conducting an audience survey.

- o HYPOTHESIS: State the problem or state what you want to measure. Keep the wording to a minimum.
- o PLAN: Decide on procedures, type of survey, material and personnel.
- o SUPPORT: Get command approval to survey assigned personnel.
- o CONSTRUCT: Draft the questions and design the questionnaire format.
- o PRETEST: Administer the questionnaire in draft form to a small group to see if it yields useful responses. This step allows the surveyor to deal with problems of question wording, answer choices and interviewer procedures.
- o SAMPLE: Choose which people to survey.
- o PRINT: Incorporate any changes to the questionnaire which may have resulted from your pretest efforts. Duplicate the questionnaire in desired quantity.
- o COLLECT: Distribute the questionnaires/conduct interviews and gather the data.

- o TABULATE: Score the completed questionnaires then analyze and interpret the data.
- o REPORT: Report the survey results.

SURVEY TYPES

Whenever the word "survey" is mentioned, many people think of someone going door-to-door with a clipboard, asking questions. Although that is one way to conduct a survey, it is usually not very practical. In the military, the audience is normally spread out over a fairly large geographical area. We must keep that in mind when discussing the three types of surveys: telephone, personal or face-to-face, and mail.

Telephone

A telephone survey is often the first choice. There are several reasons why that method would appear to be attractive. A telephone survey:

- o is more economical than other types of surveys unless your survey would require many long distance calls.
- o simplifies the selection of the survey participants and there is less chance of bias.
- o is relatively easy and can be conducted from an office or home.
- o is the fastest way to administer the questions and obtain the necessary feedback.

There are also disadvantages to the telephone survey. It:

- o has to be short, and that might limit the amount of needed information you can obtain.
- o makes it necessary to train the people you will use to conduct the interviews, which requires extra time, and you can't always monitor the conduct of the interviewer.
- o limits the types of questions that can be asked and there is greater suspicion of questions involving personal matters.
- o makes it impossible to use exhibits such as lists of alternative answers which afford the survey participant a better chance to express his knowledge or opinion about the subject.

- o excludes anyone without a telephone. Surveying soldiers whose day-to-day activities place them in a field environment would surely be difficult to reach.

Personal

In the personal or face-to-face interview survey approach, the interviewer visits with the respondents at their homes or places of work. Some of these surveys are conducted on the street or in some public place such as a PX mall or commissary. As previously mentioned, these are usually impractical in the military, but they do have several advantages. Personal or face-to-face interviews:

- o offer the greatest flexibility in questioning methods and visuals can be used for aided recall or multiple-choice questions.
- o can be in-depth, thus providing a great deal of information from a single respondent.
- o allow better selection of participants so that it is truly representative of the entire survey population.
- o permits selection of participants to be more focused in its coverage when the need is to survey a specific area or specific segment of the population.

In addition to the previously mentioned difficulty with a population that is spread out over a large geographical area, as is often the case in the military, there are other disadvantages to the personal or face-to-face interview survey. Personal or face-to-face interviews:

- o may cost more than other survey methods, and you must weigh the cost against the amount of information obtained.
- o require more expertise in interviewing, more effort and persistence canvassing the population needed.
- o make selection of participants more exacting and time consuming.
- o are difficult to arrange because of duty requirements of the interviewer and the interviewee.

Mail

The most often used survey method in the military is the mail survey. This type of survey has some unique advantages. Mail surveys:

- o are easy to handle because they require no interviewer training or monitoring.
- o are without interviewer bias when the questions are properly written and evaluated.
- o generally cost less although cost can be deceptive because low response rates of return may require many questionnaires to be mailed.
- o make selection of participants easy since prepared mailing lists can be used.
- o allow for wide geographic coverage which makes the mail survey very attractive to station commanders.
- o offer the opportunity for more candid replies to questions which may be embarrassing to answer in a telephonic or personal interview.

Mail surveys also have some disadvantages, in that they:

- o limit selection of participants to the available mailing lists (letters can be addressed to "occupant" or "resident," but these usually leave a negative impression with the respondent).
- o usually have a low response rate, which may skew the results (those who don't respond could be much different than those who do, and when the non-respondents make up 50 to 70 percent of the audience, distortion can be serious).
- o require questionnaire length to be held to a minimum, usually no more than two pages.
- o use relatively simple questions, thus eliminating the opportunity to probe for meaningful replies. There is no way to prevent replies from being influenced by subsequent questions, since the respondent can read ahead before replying.
- o prevent knowing if the selected participant was actually the person who completed the questionnaire.
- o takes longer to conduct.

There are no hard and fast rules to tell you which survey method should be used. You must weigh the circumstances which are peculiar to your station and situation before deciding. In the military, you will most often use the mail survey.

Focus Group Interviews

An alternative to conducting a mail survey is the focus group interview. Focus group interviews are structured group discussions in which representative members of the audience are brought together to discuss one or more command information products or issues.

The respondents (usually 15-20 people) are selected randomly in the same manner as in a longer formal sampling. Basically, the procedure involves five steps.

Selection. As usual, local military personnel offices are used to identify respondents on a random basis. In order to make sure there is an adequate breakdown by rank and age, 20 to 30 names should be drawn. The end result would be a panel consisting of no more than 20 people.

Format. The key to effective group interviews is planning. Focus group leaders must determine the special objectives of the session (i.e., what is to be surveyed, what specific questions will be asked). Respondents should be told in advance the purpose of the group survey.

During the interview, the panel is led through the different subject matter categories. Three hours should be enough time to conduct the interview. At least three additional people should be present to record the responses.

Content. Content is the interviewer's primary responsibility. Subject matter should be allowed to drift somewhat with the normal flow of the group's interaction. However, there should be some boundaries established. When these limits are reached, the interviewer should redirect the discussion by simply providing transitions from one subject area to another.

Recording/coding responses. In addition to the written observations of the three recorders, it may be useful to tape the entire interview.

In making notes on the reactions of various respondents to particular issues, interviewers must pay close attention to non-verbal cues as well as looking for depth of feeling. These areas do not come across as well on a tape recording. However, after the interview, the interviewers (recorders) go through each point covered during the interview and try to reach a consensus on what was expressed by the group. If there is difficulty, the audio tape is used or other people may be consulted.

Using the data. Often, it will be necessary to hold more than one focus group session to obtain information needed to evaluate a

particular command information program or product. In view of this, it would be unwise to jump to any conclusions based on the results of one interview.

If a point comes across strongly and suggests that a change is called for, more questioning should be carried out before decisions are made. Before a decision is made to change some existing policy or format, it should be tested on a certain audience or a representative segment of that audience. After gradual implementation, negative response can be picked up immediately.

The value of information gained by using this method increases as the process is repeated. If a finding holds up throughout a series of these interviews, and throughout the audience, it could be looked at as being statistically valid.

CONSTRUCTING A QUESTIONNAIRE

Putting together a questionnaire can be a lot like putting together a puzzle. Once you get started in the right direction, the rest of the pieces fall into place.

There are basically two types of questionnaires, sometimes called survey schedules:

- o self-administered
- o interview-administered

Just as the names indicate, the respondent fills out his own on the self-administered one and on the interview-administered one, someone else does it. The main difference in the two is that with the self-administered one there must be directions for the respondent to follow.

MAKE IT EASY

If there is one specific rule common to all surveys, it's to make it easy for everyone involved. Thinking ahead, you should ask yourself questions like: Who will answer these questions? How will the responses be recorded? What do we really want to find out? Use this information to construct your questionnaire and to formulate the questions.

Most questionnaires are printed on standard sized paper or on 5" x 7" answer choice cards. It's always good to print about one-third more questionnaires than you'll need. The overage can be used for training interviewers, providing sample copies, spoilage and lost copies.

MAIN PARTS TO A QUESTIONNAIRE

Generally there are three main parts to a questionnaire, each designed to acquire a specific type of information: identifying information at the beginning, questions about the survey's subject in the middle and questions which ask for demographic information about the respondent at the end.

The identifying information usually includes the name or title of the survey. It allows the respondent to quickly identify what the survey is about. This is usually followed by a statement of the general purpose of the survey and the confidential nature of the responses.

You may also find the address of the sponsoring agency, the date completed and the questionnaire number in this first part or on a cover letter, if there is one. The address of the sponsoring agency allows the respondent a chance to refer to the station for results. The date is necessary to determine if there were any significant events that might have occurred which may have influenced responses. The survey number is useful in sorting questionnaires, sequencing the collected data and distinguishing data from different areas.

TYPES OF QUESTIONS

The most difficult and important part of the survey is developing the questions. Extracting factual information is much easier than getting a true measure of opinions. You have several choices as to the kinds of questions for finding out how much someone knows about a subject. Each has certain advantages and disadvantages.

Open-End

Open-end questions allow the respondent to answer questions in his own words. While giving the respondent a maximum opportunity to express his viewpoint, you are confronted by the problem of trying to categorize the responses from many people. This takes more time and increases the chance for error when recording the answer. Sometimes people don't remember or know how to correctly express certain facts.

Checklist or Multiple Choice

These questions give the respondent a selection of possible answers. All he needs to do is select one or more, depending upon the question. The biggest advantage here is that the respondent can be reminded of possible answers he might have otherwise overlooked. In most cases it is wise to have an "other" category where the respondent can indicate a choice not given in the list. This is particularly helpful in pretesting possible answer choices

to determine if any have been left out. A large percentage of "other" responses would indicate this.

Dichotomous (divided into two parts)

Dichotomous questions are questions of the "yes/no" or the "true/false" types. With these, you should also use "not sure" or "don't know" so the respondent is not forced into a decision if he is uncertain. Often this type of question is used as a qualifier. If the person answers "correctly," he is then asked to answer other questions about that particular subject. For example, you wouldn't expect answers about the presentation of the news if the respondent indicated that he didn't watch or listen to it.

Rank-Ordered Questions

Sometimes it is useful to have people indicate some kind of preference or perceived importance for the items. The respondent is given a list of items and asked to assign a rank (1, 2, 3, etc.) to them. This would be useful in ranking audience preference for different types of radio music shows or TV programs.

Agree-Disagree

Measuring opinions can be accomplished by using different types of questions or statements. The agree-disagree approach asks the respondent to indicate whether he agrees, disagrees or has no opinion with regard to the statement. Here, too, you need a "don't know" category.

Opinion Scales

These are usually three, five, or seven point scales that can be used to measure the intensity of feeling about a subject. For example, you might ask the respondent to indicate how important he feels various sources of news are to him. Each source could be rated as follows:

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- o very important
- o somewhat important
- o so-so
- o somewhat unimportant
- o not important

The scale would be listed at the beginning of the section, followed by questions asking the relative importance of each listed source of news. Sometimes you may wish to condense such questions into a three-point scale such as, important, so-so, and unimportant.

Most of the time you will find it necessary to use several different types of questions to obtain the needed information. However, there are some basic things to remember about the wording of all questions.

WRITING THE QUESTIONS

Questions should always be as concise as possible...the shorter, the better. Simple words that are familiar to the respondent will help you achieve this. Any technical wording or jargon should be avoided, replaced or explained. The questions should generate exactly the information desired and in terms that would assist tabulation and statistical analysis. A common error often made is that of overlapping categories. A prime example of this is when a person is asked to check his age category and is confronted with choices like: 18-20, 20-22, 22-24. Which age group would you choose if you were 22 years old? Also, how would we know how many in the 20-22 age group actually belonged in the 22-24 group?

Another problem area is that of multiple-meaning questions that are confusing to the respondent and deny the surveyor a chance to clearly interpret the responses. An example of this would be: "Which medium is best for news and entertainment?" The question should limit itself to news or entertainment, not both.

Leading questions are those that are worded in such a manner as to suggest an answer. "Would you say that you are in favor of more radio news?" is leading. "How would you evaluate the amount of radio news now offered by XYZ radio?" is not leading. Don't ask leading questions.

Catchwords or words with emotional connotations should be avoided. Words such as "conservative," "liberal," "feminist," etc. elicit strong feelings that influence how a person will respond.

When feasible it is sometimes good to use check questions. These are two questions worded differently, placed in different parts of the survey that bring out the same fact or opinion. They are used to bring out the internal consistency of the responses. "What is your favorite FM show?" and "Do you listen to FM radio broadcasts?" would serve that purpose.

QUESTION ORDER

The order of the questions is very important. They should be arranged in a logical manner that will avoid confusion and misunderstanding. Things to remember when arranging your questions:

- o Keep the knowledge and opinion questions separate.
- o Keep questions dealing with similar subjects together.
- o Specific questions should come before any general questions if both types are used.
- o Opening questions should be easily answered. They should be interesting and make the respondent want to cooperate.
- o Questions that might embarrass the individual should be at the middle or end of the questionnaire. Sensitive questions should be grouped with less-probing ones.
- o Demographic questions are placed at the end of the questionnaire. The demographic section asks the respondent to describe himself. Naturally, most respondents consider these questions .very personal. The respondent is more likely to answer demographic questions after he is asked for his knowledge about the subject. Responses to these questions are useful when cross-tabulated with questions describing the different kinds of people that either know something or hold a particular point of view. Most military surveys include age, sex, education, military area, rank, years of service and component in this section.
- o Leave a space at the end of the questionnaire for the respondent to give his personal feelings about the survey subject or survey itself. This is another way of letting the respondent know that his information and opinions are important to those who are conducting the survey. And, of course, it is always good policy to thank the respondent after cooperating.

PRETESTING QUESTIONS

Questionnaires should always be pretested on a small group of the intended population. Pretesting is nothing more than a trial run. Pretesting allows you a chance to deal with problems concerning question wording, answer choices and interview procedures.

Talking with the pretest group will also point up additional possible questions and problem areas.

Finally, one should always consider the possibility of repeating the survey. Questions that have been thoroughly pretested and have worked in the actual survey can be used to measure the same thing with another group, or at a different time. Comparison of audience data collected at different times is often useful in determining changes in perception and/or presentation. If a large segment of the audience indicated they enjoyed the news in one survey and then in a subsequent survey indicated they no longer watch the news, a change in presentation of news might be in order.

SAMPLING

Earlier, we discussed the 10 basic steps in conducting an audience survey. One of those steps, sample, requires closer scrutiny. As defined, sample means "to choose which people to survey." Let's say that our total viewing audience numbers 4,000.

This number includes assigned military and civilian personnel and their family members. This is the population we wish to sample.

SAMPLE METHOD

There are five sampling methods available to the surveyor.

- o simple random
- o stratified random
- o cluster
- o systematic
- o quota

Simple Random

Simple random sampling means that everyone in the population has an equal chance of being included in the sample. This can be done by assigning a number to each person in your audience. Their numbers are written on separate pieces of paper and placed in a box. The slips are drawn until enough people have been selected to make the survey valid (see Sample Size later in the lesson for how many numbers should be drawn). To ensure everyone has an equal chance, each slip is placed back in the box after being drawn. If any of the same slips are drawn again, they are ignored and placed back in the box.

Stratified Random

Stratified random sampling means that before a random sample is drawn, the population is first divided into different groupings (strata) of a single category such as age, sex, rank or education. For an audience survey in which the primary concern is how much of the total population listens to the six o'clock news, this type of sampling would be impractical. But, if we wanted to know how many privates, corporals, sergeants, first lieutenants, etc. were catching the six o'clock news, we would have to use this method.

Cluster

Cluster sampling means that you pick your 350 people in groups. For example, we might select 35 people by the simple random method from each of 10 housing areas also randomly selected from all of the housing areas.

Systematic

Systematic sampling, sometimes called "patterned sampling," proves to be a very convenient method for sampling military personnel. Here, we follow a definite pattern in choosing sample subjects from some population list of names.

For example, we have determined that we need a minimum of 400 people to serve as our sample. One way to make this selection is to draw a random number out of a hat. From a given list or roster we would then select the first 400 individuals with that number in the last four digits of their social security numbers.

Quota

This is the fastest and cheapest method of sampling, but the least reliable. To obtain our sample, we might tell 10 interviewers to get responses from 35 people in our listening or viewing audience. Who gets selected for the sample is then left up to the interviewers.

SAMPLE SIZE

In determining sample size we are concerned with two things: accuracy (reliability) and confidence (risk). Other factors such as method of collecting data, interviewer bias, and question structure can also influence the reliability of our results.

When we take a random sample, we are taking a carefully selected part to show the characteristics of the whole population. There will always be some error such as the difference between the estimate provided by the sample and the percent of the whole population. However, random sampling allows us to specify ahead of time the amount of this error and the confidence we have that the amount will not be exceeded. In conducting a survey of the military audience, simple random sampling is recommended.

The sample size can be determined from the following table which is indexed by the size of the total population (audience) and the desired confidence level. A confidence level of 95 means that if the survey was conducted 100 times using the listed population sizes, the results would be the same in at least 95 surveys. The most common interval of accuracy is plus or minus 5 percent. That means any survey results projected for the whole population may actually be either 5 percent higher or lower than what the sample indicated during the survey.

SAMPLE SIZES NEEDED FOR DIFFERENT LEVELS OF RELIABILITY (95% Confidence Limits)				
Population Size	$\pm 2\%$	$\pm 3\%$	$\pm 4\%$	$\pm 5\%$
100	96	92	86	80
250	226	203	177	151
500	414	341	273	217
1000	706	516	375	278
2000	1110	696	462	322
3000	1334	787	500	341
4000	1500	842	522	350
5000	1622	879	536	357

Table 1

For a listening or viewing audience of 4,000 and an error or accuracy tolerance of plus or minus 5 percent with 95 percent confidence limits, we need to randomly select 350 people to complete the questionnaire.

Let's say we decide to use a mail survey to determine how many in our audience watch the six o'clock news. From the table we know that we need to completed questionnaires from 350 people. Does this mean that we need to only send out 350 questionnaires? No, but we need to ensure that we receive at least that number of questionnaires back.

The typical response rate to mail surveys ranges from 30 to 35 percent. Plan for follow-up mailing, perhaps post cards. We will need to send out a questionnaire to at least three times as many questionnaire as we need to get back.

A cover letter from the Commander, Chief of Staff or some other authority will help boost return rates.

Using all of the data that we have discussed so far, let's say that we mailed out our 1,050 questionnaires. We now have back 350 completed questionnaires.

ANALYZING THE RESULTS

The last, and perhaps the most involved step to completing an audience readership survey, is analyzing the results.

Completed questionnaires must be analyzed to provide, at the least, percentages to survey question responses.

Audience survey results can supply a great deal of useful information besides percentages and audience demographics. If they are properly analyzed and interpreted, your completed results can also reveal problem areas with:

- o distribution effectiveness
- o audience awareness and acceptance
- o audience opinion about the value and effectiveness of the station

To go one step further, your findings could ultimately be used as a learning tool. Survey results can provide a sound basis from which to make decisions on such matters as how to reach specific audience segments with specific messages, or determining which areas of coverage concentration could be reduced without losing segments of that audience.

WHERE TO GO

A major problem most public affairs offices face is they normally don't have the resources to generate this kind of information --in terms of both cost and manpower.

With knowledge of statistics, certain tests can be performed quickly to yield descriptive data. Others can do even more, but they are so complicated that it can be very time consuming.

Computers can perform all of these tasks and more in seconds. In most cases computer support is available through local Directorate of Information Management offices (DOIM). Computer support can also be obtained from:

- o the area comptroller
- o nearby universities
- o personal computer user groups

If a check with these sources fails to locate the appropriate facilities, data analysis can still be done, as a last resort, "by hand." Survey analysis done in this manner won't, however, provide detailed statistical data. But this method will, at a minimum, give some insight of your audience's readership trends.

INTERPRETING THE FEEDBACK

When using computer support, the first obstacle to overcome is the language barrier. You should know at least what to ask for before bringing your data to the computer. It must also be presented in a format the computer will understand.

As a minimum, the interpretation should show frequency and crosstab tables.

FREQUENCIES

The staff of our post station, WDIS, recently completed an audience survey. A 24-item questionnaire was used to query a sample selection of 465 respondents.

Initially a frequencies analysis was performed to obtain overall results on each questionnaire item. These are some examples of the kinds of information this procedure provided:

Sample	Absolute Frequency (actual number)	Relative Frequency (percent of total)
Active Army	406	87.3%
Others	59	12.7%
Total	465	100.0%

Table 2

Table 2 gives the overall total of Active Army personnel (406) and others (59), and the percentage which they comprise in the total sample (87.3 and 12.7 respectively).

	Absolute Frequency	Relative Frequency	Cumulative Frequency
E1-E4	148	31.8%	31.8%
E5-E7	150	32.3%	64.1%
E8-E9	26	5.6%	69.7%
W1-W2	10	2.2%	71.9%
W3-W4	7	1.5%	73.4%
01-03	45	9.7%	83.1%
04-06	18	3.9%	87.0%
07-	2	0.4%	87.4%
GS1-GS5	13	2.8%	90.2%
GS6-GS11	17	3.7%	93.9%
Other	29	6.1%	100.0%

Table 3

Table 3 illustrates the by-rank breakdown of the sample used. Ideally, these figures will be roughly proportional to the normal rank breakdown found in the post population. The cumulative frequency provides a running percentage total.

CROSSTABS

Frequencies alone do not provide enough specific information to make abrupt changes in coverage. More data is needed before decisions can be made on how or whether to implement any changes. The second statistical procedure used on the sample survey was a crosstabs analysis. This test provides specific information about how each sub-group feels about each question. Table 4 illustrate crosstab findings:

How much do you believe of what you hear on WDIS (Absolute frequency/relative frequency by row)						
	All	Most	About Half	Less than Half	None	
E1-E4	14/10.1	76/ 54.7	32/23.0	13/ 9.4	4/2.9	
E5-E7	18/12.4	91/ 62.8	25/17.2	9/ 6.2	2/1.4	
E8-E9	3/12.4	18/ 72.0	2/ 8.0	2/ 8.0	0/0.0	
W1-W2	0/ 0.0	5/ 50.0	3/30.0	1/10.0	1/10	
W3-W4	0/ 0.0	4/ 57.1	2/28.6	1/14.3	0/0.0	
01-03	3/ 6.7	33/ 73.3	7/15.6	2/ 4.4	0/0.0	
04-06	1/ 5.9	13/ 76.5	3/17.6	0/ 0.0	0/0.0	
07-	0/ 0.0	2/100.0	0/ 0.0	0/ 0.0	0/0.0	
GS1-GS5	5/41.7	4/ 33.3	2/16.7	1/ 8.3	0/0.0	
GS6-GS11	1/ 6.3	12/ 75.0	3/18.8	0/ 0.0	0/0.0	
Other	0/ 0.0	3/100.0	0/ 0.0	0/ 0.0	0/0.0	

Note: Not all respondents answered the question.

Table 4

To maximize its usefulness, data should be subjected to three stages of analysis:

- o preliminary analysis --data is broken into basic groups and "raw data" tables.
- o aggregate analysis --responses are broken down into percentage and specific groups for study (by sex, age, etc.).
- o comparative analysis (the heart of the survey) --all data is matched against other statistics and conclusions are drawn based upon the results.

PRACTICE EXERCISE

LESSON 2

SUBCOURSE DI0430

CONDUCT AN AUDIENCE SURVEY

INSTRUCTIONS:

Review the material in this lesson. Answer the questions below by circling the "T" or "F" next to each question. Compare your answers with the answer key on the next page.

- T F 1. An audience survey is an annual requirement as prescribed in AR 600-35.
- T F 2. The three types of surveys generally considered in the military are census, annual and mail.
- T F 3. The sampling methods available to the surveyor are simple random, stratified random, cluster, systematic and quota.
- T F 4. Simple random sampling means that everyone in the population has an equal chance of being selected.
- T F 5. The two main elements of an audience survey are sampling and percentages.
- T F 6. The most commonly used error or accuracy tolerance is plus or minus 5 percent.
- T F 7. If your station decides to use a mail survey, you would expect a response rate of 30 to 35 percent.
- T F 8. In determining sample size, the two factors you're concerned with are access and confidence.

ANSWER KEY

PRACTICE EXERCISE

LESSON 2

SUBCOURSE DI 0430

CONDUCT AN AUDIENCE SURVEY

1. False (Page 12)
2. False (Page 14)
3. True (Page 23)
4. True (Page 23)
5. False (Page 13)
6. True (Page 25)
7. True (Page 26)
8. False (Page 25)

LESSON THREE

DETERMINE A RADIO MUSIC FORMAT

46R Soldier's Manual Task: 214-177-3406

OVERVIEW

LESSON DESCRIPTION:

This lesson will provide you an overview of how to determine a radio music format.

TERMINAL LEARNING OBJECTIVE:

ACTION:	Describe procedures necessary to properly determine a radio music format.
CONDITION:	You are given the material presented in this lesson.
STANDARD:	Perform all the duties described in this lesson.
REFERENCES:	The material contained in this lesson was derived from the following publications: STP 46-46R14-SM-TG Soldier's Manual & Trainer's Guide, Broadcast Journalist MOS 46R Skill Levels 1/2/3/4, August 1988. Defense Information School Radio and Television Handbook, May 1982.

DETERMINE A RADIO MUSIC FORMAT

INTRODUCTION

Of all the responsibilities of a broadcast manager, there is perhaps none that will impact upon the accomplishment of his primary mission as much as establishing the radio music format. Let's face it, your audience won't tune in for the routine command information spots you air unless you offer music to fit their tastes. There have been times when people liked a commercial so much that they would intentionally listen to it, but such cases are rare at best. After all, it's the seller who wants the listener to hear his message, not the other way around.

It's your job as broadcast manager to attract your audience's attention in order that you can deliver the command information. The mission is to inform and entertain. Never forget that "inform" comes first. The "entertain" is more to enable you to inform than any other reason. Of course, entertainment promotes good morale, but it's necessary for the broadcast manager to understand the priorities.

DETERMINE THE OBJECTIVE

Although the normal objective of a music program format is to deliver the maximum command information with the minimum annoyance to the music-listening audience, there are special circumstances where the objective could be somewhat different. In any case, understanding the objective is step one.

CONSULT AUDIENCE SURVEYS

Once you've determined the objective you can plan your steps. One part of the equation is always the audience. In order to inform and entertain an audience, you must know its likes and dislikes. That is the function of an audience survey.

As you learned in lesson two of this subcourse, audience surveys go to great lengths to ascertain the things you'll need to know about your audience. Once you know them it's a matter of appealing to their tastes. There are a number of things you must do in order to accomplish that.

DETERMINE MUSIC

Appealing to an audience's tastes may not be a simple thing. If the audience was one person, or many people of exactly the same taste, it would be easy, but that is never the case. The military is a miniature of the entire country as far as population and its tastes, although sometimes concentrations do exist. How do you appeal to everyone? You don't! The best you can hope to do is appeal to the largest segment of your audience most of the time and have something for everyone in proportion. Simply put, that means if 80 percent of your audience likes rock "n" roll, 10 percent likes country and 10 percent likes soul, you would play 80 percent rock "n" roll, 10 percent country and 10 percent soul. That may be an extremely simple example, but the basic theory is valid. Many things must be considered in determining what music you play, how often you play it and at what time of the day. There are also a few things you should take care to avoid in the selection of music.

They will be discussed later in this section.

Prevent DJ preference

There will be many facets to address in analyzing audiences. Once you've waded through all the different points to consider and come upon the correct makeup of your audience, manager and broadcaster alike must pay special attention to being objective and maintaining a professional approach to the construction of a play list. After that play list has been decided upon, you'll still need to provide guidance to the DJ. Most stations prepare a music wheel or hot clock, representing an hour of local show time, as a guide for local disc jockeys (see Figure 1, Radio Hot Clock). A circle corresponding with the face of a clock is used to show the DJ required, or suggested, show element to air and the approximate time to air it according to local SOP. It can refer to music selections, spots and jingles/propellants.

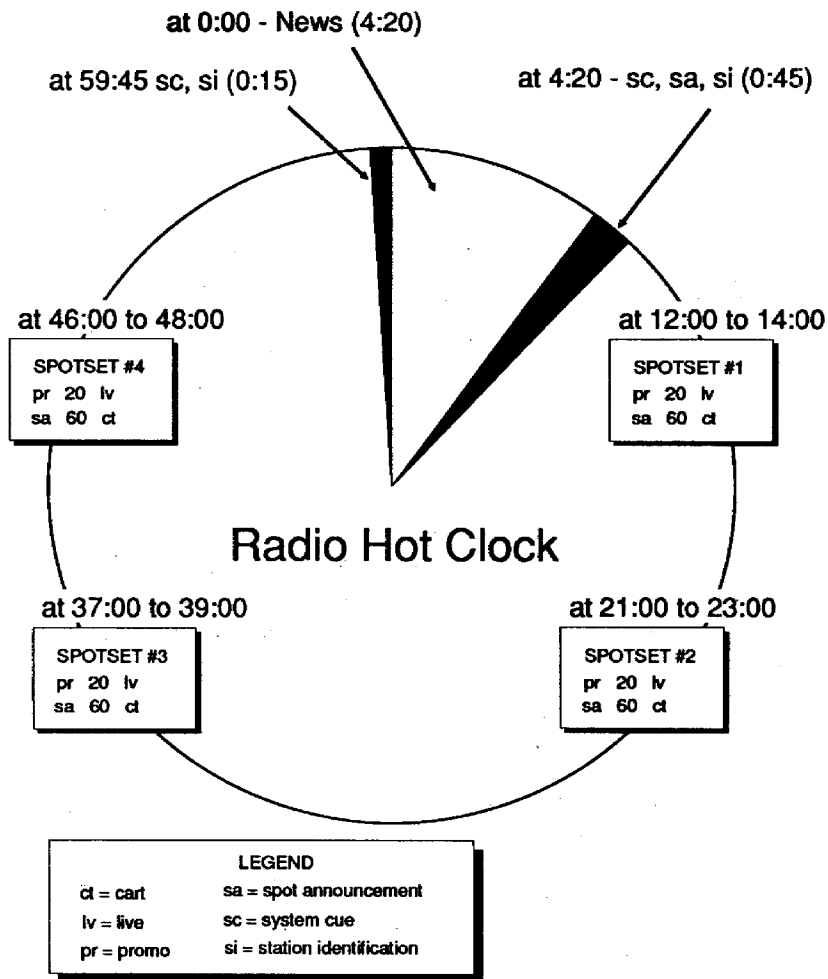


FIGURE 1. RADIO HOT CLOCK

You'll probably leave selection of specific songs to the show announcer, but within some rather strict guidelines. Music types can be administratively divided into classifications for simple management of the format. Usual classifications are "hot" chart songs, "low" chart songs and oldies. Songs can be further classified by tempo or gender of artist, as desired.

Prevent Overplaying Of Chart Music

If ever there could be too much of a good thing, it could be in popular music. There is a fine line between too little and too much, with **just enough**, balanced on it. In deciding how much to play any given piece of music, you must also consider any canned shows that are aired over your station. Example: If you air The Charlie Tuna Show, you must count the times he plays a certain song as well as the times you play it.

You'll want to have some system for keeping track of how often a selection is aired. File cards can be prepared for the top chart songs that can be rotated when one of the songs is played. It is also necessary to mix up the times of airing as well. Table 5 is an example that could serve to keep track of both how often and at what time of day the songs on your play list come up.

The following table is for a three-hour show, with each initial representing a half-hour segment of the show. A is the first half hour, B the second half hour, etc. If you have both morning and afternoon shows, you'll want to keep one for each show. Keep one for each playlist of songs if you divide your songs up by separate lists, such as A for hot 100, C for recurrents, B for oldies, etc.

POS.	TITLE	MON	TUE	WED	THR	FRI
1.	Number 1 song	A	D	F	E	C
2.	Number 2 song	F	A	E	C	D
3.	Number 3 song	A	F	D	C	E
4.	Number 4 song	B	C	A	D	F
5.	Number 5 song	C	B	E	F	A
6.	Number 6 song	E	D	B	A	C
7.	Number 7 song	D	E	C	B	A

Table 5

Ensure Proper Balance

Music types can be administratively divided into classifications for simple management of the format. As previously mentioned, the classifications would be "hot" chart songs, "low" chart songs and "oldies." Songs can be further classified by tempo or gender of artist, as desired.

Songs should be listed by classification on the music wheel in the position determined to best fit the format objective.

You may determine a need to vary the female-male-group balance of your announcers' playlists. Requiring a loose mix of three will prevent an "all male" or "all female" sound from dominating your local shows.

In order to keep the listener's interest, another thing you must balance is tempo. A widely recognized and effective way to do this is with the "wave" effect. That means to program an up-tempo song to start, slow the tempo through the middle of the first half-hour, start the second half-hour up-tempo again, slow through the middle of the second half-hour again, and end with an up-tempo song.

DETERMINE SPOT-TO-MUSIC RATIO

Every year billions of dollars are spent in the advertising business in an effort to get the sponsor's message to an audience. Probably the single most prominent goal is to get the audience to listen to the commercial instead of heading for the kitchen during the commercial break. That should lead us to understand that the audience is there for the entertainment portion of the program. They will put up with some commercial announcements (which is, after all, what spots really are), but when the commercial/spot to entertainment ratio gets too out of balance, the audience will go away. It is therefore extremely important to maintain the correct spot-to-music ratio. If you have no audience, it doesn't matter how good the spots are or how many of them you air, or how much command information you put out.

There is no hard and fast formula for proper balance. Your best tool in determining how good a job your station does in this regard will be in audience surveys. Your local survey will provide feedback that indicates how well balanced your format is. In the event you don't already have a format balance established, a good place to start is six minutes of music to each minute of spots. Of course, you adjust from there according to the feedback received in audience surveys.

SPOT CLUSTERS

Most stations will cluster spots together rather than sandwich them between songs. This method will give a "more music" sound. A spot cluster or spot set of two or three spots every 10 to 12 minutes on the music wheel is not uncommon.

The spot cluster can be made up of a combination of produced (carted) spots and reader (live) announcements, depending on the command information emphasis. Your Command Information Section Traffic and Continuity can assist you in this.

SUPPORTIVE MATERIALS

Your music program format should also indicate how often and when supportive material is aired. Supportive materials include jingles/propellants, news or sports features, comedy segments, weather and things of that nature.

It's necessary to provide guidance to the program announcer as to how often and when to use produced jingles and music propellants so that they don't become a crutch. Here again, there is no set rule that tells you what is too much. It's up to you to decide and see to it that they are not overused. The key is to balance the program aid with other show elements.

You should also establish guidelines concerning announcer self-identification, whether the ID is formal or informal. Again, balance is the key consideration.

It's important that your audience understand when it can expect certain show elements. Different time periods will have different emphasis because the nature of the audience changes with the daypart. For example, information such as news, time hacks, weather, temperature, road conditions, and school closings are more important to most "morning drive time" audiences, while features may appeal more to the midmorning local audience. Afternoon drive time audiences might prefer information segments during the local music show such as sports, weather, time, etc. To be more specific and exact, you'll need the information provided by your audience surveys.

If you're an affiliate station, you must also consider your network's music program format. How far you can deviate from the network's sound will most likely be dictated by the network, in accordance with your local audience needs and wants. In any case, your audience will expect a certain amount of continuity.

Remember that your audience has a lot of input to your radio music format, but you also have a command information mission. The radio music format you determine will impact heavily upon that mission. You will need to submit your format to your supervisor for approval unless local SOP gives you approval authority.

Finally, remember that audiences change, both in make-up and tastes. Especially in the military where people are constantly on the move, your audience is subject to turn over completely in three years.

PRACTICE EXERCISE

LESSON 3

SUBCOURSE DI0430

DETERMINE A RADIO MUSIC FORMAT

INSTRUCTIONS:

Review the material in this lesson. Answer the questions below by circling the "T" or "F" next to each question. Compare your answers with the answer key on the next page.

- T F 1. The "wave" effect is a form of tempo balance.
- T F 2. Since jingles can become a crutch for a DJ, their frequency of use should be indicated in the program format.
- T F 3. Manager and broadcaster alike must pay special attention to being objective and maintaining a professional approach to the construction of a play list.
- T F 4. Pleasing the audience comes above all other considerations in determining a radio music format.
- T F 5. The popularity indicated by a song being in the top 10 on the charts also indicates that it's impossible to play it too much.
- T F 6. Information is a secondary consideration of a radio music format.
- T F 7. Songs can be classified by tempo or gender of artist in addition to type of music.
- T F 8. In order to help your audience know what to expect at any given time of day, it's a good idea to play the same songs at the same time each day.
- T F 9. A good way to balance the spot-to-music ratio is to put one spot between every two songs played.
- T F 10. The station radio music format would establish guidelines for announcer self-identification.

ANSWER KEY

PRACTICE EXERCISE

LESSON 3

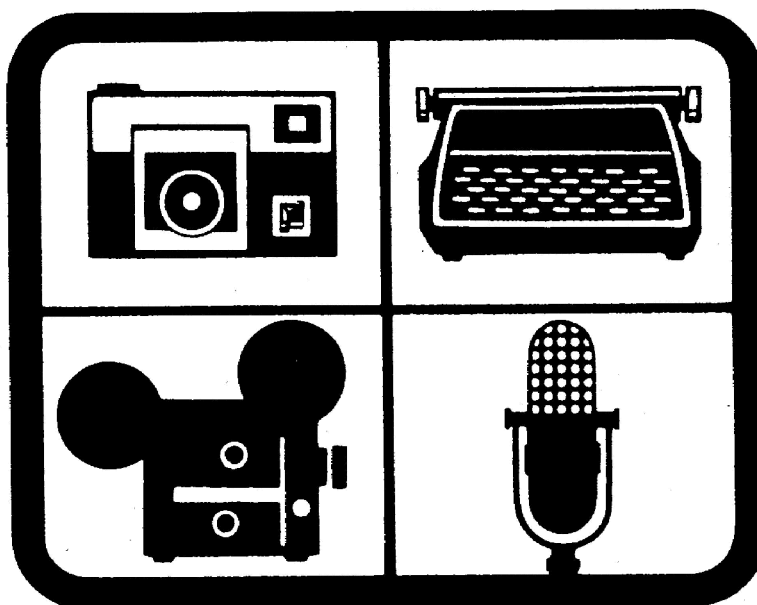
SUBCOURSE DI0430

DETERMINE A RADIO MUSIC FORMAT

1. True (Page 38)
2. True (Page 39)
3. True (Page 35)
4. False (Page 34)
5. False (Page 36)
6. False (Page 34)
7. True (Page 37)
8. False (Page 37)
9. False (Page 38)
10. True (Page 39)

**PERFORMING AS A CHIEF
RADIO ANNOUNCER
AND ESTABLISHING AND MAINTAINING
BROADCAST SOP**

PUBLIC AFFAIRS



THE ARMY INSTITUTE FOR PROFESSIONAL DEVELOPMENT
ARMY CORRESPONDENCE COURSE PROGRAM

IPD



**PERFORM AS CHIEF RADIO ANNOUNCER/
ESTABLISH AND MAINTAIN A BROADCAST SOP**

Subcourse Number DI0450

EDITION 9

US Army Public Affairs Proponent Center
Fort George G. Meade, Maryland

5 Credit hours

Edition Date: March 1989

SUBCOURSE OVERVIEW

This subcourse contains two lessons, giving the senior broadcaster the tools necessary to perform as chief radio announcer. These lessons will provide a general knowledge and understanding of radio formats, critiques, announcing broadcast copy, locally produced spot announcements and features, preproduction process, managing traffic and continuity, the record library, the audience survey, radio remotes, managing an AFRTS radio program package, maintenance, supplies and establishing and maintaining a broadcast SOP.

There are no prerequisites for this subcourse, however, if you do not have a basic knowledge of military broadcasting, it is strongly suggested you complete subcourses: DI0340 Radio, DI0300 Introduction to Broadcasting and DI0320 Basic Announcing Skills.

This subcourse reflects the doctrine current at the time the subcourse was prepared. In your own work situation, always refer to the latest publications.

The words "he," "him," "his," and "men," when used in this publication, represent both the masculine and feminine genders unless otherwise stated.

TERMINAL LEARNING OBJECTIVE

Task: In this subcourse you will learn the duties and responsibilities of the chief radio announcer and the proper method of establishing and maintaining a broadcast SOP.

Conditions: You are given the material presented in this lesson.

Standards: You will demonstrate a basic understanding of the duties of the chief radio announcer and establish and maintain a broadcast SOP.

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LESSON ONE

PERFORM AS CHIEF RADIO ANNOUNCER

46R Soldier's Manual Task: 214-177-2001

OVERVIEW

TASK DESCRIPTION:

In this lesson you will learn the chief radio announcer's duties and areas of responsibilities.

LEARNING OBJECTIVE:

ACTIONS: Describe the areas of responsibility and duties of the chief radio announcer.

CONDITIONS: You are given the material presented in this lesson.

STANDARDS: Define or identify the chief radio announcer's areas of responsibilities and be able to perform all the duties described in this lesson.

REFERENCES: The Material contained in this lesson was derived from the following publications:

DoD 5120.20 R
AR 360-7
STP 46-46R14-SM-TG 1/2/3/4/Broadcast Journalist
Soldier's Manual and Trainer's Guide
DINFOS Radio and Television Handbook
DINFOS Public Affairs Handbook

PERFORM AS CHIEF RADIO ANNOUNCER

INTRODUCTION

The chief radio announcer is very important to military radio operations. Once you have reached this level in your military broadcasting career, you find that responsibility suddenly becomes more than just a word. As chief radio announcer, you will be responsible for implementing the station policies and ensuring they are carried out by your subordinates. The chief radio announcer must be the expert at his radio outlet. This lesson will provide a step-by-step look at the duties and responsibilities of the chief radio announcer.

BE KNOWLEDGEABLE

The chief radio announcer must have a thorough knowledge of all aspects of radio operations. It is hard to supervise personnel when you do not understand the tasks they perform. As the chief announcer, you must know each performance measure it takes to perform a task that your announcers must complete. You must know how to:

- o perform a music program,
- o operate radio control room equipment,
- o announce broadcast copy,
- o perform a broadcast interview,
- o produce radio spots and features,
- o write broadcast copy, and
- o do performance counseling.

This is by no means the entire list. The list could go on and on. The bottom line is simple: KNOW YOUR RADIO OPERATION.

The station's program director is normally responsible to the station manager for establishing program formats for all local shows. The chief radio announcer, in most cases, will have input when formats are devised. Although input into the creative process is important, you are responsible for ensuring that local program formats are followed by staff announcers. To do this, you must know all the formats.

Understand that the objective of the local music program format is to deliver the maximum command information with the minimum annoyance to the music-listening audience. Do this by managing the spot-to-music ratio and the placement of those spots within the music program. The format should hold the listener's attention with a music balance. The format will shape the overall sound of the program.

Consult the latest local audience survey to determine listening habits and music preference. The station programmer will have already set the time slot and style of music for the local shows. You must determine the amount and balance of chart music versus oldies, their placement within the show's on-air window, the number of spots to use in the show, and how often to air those announcements. The survey results can show audience preference for chart or oldie songs and can indicate spot announcement saturation.

Most stations prepare a music wheel (hot clock; Figure 1-1), representing an hour of local show time, as a guide for local disc jockeys. A circle corresponding with the face of a clock is used to show the DJ required, or suggested, show element to air and the approximate time to air it, according to local SOP. It can refer to music selections, spots or jingles/propellants.

Music selection and play should not be left entirely to the show announcer. Music types can be administratively divided into classifications for simple management of the format. Usual classifications are "hot" chart songs, "low" chart songs and oldies. Songs can be further classified by tempo or gender of artist, as desired. To prevent overplaying songs of a particular classification, a system of rotating the music can be devised. File cards can be prepared for the top chart songs that can be rotated when one of the songs is played.

The desired song type is then listed by classification on the music wheel in the position determined to best fit the format objective.

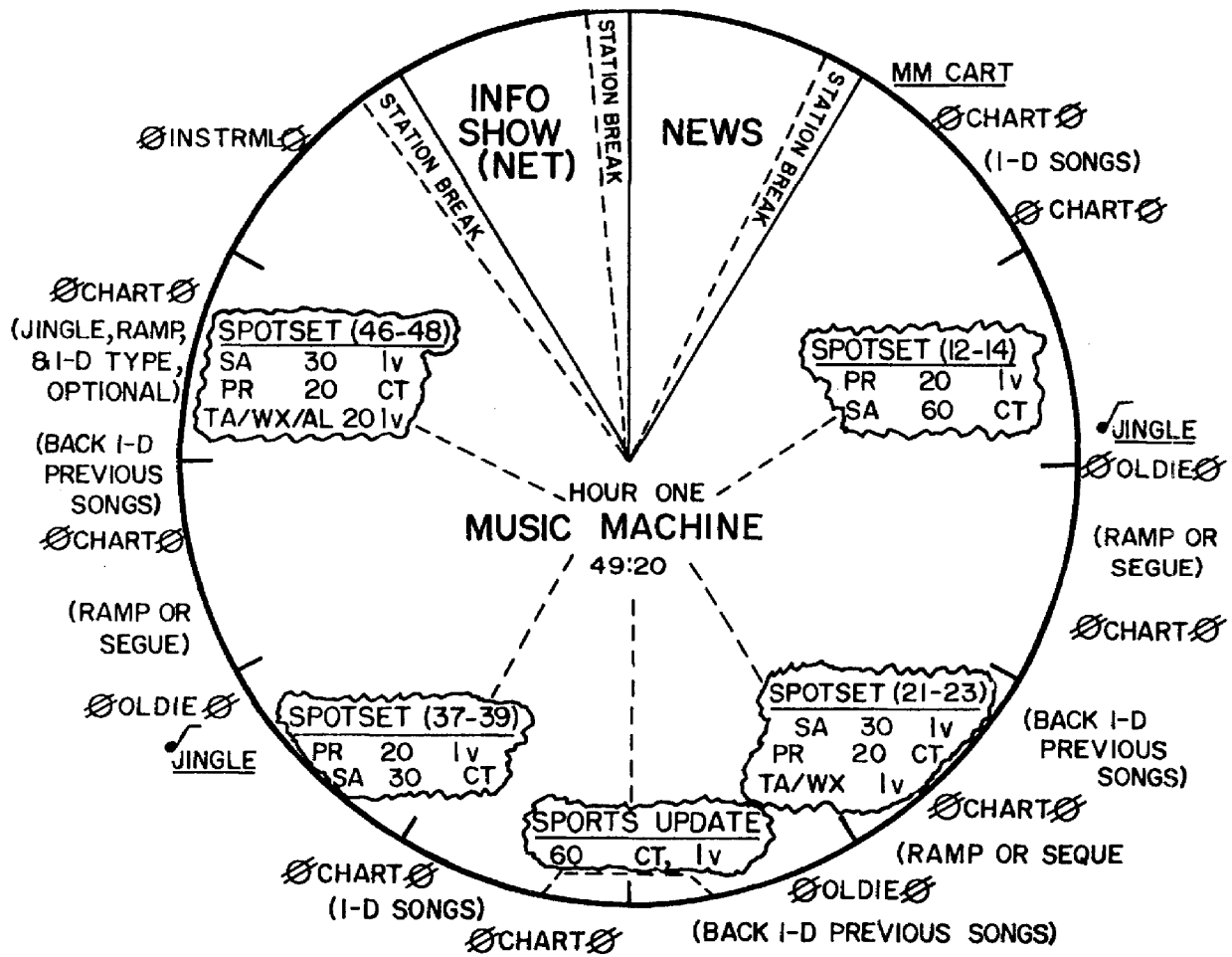


Figure 1-1. Hot Clock

You may determine a need to vary the female-male-group balance of your announcer's playlists. Requiring a loose mix of the three will prevent an "all male" or "all female" sound from dominating your local shows.

The "wave" effect is widely recognized as an effective way to program song tempo to keep the listener's interest. The "wave" means programming an up-tempo song at the start, slowing the tempo down through the middle of the first half-hour, starting the second half-hour with an up-tempo "kicker," slowing the tempo through the middle of the second half, and ending with another up-tempo song.

Determine how many spots to use and how often to air them during the show. This depends on your station's spot-to-music ratio, if it has been established. There is no hard-and-fast formula for this, but the main idea is a balance that is not too heavy on the spot side. The local survey will provide feedback indicating how well balanced your format is. A good start might be a ratio of one minute of spots to six minutes of music. This ratio should be adjusted to fit the local audience needs and desires.

Most stations "cluster" spots together rather than sandwiching them singly between songs. This technique is preferred because it gives the sound of more music being played. Most station music wheels run a spot cluster (spot set) of two or three spots three times an hour.

The spot cluster can be made up of a combination of produced (carted) spots and reader (live) announcements, depending on the command information emphasis. The Traffic and Continuity or Command Information Section can assist you in making this determination.

The music program format should also indicate how often and when supportive material is aired. This includes jingles/propellants, news or sports features, comedy segments, weather, etc.

Give the disc jockey guidance as to how often and when to use produced jingles and music propellants. Without guidance, these program aids can turn into a crutch for the announcer. Jingles should not be overplayed, and it is up to you to decide how much is too much. The key is to balance the program aid with other show elements.

Establish guidelines concerning announcer self-identification, whether that ID be formal or informal. Again, balance is the key consideration.

It is important to your audience that you establish a pattern as to when it can expect certain show elements. And, different time periods will have different emphasis because the nature of the audience changes with the daypart. Information (news, time, weather, temperature, road conditions, school closings) is important to most "morning drive time" audiences. Features may appeal to the midmorning local audience. Afternoon drive time audiences may prefer information segments during the local music show (sports, weather, time, etc.). Consult your latest local audience survey to make this determination.

If you are at an affiliate station, consider the network music program format. If you are given the option to create your station's format, don't differ radically from the network "sound." Your audience expects a certain amount of continuity.

CRITIQUES

The best way to ensure your announcers are in compliance with local formats is to critique their programs. There are a couple of ways to do this.

- o Monitor live broadcasts. Several times a week you should spend time listening to portions of the live broadcast. DO NOT monitor the broadcast by sitting in the studio with your clip board. This will make the announcer nervous and tip him off that now would be a good time to follow the format.
- o Audition air check tapes. Most radio outlets have a 24-hour logger machine, sometimes called the "alibi tape." The 24-hour logger is used every day of the year recording each day's programming. This gives you the luxury of selecting tapes at random to critique. In most cases you should listen to the tape so that you can establish key points you want to bring out in the critique. Note any trends, e.g., too many time hacks, too much or not enough talk, more weather, etc. This will give you a basis for future critiques to note improvement. Be objective and try to help your announcers develop their own style within the boundaries of the station's format.

When listening to your local programming, there are areas you need to pay particular attention to. Is the announcer in compliance with the:

- ☐ music rotation?
- ☐ program log?
- ☐ local broadcast standards established in the standard operating policy or soldier's manual?
- ☐ host-nation sensitivity policy?

Does the announcer:

- ☐ select music that corresponds in tempo and style to the local format?
- ☐ gather and inspect, for air quality, any spots, records, cartridges and other air products needed for the show?
- ☐ rehearse spots, promos and any other material to be read live?
- ☐ update weather forecasts, current temperature and conditions, sports briefs, or other dated material required by the local format?
- ☐ perform music show elements according to the log and local format?
- ☐ overuse jingles, propellants or other production aids?
- ☐ communicate one-on-one with the audience?
- ☐ make comments that are profane, vulgar or offensive to the audience?
- ☐ have dead air during show?
- ☐ "step" on the vocals of a song?
- ☐ use proper announcing techniques?
- ☐ correct mistakes without calling attention to them?
- ☐ avoid an unintentional live microphone?
- ☐ make correct and complete log entries?
- ☐ note deficiencies in equipment or program material for next operator?

When critiquing a staff announcer it is smart to conduct performance counseling. Document the session. You should point out his strong areas as well as his deficiencies. Once you point out a deficiency, always show the announcer the correct way of performing the task. Inform the person what you expect, and reiterate the tasks in your regular training program. Informally review progress daily. Help your announcers by providing constructive criticism in an effort to improve their weak areas. Every 90 days thereafter, conduct performance counseling and review his progress, strengths and weaknesses. Remember that tactful, constructive criticism is more effective and helpful than simply finding fault. If he fails to show improvement, make your superiors aware of the situation. You want them to know that you are aware of and working on correcting the problem. A continued lack of progress on the broadcaster's part may indicate an attitude or learning problem. Appropriate actions should be taken to correct the deficiency.

ANNOUNCE BROADCAST COPY

Your knowledge in announcing broadcast copy has helped you reach the position of chief radio announcer. Always be prepared to share this knowledge with your staff announcers. Introduce them to the tricks of the broadcasting trade. In case you may have forgotten a few of those tricks, here are a few tips on announcing broadcast copy.

- o Before you go on the air, read the copy ALOUD and identify difficult to pronounce words. Check these words in the dictionary, the wire service phonetical guide or station pronunciation guides. As you read, try to determine the meaning and intent of each story. It's impossible to convey the meaning and intent of the story if you don't understand it yourself.
- o Mark the copy for pauses in breathing and also for words that should be emphasized. It is extremely helpful to phonetically rewrite difficult to pronounce words. The phonetic version of the word will also give you confidence in pronouncing it. Check the grammar of the printed copy. Just because it came over a major wire service, doesn't mean it's perfect.
- o Articulate properly by pronouncing all the syllables in each word. For example, when you pronounce the word "breezes" include the "s" sound. Also, don't make sound substitutions such as "dat" instead of "that."

- o Use correct inflection by properly changing the pitch or tone of delivery. Too much or patterned inflection can create a "sing-song" effect, where not enough inflection results in a "monotone" delivery. Inflection should vary the pitch naturally.
- o Phrase the words or groups of words as a unit or group instead of emphasizing each word. Key individual words should still be emphasized. For example, instead of saying, "SECRETARY OF STATE JIM SMITH FLEW TO THE MIDDLE EAST TODAY TO TALK WITH ISRAELI OFFICIALS ABOUT THE NEW PEACE PROPOSALS," in such a way that each word is given equal importance, group the sentence into phrases:

"SECRETARY OF STATE JIM SMITH FLEW TO THE MIDDLE EAST TODAY....TO TALK WITH ISRAELI OFFICIALS....ABOUT THE NEW PEACE PROPOSALS." Speaking in phrases and placing emphasis on key-words within each phrase better communicates the meaning and intent of the story.

- o Use the correct delivery speed/rate. This will usually depend on the subject matter. Generally speaking, sports copy will be delivered at a faster rate than news. An emotional story, such as the death of a child, would be delivered at a much slower rate. A rate of 14 to 16 lines per minute is generally accepted as the average for broadcast copy. A "normal" rate would be one in which the announcer is most comfortable, providing that clarity and voice quality are not sacrificed for speed.
- o A smile or chuckle during the delivery of an emotional or sad story is offensive and unprofessional. The delivery involved with a feature program would probably be more upbeat than other types of radio programs, but it would still depend on the subject matter. A feature on a natural disaster or tragic event in history would certainly not be upbeat.
- o Pause between stories or use transitions. This alerts the listener to the fact that one story has ended and another is about to begin. Also, pausing within a story can emphasize a particular segment.
- o Try your best to avoid stumbling. Even the best announcers stumble on occasion. Stumbling often occurs when the announcer hasn't sufficiently rehearsed his copy. Again, unfamiliar or difficult words should be checked with the dictionary, wire service pronunciation guide or station pronunciation guide.

- o Announce the copy with authority. This comes with proper preparation or rehearsal. If you know the copy and meaning of the story, you can be authoritative in your delivery. You'll better communicate the meaning and intent of the story to your listener.
- o Make sure you complete the broadcast on time. If you are presenting the cast on radio and finish early, you'll probably have some "dead air." If you finish late, there's a good chance that you'll be cut off right at the time you were supposed to end your cast. Be prepared for disaster, such as a cart not playing. Always have alibi copy of a story that's on cart so that you don't leave the listener hanging in case the insert does not air. Bring in enough emergency fill copy to cover your scheduled time on the air.

PREPRODUCTION PROCESS

The chief radio announcer should review the existing SOP in the traffic and continuity department and make sure it is current. The SOP should contain a current list of command-recognized station clients. Station clients are organizations, recognized by the local command, who wish to have their messages delivered to the audience. Such clients would include the Red Cross, Community Services, etc. You must become familiar with any background information concerning each client and establish points of contact to include phone numbers for each organization. You should regularly communicate with each organization.

With client input, yearly emphasis calendars should be created to help schedule, produce and air command information (CI) spots at appropriate times. Brief the personnel responsible for processing traffic and continuity on the audience characteristics and listening/viewing habits, CI emphasis areas, authorized clients and the use of background files.

MANAGING TRAFFIC AND CONTINUITY

There is no specific set of rules governing the amount of spots to be aired. It's your determination. Before making this determination, you need to apply the four basic steps to effective spot programming:

- o Determine Command Information objectives/needs. Once a topic is decided upon, consider its impact on host-country sensitivities. Also consider the degree of application (a single spot or campaign).

- o Research the target audience. Address the demographics of the audience, then choose the method of communication (AM/FM radio, TV).
- o Formulate the spot campaign. Plan ahead for seasonal spots (winter driving, AER campaigns, etc.).
- o Program the spots. Decide whether you need to use "across-the-board" or "random" spot programming. Determine if the spot will be aired during morning drive-time, afternoon drive-time, non-prime time and fringe-time. Vary the spots on the same subject, and avoid using the same spot in the same hour each day. Evaluate the spots to see if they netted the intended results. Certain spots are more effective during certain times of the day.

Ensure the spots are being produced, and perform quality-control checks on completed products. Approve the daily program log in accordance with the local SOP, and remove outdated spot material from the system.

You must ensure that established procedures for labeling, maintaining CI products, and the airing of emergency special announcements are followed. Personnel must be thoroughly briefed. Emergency special announcements usually come through the Red Cross and are verified by the on-duty announcer in accordance with local policy.

REVIEWING PROGRAM MATERIALS

NOTE: One of the most important responsibilities you will have as a broadcast supervisor is to review materials for broadcast release. Once a product airs, it can't be retrieved. Local SOPs should provide basic guidance when it comes to release of material for broadcast. The following information outline pertains to both radio and television unless otherwise specified.

Make sure the product being aired conforms to SECURITY, ACCURACY, POLICY, and PROPRIETY (SAPP).

Security Measures

Security measures for the Army are outlined in AR 380-5. Disclosure of classified information definitely violates this regulation. Always check first when in doubt. Also, comments that are sensitive (but not classified) should not air. An example of this would be a pilot who proudly announces that it "only takes five minutes for he and his fellow chopper pilots to get into the air after the first warning." The comment is not classified but may be helpful to an enemy or potential enemy.

Accuracy

Make sure the information is accurate. Check the spelling of names; make sure the ranks are correct and unit designations are correct (e.g., there are "batteries" not "companies" in field artillery units), etc. Even stories that are generated and released by the PAO should be checked for accuracy.

Policy

Be familiar with public affairs policy outlined in AR 360-5 (Army Public Affairs-Public Information) , AR 360-61 (Community Relations) and AR 360-81 (Command Information Program).

The following regulations also contain policy considerations that reviewing officials need to know. The broadcast supervisor must be familiar with the content of these regulations in case they are needed for quick reference: AR 340-17 (Release of Information from Army Files and Records); AR 340-21 (The Army Privacy Program); AR 3680-80 (Release of Information When More Than One Service is Involved in Accident or Incidents); AR 380-5 (Department of the Army Information Security Program), and DOD Directive 5122.10 (American Forces Information Service). When working at an overseas AFRTS outlet you must be familiar with DoD directive 5120.20 R (Armed Forces Radio And Television Service) and AR 360-7 (Army Broadcast Service).

Propriety

Propriety is doing what is right and proper. Ensure the broadcast material is in good taste and does not violate the sensitivities of the listening audience. There are several things that would prevent broadcast material from being aired: vulgarity, obscenity, gore, perversion, excessive violence, and information that holds the service or its members up to ridicule.

Sensitivities

Most overseas stations maintain a local sensitivities file. Its purpose is to give guidance concerning the broadcast of issues considered controversial by the host-country government. There are also set procedures for reviewing material for host country sensitivities.

When it is necessary to remove host country sensitivities from entertainment material, AFRTS outlets are authorized to reproduce (dub) the original program to facilitate removal

Privacy Act

Because of the Privacy Act, broadcast material should not include certain information without permission of the individual concerned. This includes: street addresses; social security numbers; telephone numbers; information contained in medical and personnel files; and information pertaining to on-going disciplinary actions which would clearly be an unwarranted invasion of personal privacy.

Libel

Libelous information must be deleted from any material intended for broadcast. Basically, you must not say anything about persons, groups, organizations or businesses that expose them to hatred or contempt, lower them in the esteem of others, causes them to be shunned, or injures their business. Examples of some libelous words are: "drunk, radical, dishonest, unethical, a cheat, criminal (unless convicted), a traitor," etc.

News Analysis And Commentary

Locally produced news analysis or commentary is another example of policy violation. They are expressly forbidden. Only those analyses or commentary programs provided by AFRTS-BC may be aired. This material must still be reviewed for broadcast. Certain comments may be fine in Panama but not in Korea because of host-country sensitivities. Again, local SOP should provide guidance in this area, but if a news analysis or commentary program is aired, it must be aired in its entirety. Radio news actualities and correspondents' reports may be excerpted from network newscasts but must be excerpted in their entirety. News sources/networks that authorize their television programming to be excerpted are identified in DoD Regulation 5120.20 R, APPENDIX F.

Technical Considerations

Another technical consideration for radio is to ensure audio quality. You need to assume the role of the listener. You should be able to understand the intended message by listening to the material. Check for consistent audio levels.

Make sure the material is correctly timed. Running time for radio material covers first and last audio. If there is a discrepancy, make sure the person responsible for programming is made aware of it IAW local SOP.

RECORD LIBRARY

Another critical area of responsibility is the station record library. AFRTS record libraries must be maintained in a neat and orderly manner. Card files are updated with each incoming shipment from AFRTS-BC. AFRTS card files provide a cross-reference system that allows announcers to look up records by artist or title. These files are normally the most difficult part of the library to maintain.

You will find out that most announcers dread the mission of having to file library cards from new shipments. The radio chief announcer must closely monitor the filing of cards. Without the cards, it is sometimes impossible to locate a certain selection without physically going through entire sections of the record library.

Radio library materials should be separated by music type or category. Record sleeves, or "shucks," should be labeled in accordance with local policy. Normally the record number is placed on the sleeve itself. This allows the announcer to locate the number in the card file and then find the record, which is in numerical sequence. The record librarian is also responsible for ensuring that record shucks are maintained in good condition and that all deficiencies are brought to the chief radio announcer's attention. Whenever possible, emphasize care when handling the records. Set a policy for cleaning the records, using a professionally accepted method. This will depend upon the availability of cleaning materials.

Record accountability is your responsibility. You should establish a policy on the removal of records from the record library. Use a system of sign-out cards to be inserted in the record's space after removal. When the record is returned, the card can be removed. Set a policy concerning the removal of records from the radio section. Records should never be allowed to be signed out for unofficial

purposes. Except for remote broadcasts, which meet criteria set forth in AR 36-7, records should never leave the station. A semiannual inventory of all radio materials must be conducted.

Most radio outlets require that the top chart songs are recorded onto tape cartridge. This prevents wear and tear on records and provides a format control for the program director. The chief radio announcer must ensure that chart songs are properly recorded. Does the tape cue up properly and was the cartridge properly erased prior to recording? Basically, if the song is cued properly and the recording is clear, the tape cartridge is OK.

It is the responsibility of the chief radio announcer to ensure that music charts are updated. Local station SOP normally spells out how this is done. Outlets most often require that Pop, Soul and Country charts be maintained. Charts should be updated on a weekly basis or whenever the latest chart has arrived. Keep up with the charts so that your audience is kept abreast of the latest in stateside musical entertainment.

AUDIENCE SURVEY

While the chief radio announcer isn't responsible for conducting an audience survey, this doesn't mean you will not be assisting with your station's annual survey. Most often the chief radio announcer is heavily involved in the survey project, working under the guidance of the section NCOIC or program director. Thus it is important for you to be familiar with the survey process.

No one tells us to conduct surveys, but they are conducted because they are a necessity if you wish to determine the needs of the audience. Review the section in the local SOP that deals with audience surveys. If the SOP does not contain such a section, write one. The section should include a statement on the frequency of surveying the local audience, the sampling methods most effective, and distribution and disposition instructions of the survey findings. Normally, you will want to survey your audience yearly.

Survey Purpose

Define the purpose of the survey by:

- o stating the problem (reason for the survey);
- o identifying the population (group from which you select the people to answer the questions);

- o writing a statement of the objective(s) (what can you expect from the survey),

- o and explaining how the survey findings will be used.

Promote the fact that you are going to conduct the survey so you don't surprise your audience. Also, compile a mailing list of the intended population.

Audience Sample

In conducting an audience survey, it is critical to sample a carefully selected part of the TOTAL AUDIENCE in such a way that the SAMPLE has the same characteristics as the total audience. There are five ways of sampling an audience:

- o RANDOM SAMPLE--respondents are identified through a random selection method;
- o STRATIFIED RANDOM--before a sample is chosen the respondents are broken up into categories such as age, sex grade, education, etc.;
- o CLUSTER--pick up the desired number of respondents in groups;
- o SYSTEMATIC--follows a pattern such as selecting every tenth name on a list of potential respondents;
- o QUOTA--used in the personal interview method; each interviewer is given a set number of persons to query The RANDOM SAMPLE is the method most often used and recommended.

Types Of Questionnaires

Construct a questionnaire to record the respondent's answers. There are two types: self-administered and interview-administered. For self-administered, the respondent fills out the form himself. Someone else records the answers on the interview-administered questionnaires. The main difference is that you must include directions for the respondents with the self-administered questionnaire.

In either case, make the questionnaire easy. When constructing the questionnaire, ask yourself: Who will answer the questions? How will the responses be recorded? What do we really want to find out? Print more questionnaires than are needed. These can be used to train interviewers, provide sample copies and to replace spoiled, damaged or lost copies. Questionnaires should begin with identifying information (name or title of the survey), information about the subject, and then demographic information about the respondent

TYPES OF SURVEYS

With few exceptions, an audience is large and spread out over a fairly large area. Keeping this in mind, three types of surveys should be considered: TELEPHONE, PERSONAL (face-to-face), and MAIL. There are advantages and disadvantages to each of the types, but the MAIL survey is most often used.

If you chose a TELEPHONE survey, train the people you will use to conduct the interview. Use a short list of questions, as people tend to not want to stay on the phone for long periods of time. Don't use personal questions. People are generally suspicious about the use of such questions over the phone. Instruct the interviewers not to be biased when asking questions and to record the answers on the questionnaire.

If you choose the PERSONAL (face-to-face) interview, train the people to be more persistent during the interview. Also, instruct them to use follow-up questions and use visuals to aid recall. Instruct the interviewers not to be biased when asking questions and to record the answers on the questionnaire.

If you choose the MAIL survey, use a cover letter with the questionnaire. The cover letter should state the purpose of the survey, the confidential nature of the responses, address of the sponsoring agency (your unit), the date the letter was completed and the survey number.

Types Of Survey Questions

Extracting factual information is much easier than getting a true measure of opinions. You have several choices as to the kinds of questions for finding out how much someone knows about a subject:

- o OPENED-ENDED--Questions that allow the respondent to answer in his own words;

- o CHECKLIST or MULTIPLE CHOICE--Questions that give the respondent a selection of possible answers. You should include an "other" category where the respondent can indicate a choice not given on the list (this is particularly helpful in pretesting);
- o DICHOTOMOUS (divided into two parts) --Questions that are of the "yes or no" or "true or false" types. You should include "not sure" or "don't know" so that the respondent is not forced into a decision if he is really uncertain;
- o RANK ITEMS--The respondent is given a list of items and asked to assign a rank (1,2,3, etc.) to them. This would be useful in ranking audience preference for different types of radio music shows or programs;
- o AGREE-DISAGREE--This approach asks the respondent to indicate whether he agrees, disagrees or has no opinion with regard to the statement;
- o OPINION SCALES--These are usually three-, five-, or seven-point scales that can be used to measure the intensity of feeling about a subject (e.g., How important are Sources of news to you?). Each source would be rated:

— —	1	— —	very important
— —	2	— —	somewhat important
— —	3	— —	so-so
— —	4	— —	somewhat unimportant
— —	5	— —	not important

Questions should be as short as possible and without any professional jargon or technical words. They should generate exactly the information desired and in terms that would assist the tabulation and statistical analysis.

Do not OVERLAP CATEGORIES (choices like 18-20, 20-22, 22-24). Which age group would you choose if you were 20 years old?

Avoid MULTIPLE-MEANING questions. An example of this would be: Which medium is best for news and entertainment? Each question should limit itself to one point.

Do not use LEADING questions such as: Would you say that you are in favor of more radio news? Reword the question to something like: Are you in favor of more radio news? This is not leading. Avoid using CATCHWORDS or words with emotional connotation (draft-dodger, rapist, "commie"). These words elicit strong feelings that influence how a person will respond.

If feasible, use CHECK questions. These are questions that ask for the same information as another question but are worded differently and placed in different parts of the survey. For example: Do you listen to SEN FM? What is your favorite SEN FM show? would bring out the internal consistency of the responses.

Arrange the questions in a logical manner that will avoid confusion and misunderstanding. Opening questions should be easily answered. Questions that might embarrass the respondent should be towards the end. Keep the knowledge and opinion questions separate and questions dealing with the same subject together. Demographic questions should be placed at the end because the respondent is more likely to describe himself after he has been asked for his knowledge about the subject. Leave a space at the end of the survey for the respondent to express his personal feeling about the survey subject or survey itself. And, always thank the respondent for cooperating.

Questionnaires should always be pretested on a group of the intended population. Pretesting allows you a chance to deal with problems concerning question wording, answer choices and interview procedures. Talking with the pretest group will also point up additional possible questions and problem areas.

Determining Sample Size

When determining sample size, we are concerned with two things: ACCURACY (reliability) and CONFIDENCE (risk). The sample size can be determined by the accompanying table (Figure 1-2) which is indexed by the size of the total population (audience) and the desired level of reliability. The most commonly used error or accuracy tolerance is plus or minus 5 percent with 95 percent confidence limits. This means that 95 of 100 random sample surveys will not vary from the true population percentage by more than plus or minus 5 percent.

For example, if 50 percent of the sample said that they watch the 6 o'clock news, this means that the true viewing audience may be as much as 55 or as little as 45 percent of the total audience. Figure 1-2 shows the sample size you need to achieve different levels of accuracy with 95 percent confidence.

**SAMPLE SIZES NEEDED FOR DIFFERENT LEVELS
OF RELIABILITY**
(95% Confidence Limits)

Population Size	LEVEL OF RELIABILITY			
	+2%	+3%	+4%	+5%
50	49	48	46	44
100	96	92	86	80
250	226	203	177	152
500	414	341	273	218
1000	796	516	375	278
2000	1116	696	462	322
3000	1334	787	500	341
4000	1500	842	522	356
5000	1622	879	536	357

Figure 1-2. Sample Sizes.

For an audience of 4,000 and an error or accuracy tolerance of plus or minus 5 percent with 95 percent confidence limits, we need to randomly select 350 people.

Let's say you decide to use a mail survey to determine how many watch the six o'clock news. Should you only send out 350 questionnaires? No, but you need to ensure that you get at least 350 back. There is a formula to give you the needed number of questionnaires that have to be sent.

$$\frac{350}{\text{---}} = \frac{20}{\text{---}}$$

$$X = 100$$

The typical response rate to a mail survey ranges from 20 to 30 percent. So, the figure of 350 becomes 20 percent of the total number of questionnaires that were sent out. In the above formula, "X" is the number of questionnaires needed to make 350 equal 20 percent. Use 20 percent as the MINIMUM rate of return. To work the formula, multiply 350 x 100 which gives you a figure of 35,000. That figure is then divided by 20 which gives you 1,750 which equals X.

$$350 \times 100 = 35,000$$

$$35,00 \text{ divided by } 20 = 1,750$$

$$1,750 = "X"$$

$$\frac{350}{\text{---}} = \frac{20}{\text{---}}$$

$$1,750 = 100$$

To better ensure that you receive at least 350 questionnaires back from your survey, you need to send out, at the MINIMUM, 1,750 questionnaires.

You have sent out 1,750 questionnaires and have received 350 responses. The survey showed that 80 percent of the respondents watches the 6 o'clock news. Can you safely say that 80 percent of the total audience watches the 6 o'clock news? No, you can't. The 80 percent figure falls within a range called the CONFIDENCE LIMITS.

Figure 1-3 shows the percent spread or variability for different percentages obtained from sample sizes given 95 percent confidence.

**VARIABILITY FOR DIFFERENT SAMPLE SIZES
AND OBTAINED PERCENTAGES
(95% Confidence Limits)**

Sample Sizes	Obtained Percentages											
	99 1	98 2	95 5	90 10	85 15	80 20	75 25	70 30	65 35	60 40	55 45	50 50
10	6.3	8.9	13.8	19.6	22.6	25.3	27.4	29.9	30.2	31.0	31.5	31.6
50	2.8	4.0	6.2	8.5	10.1	11.3	12.3	13.0	13.5	13.9	14.1	14.1
100	2.0	2.8	4.4	6.0	7.1	8.0	8.7	9.2	9.5	9.8	10.0	10.0
200	1.4	2.0	3.1	4.2	5.1	5.7	6.1	6.5	6.7	6.9	7.0	7.1
300	1.1	1.6	2.5	3.5	4.1	4.6	5.0	5.3	5.5	5.7	5.7	5.8
350	1.0	1.5	2.4	3.2	3.8	4.2	4.6	4.8	5.0	5.2	5.4	5.4
400	1.0	1.4	2.2	3.0	3.6	4.0	4.3	4.6	4.8	4.9	5.0	5.0
500	0.9	1.3	2.0	2.7	3.2	3.6	3.9	4.1	4.3	4.4	4.4	4.4

Figure 1-3. Sample Sizes.

To determine the spread or variability, you find the intersection of the sample size and the percentage obtained from the survey. The figure, which is the intersection of 350 (sample size) and 80 percent, is 4.2. This is then subtracted from and added to 80 percent to give you the true percentage of the total audience that watches the 6 o'clock news. When reporting the results to your commander, you can be confident in saying that in 95 of 100 such surveys, the true viewing audience of the six o'clock news is between 75.8 and 84.2 percent. Report this and any other desired information to the commander. Then file the results of the survey IAW local SOP.

RADIO REMOTES

The chief radio announcer from time to time will be called upon to set up for a broadcast originating from a remote location. The types of equipment and the rules of broadcasting differ from that of studio operation. Radio remotes can be handled in different ways. This section will present one avenue of approach.

Types Of Remotes

Remote broadcasts cover many types of events. The Armed Forces Radio Service outlet in Athens, Greece, is a prime example. Each year the outlet receives requests for remote broadcasts from the sports office, the education center, officer and NCO wives clubs and other base agencies. Basically, anything that would be of interest to the military population is worth considering. The station in Athens broadcasts from remote locations covering base sporting events (softball, football and basketball), at the post exchange during Education Day (talking to college registrars and prospective students), and sometimes even taking local radio programs to locations such as the recreation center and cafeteria. Remotes not only help draw crowds to help pass out information but are also good public relations for your outlet.

First Things First

What's first on the list of things to do? Let us suppose that you've just received a request from the sports office to cover the base football team. This is backed up by a personal request from the base commander. Do you immediately say yes? Not unless you've already evaluated the event. Never commit yourself until you've researched the request. What to look at before you commit your resources:

- o Will broadcasting this event meet audience needs?
- o Is this a valid request? Does it violate DoD or AFRTS regulations?
- o Do you have personnel who are knowledgeable and capable of doing play-by-play coverage? Are they available for the mission?
- o What type of equipment do you have available? Are there power sources available at the remote location? Talk to the station engineer to find out if the broadcast is feasible.

- o What type of facility will the team broadcast from? Will personnel and equipment be protected from the elements? Football games are not normally called due to inclement weather.
- o Don't forget about transportation? You'll need to transfer equipment and personnel to the remote location.
- o Present the request for coverage and your evaluation to the station manager. Never go into his office without research to back up your decision. A good station manager or program director will always take a critical look at any requests for a remote broadcast. If you want to broadcast the event, then have your facts in order.

Preproduction Meeting

The preproduction meeting is where the whole operation starts coming together. The sections below should be present.

- o Traffic and continuity. These folks are normally responsible for preparing the station program log and assigning spot productions. Promotion spots need to be produced to advertise the game. Never underestimate the need for publicity. The halftime period needs to be blocked out as to what is going to happen when. Interviews, a review of the first half action, news and sports updates all need to be scheduled.
- o Engineering. The engineering section makes it possible to get the remote signal back to the station. Maintenance personnel are responsible for testing and setting up the remote equipment and ensuring the proper power sources are available.
- o Radio Operations. The play-by-play announcer, the color man and the statistician all need to be present for this meeting. Together you and the play-by-play team devise a format for use during the game. Intros and outros need to be written along with standard introduction, spot break and closing cues.
- o Sports office. This provides instant communication with a sports office representative who can fill you in on questions about the remote broadcasting area and game day operations.
- o Public affairs. A representative from the public affairs office will provide you with another medium for getting the word out to the base population.

Have the engineering and traffic and continuity sections provide you with written status reports on their efforts. The chief radio announcer must keep a file on all action generated by the remote broadcast. This provides you with information for future remotes.

What About The Visiting Team?

Chances are the Armed Forces Radio Service (AFRS) has an outlet serving the visiting team. Call the chief radio announcer at the outlet and ask for assistance in gathering information on the team. Normally you'll be able to get names, uniform numbers, biographical information and possibly a rundown on the key players. If technically possible, offer the football broadcast to the outlet. AFRS Athens, with the assistance of personnel at the base switchboard, was able to transmit games all over the Mediterranean. This needs to be planned far in advance to guarantee the availability of phone lines.

The Big Day

The day of the game has arrived, equipment is ready, talent is in place and your fingers are crossed hoping that nothing goes wrong. Remember the broadcaster's friend Mr. Murphy; whatever can go wrong, will go wrong when you least expect it. Anticipate problem areas such as equipment malfunctions or inclement weather. Ensure that a station engineer is present at all times during the game.

The Wrap Up

The game is over, equipment has been returned back to the station and personnel have been released. You're finished, right? Wrong. While the production of the game is still fresh in your mind write your after-action report. Try to be thorough and keep in mind the report will be used for reference in further sports broadcast productions. Point out the things that went well and the areas where you had problems. Your after-action report should then be placed in the game file. This file provides you with a good head start on what to direction to take during your next football broadcast.

MANAGING AN AFRTS RADIO PROGRAM PACKAGE

Assign someone in the radio section the responsibility of maintaining each radio shipment received and sent forward. This job is often the responsibility of the record librarian. You should ensure that missing, damaged or defective items are identified. The chief radio announcer should then notify AFRTS-BC directly. Notification also is required if more than five days elapse after the expected arrival date of a shipment. For circuited materials, the chief radio announcer should notify the preceding outlet as well as those following on the circuit.

Audio materials have to be separated by program type (e.g., RU, FML, RP, etc.). Check to see that RP, RU, 40-C and FMP materials are filed in accordance with the local program schedule and SOP.

Ensure that outgoing material is processed for shipment. The RU materials should be inventoried, packaged, labeled and shipped to the next station on your circuit (if needed). The following procedures apply:

- o inventory all items to be shipped,
- o pack the items in sequentially numbered boxes,
- o annotate the inventory to show the box number in which each item was shipped and the shipping dates,
- o enclose one copy of the inventory in box number one,
- o forward one copy of the inventory, by letter, to the receiving station, and
- o retain one copy of the inventory in the section/department files.

When local destruction of radio materials is authorized, inventory the records and then deface both sides. Turn in the records to a military/DoD property disposal officer and obtain a turn-in certificate. If this is not practical, dispose of the records, prepare a certificate of destruction and have it signed by a representative of the outlet performing the destruction and the OIC or station manager who witnessed the disposal. A copy of the turn-in certificate or the certificate of destruction, along with a copy of the inventory, will be forwarded to AFRTS-BC. Retain copies of these documents at the station for one calendar year. DoD 5120.20 R APPENDIX F governs the destruction of record materials.

When AFRTS authorizes the local destruction of FM stereo tapes, they will be degaussed (erased) and used for other purposes within the station. Otherwise the destruction process is the same as for records. When AFRTS-BC authorizes the local destruction of other types of radio materials, special instructions will be provided. If radio program material is lost, damaged or destroyed due to causes other than normal wear and tear, a report of survey will be prepared. Upon approval, the findings will be reported to AFRTS-BC.

CONUS STATIONS

CONUS stations are not part of the AFRTS system and therefore are authorized to use only news, entertainment and command information programs produced by the U.S. Army Command Information Unit (USACIU). Programs furnished by this agency do not have to be returned. They are to be disposed of locally via property disposal or other controlled procedures. Soldiers Radio And Television (SRTV) programming may be requested. Commercial records and tapes are usually budgeted for and purchased locally.

MAINTENANCE

The chief radio announcer must regularly check the operability of radio control room equipment. Conduct a daily check of the control rooms. Keep a maintenance log for the announcers to annotate when problems occur. Ensure this information is passed along to the section supervisor or studio maintenance technician in accordance with local SOP. Keep your staff announcers informed of equipment status to avoid unexpected problems during their air shift or production time.

SUPPLIES

Broadcast supplies, such as cotton swabs, razor blades, tape cartridges, reel-to-reel tape, special radio operation forms and other items must be kept in stock. It is your responsibility as chief radio announcer to ensure announcers have the tools to do their job.

THE BOTTOM LINE

The bottom line in any successful broadcast operation is to be thoroughly knowledgeable of your radio operation and the personnel who work for you. Know their weaknesses and strong points, and use those to your advantage. Ensure that when you assign an announcer a program, he has all the programming aids necessary to perform the task. Make sure jingles and music propellants are up to date. Check that emergency fill material is available in the studio in accordance with the local SOP. Follow local SOP in posting alert/emergency announcement material in the studio. Study the regulations and SOP. Always provide answers to questions from broadcasters. STAY ON TOP OF EVERYTHING WITHIN THE RADIO DOMAIN.

PRACTICE EXERCISE

LESSON # 1

PERFORM AS A CHIEF RADIO ANNOUNCER

SUBCOURSE NO. DI0450

INSTRUCTIONS:

Review the material in this lesson. Answer the questions below by circling the "T" or "F" next to each question. Compare your answers with the answer key on the next page.

- T F 1. The station's program director is normally responsible to the station manager for establishing formats for all local shows.
- T F 2. The objective of the local music program format is to deliver the maximum command information with minimum annoyance.
- T F 3. Local program music selection should be left up to the show announcer.
- T F 4. Most Armed Forces radio stations sandwich spots singly between songs.
- T F 5. One recognized way to critique a staff announcer is by sitting in the studio during his show.
- T F 6. One of the most important responsibilities the chief radio announcer has is reviewing materials for broadcast release.
- T F 7. DoD Regulation 5120.20 R provides for locally produced news analysis and commentary.
- T F 8. Propriety is doing what is right and proper.
- T F 9. Station clients are organizations, recognized by the station manager, who wish to have their messages delivered to the audience.
- T F 10. A semiannual inventory of all AFRTS record materials must be conducted.

- T F 11. AFRTS records should never leave the station.
- T F 12. Before committing yourself to a remote broadcast, you must thoroughly evaluate the request.
- T F 13. Local destruction of FM stereo tapes is accomplished by bending and striping the reels of tape.
- T F 14. Normally, AFRTS outlets survey every two years.
- T F 15. The Chief radio announcer should conduct a weekly check of the station's control rooms.
- T F 16. The systematic approach is the most often used method to sample an audience.
- T F 17. Questionnaires should lead off requesting demographic information about the respondent.
- T F 18. Open-ended questions allow the respondent to answer in his own words.
- T F 19. Questionnaires should always be pretested on a group of the intended population.
- T F 20. When determining population sample size, we are concerned with accuracy and confidence.

ANSWER KEY

PRACTICE EXERCISE

LESSON # 1

SUBCOURSE NO. DI0450

PERFORM AS A CHIEF RADIO ANNOUNCER

1. TRUE (page 3)
2. TRUE (page 3)
3. FALSE (page 3)
4. FALSE (page 5)
5. FALSE (page 6)
6. TRUE (page 11)
7. FALSE (page 13)
8. TRUE (page 12)
9. FALSE (page 10)
10. TRUE (page 15)
11. FALSE (page 14)
12. TRUE (page 23)
13. FALSE (page 27)
14. FALSE (page 15)
15. FALSE (page 27)
16. FALSE (page 16)
17. FALSE (page 17)
18. TRUE (page 17)
19. TRUE (page 19)
20. TRUE (page 19)

LESSON TWO

ESTABLISH AND MAINTAIN A BROADCAST SOP

46R Soldier's Manual Task: 214-177-3454

OVERVIEW

TASK DESCRIPTION:

In this lesson you will learn to establish and maintain a broadcast SOP.

LEARNING OBJECTIVE:

ACTIONS:	Describe the information and steps required to establish and maintain a broadcast SOP.
CONDITIONS:	You will be given the material presented in this lesson.
STANDARDS:	Establishing and maintaining a broadcast SOP will be in accordance with 46R Soldier's Manual Task 214-177-3454.
REFERENCES:	The Material contained in this lesson was derived from the following publications: DA PAM 310-1 DA PAM 310-2 DA PAM 310-3 STP 46-46R14-SM-TG 1/2/3/4 Broadcast Journalist Soldier's Manual and Trainer's Guide

ESTABLISH AND MAINTAIN A BROADCAST SOP

INTRODUCTION

To function smoothly and efficiently, each section in a broadcast operation operates under the guidance of standing operating procedure (SOP). The SOP provides information consisting of responsibilities and procedures used to accomplish the mission. Your section SOP should be written as an orientation tool for newcomers and as reference material for current staff members. A newly assigned broadcaster should be able to read the section SOP and understand the mission and the procedures used. Your SOP will help avoid panic situations that arise from a mission requiring a long-unused procedure. A staff member simply looks it up in the SOP and he is on the way to completing the assigned task. A thorough section SOP is a valuable and time-saving document.

STANDING OPERATING PROCEDURE

For the purpose of this lesson we will only be concerned with the process of outlining the steps that pertain to one procedure. The process may then be repeated to include all the procedures in your operation, providing you with a complete SOP.

Your avenue of approach should be to determine which tasks in your section are recurrent. Select one of those procedures to work with. As an example, this lesson will use the record library procedure of inprocessing AFRTS shipments.

Writing The Procedure

There are several steps to assist you in writing the procedure.

- o Observe section personnel performing the procedure and note the steps in the procedure.
- o Make note of any deficiencies.
- o Ensure the procedure meets all requirements of the existing publications and directives.

- o If necessary, modify the procedure to make it efficient and to make it conform to all current policies.

NOTE: One procedure that must be addressed in any broadcast operation is ordering broadcast supplies. The method for this procedure should be structured according to local operating procedures of the station network. Confer with the station's property book officer for the proper forms and their completion. Instructions for ordering broadcast supplies should be part of the broadcast SOP.

Title

To begin your procedure, start with the title, the current date and SOP number. The number can be obtained from the administration office or derived from the section for internal use.

EXAMPLE:

INPROCESSING INCOMING AFRTS RECORD LIBRARY MATERIALS

19 NOV 95
No. 21-5

Purpose

Next on your list is the purpose section. Write a paragraph indicating briefly the system, activity or procedure.

EXAMPLE:

PURPOSE. Explain the steps necessary to unpack, inspect, inventory, catalog, file and account for AFRTS radio programming materials in accordance with DoD Regulation 5120.20 R, APPENDIX F and the network and local SOP's.

Scope

Write a scope section indicating to whom the procedure applies.

EXAMPLE:

SCOPE. The procedure outlined in this section pertains to all assigned personnel.

Definitions Section

Do not overlook the definitions section. Explain the terms and acronyms that pertain to the procedure.

EXAMPLE:

DEFINITIONS.

RL	Radio Library (unit)
BP	Radio Priority (unit)
RU	Radio Unit
RPL	Radio Priority Library (combination of RP and RL)
40-C	American Top 40 and American Country Countdown
FML	FM Library
FMP	FM Priority
TP	Tops in Pop
P	Popular
C	Classical
W	Western
MB	Marching Band
SEL	Sound Effects Library
PML	Production Music Library
MISC	Miscellaneous
AFRTS-BC	Armed Forces Radio and Television Service Broadcast Center
X	Christmas Music
IAW	In accordance with

Responsibilities

Each SOP must have a responsibilities section explaining the major functions of the supervisor and subordinates involved in the procedure.

EXAMPLE:

RESPONSIBILITIES.

All radio section personnel are responsible for knowing the steps involved in unpacking, inspecting, inventorying, cataloging, filing and accounting for AFRTS radio program materials.

The supervisor is responsible for ensuring that all steps in the inprocessing procedure are carried out correctly in accordance with station standing operating procedure and DoD Regulation 5120.20 R, APPENDIX F.

The Procedure Section

The next step in the process is to write a procedures section, detailing step-by-step how the procedure is to be performed. Also, include in this section performance standards and quality control information.

EXAMPLE:

Radio personnel assigned to process incoming AFRTS records must adhere to the following guidance.

1. When incoming radio materials arrive at the station or outlet, you must first unpack the shipment. Then, inspect the material to ensure all items are present and not damaged. You should check the records and tapes against the packing list for accountability. Check for damage or defects. If any of the material is damaged or defective, notify AFRTS-BC directly. The notification should include disposition instructions for the damaged material. AFRTS-BC may direct the material to be returned for inspection or may authorize local destruction.

NOTE: Prompt notification is also required if more than five days have elapsed after the expected arrival date of a shipment. For circuited materials, the outlet should notify the preceding outlet as well as those following on the circuit. A limited number of copies of tapes and discs are normally held at AFRTS-BC as replacements for damaged or lost shipments. This small supply is retained for a short period of time and is then recycled. Therefore, prompt notification is essential. The message and mailing address for AFRTS can be found in DoD Regulation 5120.20 R, APPENDIX F.

2. The audio materials should then be separated according to program type (e.g., RU, FML, RP, etc.). Artist/title cards should also be separated. You should also separate all other programming material, such as music charts, bio sheets, newsletters, FML music listings, etc.
3. The RL materials are then separated by music type or category (e.g., W, C, P, MB, MISC, etc.). RL record covers are then labeled on both sides in both the left and right-hand upper corners with the proper classification and number.

EXAMPLE:

P-24506/7

P-24506/7

To further assist announcers with selecting music, popular music covers will be color coded with a one inch centered mark along both outside edges of the record covers.

COLOR CODES:

- o Red. Albums with various artists.
- o Yellow. Albums featuring various artists with hits from the past.

The FML tapes are then filed chronologically in the program bins located in the record library. The artist/title cards are then filed alphabetically. The FM music listings are attached in chronological order to the clipboard in the library identified for that purpose.

4. Radio specials are sometimes made available by AFRTS-BC. The type and timeliness of the material will determine whether the shipment is provided on disc or tape and which outlet will receive it. Instructions for use and disposition will appear on the packing lists.
5. A supervisor's evaluation guide is provided in Annex A.

Files

If files are involved in the procedure, write a FILES section indicating the location of the files and explaining what files are to be established and maintained.

Example:

FILES.

The AFRTS artist/title card files are located in the record library. The chief radio announcer is responsible for ensuring the files are up to date and in order.

Reference Section

If applicable, write a references section, listing all of the publications that govern, guide or pertain to the procedure.

EXAMPLE:

REFERENCES.

DOD REGULATION 5120.20 R, APPENDIX F STP 46-46R 1/2/3/4
SOLDIER'S MANUAL AND TRAINER'S GUIDE FOR BROADCAST
JOURNALIST, AUGUST 1988.

Annexes

If examples of completed procedures are needed, prepare an annexes section. Include in this section sample forms, records, and formats that illustrate the procedure. Alphabetically label each annex (e.g., Annex A, B, etc.).

EXAMPLE:

ANNEX A

Guide for evaluating the inprocessing procedure of AFRTS radio program shipments.

Checklist:

- 1. Unpacks incoming radio shipment.
- 2. Inspects radio materials against the packing list for accountability and for damage.
- 3. Directly notifies AFRTS-BC if any of the shipment is lost, damaged or contains defects.
- 4. Notifies preceding station and next station on the circuit.
- 5. Separates and labels program materials in accordance with SOP.
- 6. Files RL records IAW SOP.
- 7. Files FML tapes chronologically, IAW SOP.
- 8. Files artist/title cards alphabetically.
- 9. Files FM music listings IAW SOP.

- 10. Places radio materials in the appropriate location prior to airing, IAW SOP.
- 11. Processes outgoing radio materials to the next station on the circuit, if requested.
- 12. Destroys RP materials IAW AFRTS-BC DP-1 and files destruction documents.
- 13. When authorized, locally destroys records and files destruction documents.
- 14. When authorized by AFRTS-BC degausses FM tapes to be used for other purposes within the station. If not authorized, destroys FM tapes and files destruction documents.
- 15. Provides AFRTS-BC a copy of destruction documents for items #12, #13, #14.

Now that all of the steps in the procedure are completed it's time to put together the draft. An example of the procedure starts on the next page.

THE PROCEDURE DRAFT

INPROCESSING INCOMING AFRTS RECORD LIBRARY MATERIALS

19 NOV 95
No. 21-5

PURPOSE. Explain the steps necessary to unpack, inspect, inventory, catalog, file and account for AFRTS radio programming materials.

SCOPE. The procedure outlined in this section pertain to all assigned personnel.

DEFINITIONS.

RL	Radio Library (unit)
BP	Radio Priority (unit)
RU	Radio Unit
RPL	Radio Priority Library (combination of RP and RL)
40-C	American Top 40 and American Country Countdown
FML	FM Library
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MB	Marching Band
SEL	Sound Effects Library
PML	Production Music Library
MISC	Miscellaneous
AFRTS-BC	Armed Forces Radio and Television Service Broadcast Center
X	Christmas Music
IAW	In accordance with

RESPONSIBILITIES.

All radio section personnel are responsible for knowing the steps involved in unpacking, inspecting, inventorying, cataloging, filing and accounting for AFRTS radio program materials.

The supervisor is responsible for ensuring that all steps in the inprocessing procedure are carried out correctly in accordance with station standing operating procedure and DoD Regulation 5120.20 R, APPENDIX F..

Radio personnel assigned to inprocess incoming AFRTS records must adhere to the following guidance.

1. When incoming radio materials arrive at the station or outlet, you must first unpack the shipment. Then inspect the material to ensure all items are present and not damaged. You should check the records and tapes against the packing list for accountability. Then check for damage or defects. If any of the material is damaged or defective notify AFRTS-BC directly. The notification should include disposition instructions for the damaged material. AFRTS-BC may direct the material to be returned for inspection or may authorized local destruction.

NOTE: Prompt notification is also required if more than five days have elapsed after the expected arrival date of a shipment. For circuited materials, the outlet should notify the preceding outlet as well as those following on the circuit. A limited number of copies of tapes and discs are normally held at AFRTS-BC as replacements for damaged or lost shipments. This small supply is retained for a short period of time and is then recycled. Therefore, prompt notification is essential.

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3. Separate RL materials by music type or category (e.g., W, C, P, MB, MISC, etc.). RL record covers are then labeled on both sides in both the left and right hand upper corners with the proper classification and number.

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4. Radio specials are sometimes made available by AFRTS-BC. The type and timeliness of the material will determine whether the shipment is provided on disc or tape and which outlet will receive it. Instructions for use and disposition will appear on the packing lists.
5. A supervisor's evaluation guide is provided in Annex A.

Files

The AFRTS artist/title card files are located in the record library. The chief radio announcer is responsible for ensuring the files are up to date and in order.

REFERENCES.

DOD REGULATION 5120.20 R, APPENDIX F STP 46-46R 1/2/3/4
SOLDIER'S MANUAL AND TRAINER'S GUIDE FOR BROADCAST
JOURNALIST, AUGUST 1988.

ANNEX A

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Checklist:

- 1. Unpacks incoming radio shipment.
- 2. Inspects radio materials against the packing list for accountability and for damage.
- 3. Directly notifies AFRTS-BC if any of the shipment is lost, damaged or contains defects.
- 4. Notifies preceding station and next station on the circuit.
- 5. Separates and labels program materials in accordance with SOP.
- 6. Files RL records IAW SOP.
- 7. Files FML tapes chronologically, IAW SOP.
- 8. Files artist/title cards alphabetically.
- 9. Files FM music listings IAW SOP.
- 10. Places radio materials in the appropriate location prior to airing, IAW SOP.
- 11. Processes outgoing radio materials to the next station on the circuit, if requested.
- 12. Destroys RP materials IAW DoD Regulation 5120.20 R, APPENDIX F and files destruction documents.
- 13. When authorized, locally destroys records and files destruction documents.
- 14. When authorized by AFRTS-BC degausses FM tapes to be used for other purposes within the station. If not authorized, destroys FM tapes and files destruction documents.
- 15. Provides AFRTS-BC a copy of destruction documents for items #12, #13, #14.

Approval

If required, submit the section draft procedure for approval, IAW local SOP. Make corrections as necessary and prepare the final procedure. Include the signature block of the person who authorized the procedure (you, your supervisor, network commander, station manager, etc.). Determine the number of copies needed and have the procedure reproduced. Distribute the necessary copies to section personnel and file the procedure in the section files. Provide one copy to your supervisor.

PRACTICE EXERCISE

LESSON # 2

ESTABLISH AND MAINTAIN A BROADCAST SOP

SUBCOURSE NO. DI0450

INSTRUCTIONS:

Review the material in this lesson. Answer the questions below by circling the "T" or "F" next to each question. Compare your answers with the answer key on the next page.

- T F 1. The SOP provides information consisting of responsibilities and the procedures used to accomplish the mission.
- T F 2. The Scope section of the procedure outlines the duties of the section supervisor.
- T F 3. Instructions for ordering broadcast supplies should be part of the station SOP.
- T F 4. The procedure section should be written detailing step by step how the SOP is assembled.
- T F 5. If required, submit the section draft procedure for approval in accordance with local SOP.

ANSWER KEY

PRACTICE EXERCISE

LESSON # 2

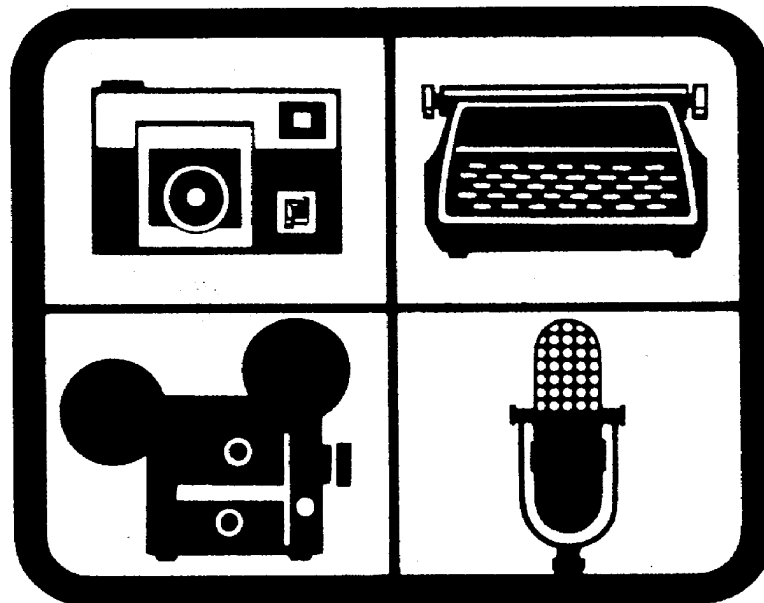
SUBCOURSE NO. DI0450

ESTABLISH AND MAINTAIN A BROADCAST SOP

1. TRUE (page 34)
2. FALSE (page 35)
3. TRUE (page 35)
4. FALSE (page 37)
5. TRUE (page 45)

PLAN AND PRODUCE AN ELECTRONIC
FIELD PRODUCTION/TELEVISION
SPOT ANNOUNCEMENT

PUBLIC AFFAIRS



THE ARMY INSTITUTE FOR PROFESSIONAL DEVELOPMENT
ARMY CORRESPONDENCE COURSE PROGRAM

IPD



**PLAN AND PRODUCE AN ELECTRONIC FIELD PRODUCTION/
TELEVISION SPOT ANNOUNCEMENT**

Subcourse Number DI0460

EDITION 9

US Army Public Affairs Proponent Center
Fort George G. Meade, Maryland

5 Credit hours

Edition Date: September 1989

SUBCOURSE OVERVIEW

This subcourse contains two lessons, giving the senior broadcaster the tools necessary to plan and produce electronic field productions and television spot announcements. These lessons will provide a general knowledge and understanding of television spot production and electronic field productions.

You must have a basic knowledge of military broadcasting prior to taking this subcourse. It is suggested you complete Army correspondence subcourses DI 0310, Techniques of Broadcast Journalism; DI 0350, Electronic Journalism; and DI 0370, Basic Television Lighting and Scenery.

This subcourse reflects the doctrine current at the time the subcourse was prepared. In your own work situation, always refer to the latest publications.

The words "he," "him," "his," and "men," when used in this publication, represent both the masculine and feminine genders unless otherwise stated.

TERMINAL LEARNING OBJECTIVE

Task: In this subcourse you will learn the duties and responsibilities of a senior broadcaster when planning and producing electronic field productions and television spot announcements.

Conditions: You are given the material presented in this lesson.

Standards: You will demonstrate a basic understanding of properly planning and producing electronic field productions and television spot announcements.

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LESSON ONE

PLAN/PRODUCE AN ELECTRONIC

FIELD PRODUCTION

46R Soldier's Manual Task: 214-177-3415

OVERVIEW

TASK DESCRIPTION:

In this lesson you will learn the supervisor's responsibilities in planning and producing an electronic field production.

LEARNING OBJECTIVE:

ACTIONS: Describe the areas of responsibility in planning and producing an electronic field production.

CONDITIONS: You are given the material presented in this lesson.

STANDARDS: Define or identify the responsibilities in planning and producing an electronic field production (EFP) and plan and produce an EFP in the manner described in this lesson.

REFERENCES: The material contained in this lesson was derived from the following publications:

STP 46-46R-SM-TG 1/2/3/4/Broadcast Journalist Soldier's Manual and Trainer's Guide; Television Production, second edition, Wurtzel, Alan.

PLAN/PRODUCE AN ELECTRONIC FIELD PRODUCTION

INTRODUCTION

Special event programs, e.g., Armed Forces Day, German-American Volksfests and post sports championships, are produced for television at the remote location. This is: called "electronic field production" (EFP). EFP uses a wide range of production techniques, which all have one thing in common: the use of portable television production equipment. This chapter provides a basic look at planning and producing a special event program.

EFP is used when time constraints are not a problem and when higher production values and technical quality are important considerations. EFP allows you the time to properly plan for the event and to attend to all the details as though it were produced in the studio.

EQUIPMENT

Electronic field production requires a wide variety of equipment. A production crew may use equipment that is almost identical to that used by an electric news gathering crew. More complex productions may require high quality cameras, audio equipment, lighting gear and videotape recorders. A simple EFP shoot may only require loading up in a car, while a more complex shoot may call for the use of a production van (Figure 1-1, page 2).

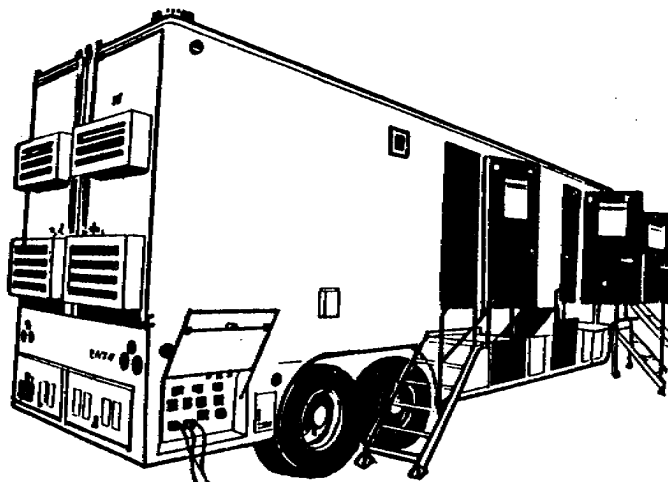


Figure 1-1. Production Van

Cameras

The types of cameras used for an EFP will vary. High-quality shoulder-mounted cameras (Figure 1-2, page 3) are the norm. They offer a great deal of mobility and flexibility, which can come in handy during a special-event production. Accessories such as special lenses, filters and collapsible dollies, in addition to tripods and shoulder mounts, are also used.

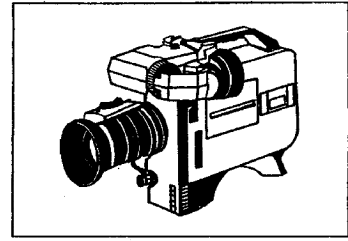


Figure 1-2. EFP Camera

Before you actually shoot, several equipment limitations must be considered. Low or high light levels in the shooting environment adversely affect camera/recorder operations. Extreme temperature changes will also affect equipment operations. All video equipment is fragile. Handle the equipment with care, and don't expose it to sand, salt, heavy rain, etc.

Army correspondence subcourse DI 0350, Electronic Journalism, will provide you with a basic knowledge of EFP cameras.

Audio

Audio needs will vary according to the special event. Simple productions may require a hand-held or lavalier microphone (mike), while a more elaborate production will involve boom and wireless microphones.

Hand-held and lavalier microphones are normally used in situations where an on-camera microphone is acceptable. Shotgun mikes and fishpole boom microphones are used so as not to be seen.

Wireless microphones are becoming more common on EFP shoots because of their versatility. The wireless microphone produces excellent sound quality and avoids the problems associated with trailing cable or a need for off-camera boom mikes.

Elaborate EFP shoots may use multiple mikes. In this case, you'll need a sound mixer, preferably battery powered, that allows you to balance and mix a number of microphones simultaneously.

EFP audio requirements should include extra mike cables, gaffer tape, and headphones for monitoring audio pickup, spare batteries, fuses and windscreens for the microphones.

Video Tape Recorders

Electronic field productions are videotaped for editing later during postproduction. The most common videotape recorder (VTR) used for an EFP is the 3/4 inch format (Figure 1-3, page 4). However, the 1/2 inch camcorder, a single system camera/recorder, is fast becoming the most popular choice for electronic field productions. The 1/2 inch camcorder is smaller, lighter, and offers flexible production capability.

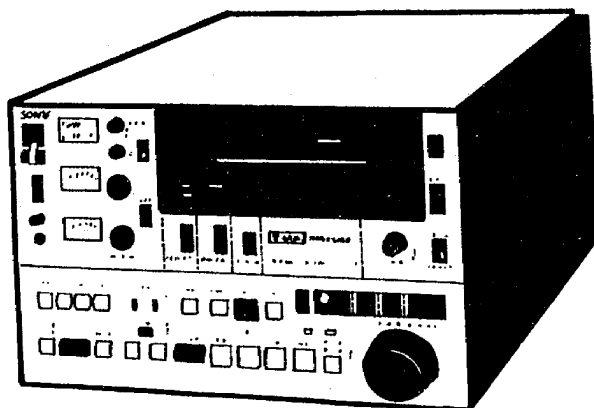


Figure 1-3. 3/4 Inch Format

Lighting

Television cameras will not produce quality pictures without proper lighting. Television lighting is an art in itself. Proper lighting can create certain moods and effects. EFP often requires that proper lighting be set up to control illumination and to create whatever lighting effects are needed.

EFP shoots will normally require lensless spotlights, floodlights, mounting devices (stands, wall units), barndoors, screens, gels, and sufficient amounts of electric powercable. Army correspondence subcourse DI 0370, Basic Television Lighting and Scenery, will provide you with an understanding of the fundamental techniques of lighting, lighting equipment and the three-point lighting method.

Assess Need

Prior to committing to produce any special event program, you have to assess the need for your intended product. Generally, input on whether to produce a new project comes from station management. There are times, though, when you'll receive input from the local public affairs officer, commanders of units you serve and leaders of community organizations.

Identify Objective and Target Audience

Once you've assessed the need for the broadcast, the next step is to determine your objective.

- o What is your goal? Is the EFP to inform, educate or entertain?
- o Whom do you want to reach and why do you want to reach them?
- o Is there more than one audience?

Finally, write a concise statement, e.g. "The objective of this program is to inform the military community about the many exciting areas to travel throughout Europe."

Once this process is completed, you'll know your audience and what you have to accomplish. By identifying the direction this program will take, you have a basis on which to begin the EFP project.

Formulate Ideas and Research

Up to this point, we have determined there is a need for this project, and identified our objective and target audience. The next step in the process is to formulate ideas and do research. This is the point where you'll need to bring in some of the principal players, i.e. the director and the writers. In some cases, you might be the producer, director and the writer of the entire production. It all depends on the size and nature of your EFP.

Gather all the information you can about the special event. You can never do enough research. Meet with the director and writers, go over the information and brainstorm ideas about how to present the special event on television. A brainstorming session stimulates creativity. One person might bring up a good idea and another will improve on it with ideas of his own. Write down everything you talk

about. Once the list of ideas has been compiled, narrow it down until you and the group come up with the direction to take. As producer of the EFP you have the final say, but by including other players on the project in the decision-making process, you already create an atmosphere of teamwork.

Write the Script

Write a script, if necessary, focusing on one, central theme of the special event. Make sure the lead attracts the viewer's attention. Use colorful language to avoid just telling the viewer what is happening. Keep the viewer involved in the program by maintaining his interest. Draw your ideas out on storyboards. This helps you visualize how you want your program to appear. It will also help in expressing your ideas to others involved in the EFP project. Army correspondence subcourse DI 0310, Techniques of Broadcast Journalism, will provide you the basics of broadcast script writing.

Reviewing Materials for Broadcast Release

One of the most important responsibilities you will have as a producer is to review materials for broadcast release. Once a product airs, it can't be retrieved. Local SOPs should provide basic guidance when it comes to release of material for broadcast.

All broadcast products aired must conform to **SECURITY, ACCURACY, POLICY** and **PROPRIETY**. Security measures for the Army are outlined in AR 380-5. Disclosure of classified information definitely violates this regulation. This would include any visual of areas or equipment that are classified. Always check first when in doubt on a shoot. Also, comments that are sensitive (but not classified) should not air. An example of this would be a missile crewman who proudly announces that it "only takes his crew 15 minutes to set up and fire from a field location." The comment is not classified but could be helpful to an enemy or potential enemy.

Information contained in the broadcast product must be accurate. Check the spelling of names; make sure the ranks are correct and unit designations are correct (e.g., there are batteries not companies in field artillery), etc. Even stories that are generated and released by the PAO should be checked for accuracy.

Privacy Act

The Privacy Act prevents us from broadcasting certain information about an individual without that persons permission. This includes street addresses, social security numbers, telephone numbers, information contained in medical and personnel files, and information pertaining to on-going disciplinary actions that would clearly be an unwarranted invasion of personal privacy.

Libel

Material containing information considered libelous must be deleted from a program intended for broadcast. If this is not possible, the program will have to be replaced with a backup. You may not say anything about persons, groups, organizations or businesses that exposes them to hatred or contempt, lowers them in the esteem of others, causes them to be shunned, or injures their business. Some libelous words are:

“drunk, radical, dishonest, unethical, a cheat, criminal (unless convicted), traitor,” etc.

Propriety

Propriety is doing what is right and proper. You must ensure broadcast material is in good taste and does not violate the sensitivities of the listening/viewing audience. There are several types of material that would prevent a program from being aired: vulgarity, obscenity, gore, perversion and excessive violence.

Regulations

As the program producer, it is essential that you be familiar with public affairs policy. Two regulations that you must have a good understanding of are AR 360-5, Army Public Affairs Public Information, and AR 360-81, Command Information Program. In addition, the broadcast supervisor must be familiar with AR 340-17, Release of Information from Army Files and Records; AR 360-80, Release of Information When More Than One Service is Involved in Accidents or Incidents; AR 380-5, Department of The Army Information Security Program; DoD Directive 5122.10, American Forces Information Service; and AR 360-7, Army Broadcast Service.

PREPRODUCTION PLANNING

Site Selection

Where will you shoot your EFP? For example, certain field productions such as changes of command and sporting events make it imperative that you shoot at those locations. While others, such as a command information spot announcement, require a search for the ideal area to fit in with the intended message of your production. Later in this lesson we'll discuss conducting location surveys. This will give you further ideas on what to look for prior to selecting a site.

Talent Selection

When selecting on-camera and voice-over personalities for the EFP, ensure that the talent meet the needs of the production. Are they able to convey the intended message effectively? Often, producers grab the nearest broadcaster and assign him to a production. The voice and appearance of the announcer play an important part in any production. A monotone announcer would not exactly motivate an audience to go out and do what you're trying to entice them to do. To sell an idea, the announcer must have an on-air presence and a voice that can get people excited about your message. As far as appearance, you wouldn't want an overweight broadcaster trying to sell fitness in a spot production. Your production would lose all its credibility.

Crew Selection

Finding the right people to fill out your production crew is sometimes a difficult process. Personnel may be assigned to different projects and unable to assist you. In the military, we have to take into account leaves, work schedules and other duty requirements. Crew selection should start as soon as possible to ensure the people you want are available.

Final Script Approval

Ensure the script has been circulated to all the departments involved for comments and suggestions. Incorporate the feedback and send the script through the proper channels for final approval. The script might have to be approved by the

program director, station manager, public affairs officer, or even the local commander. Don't let the chain of command be surprised by the content of your production. Keep the lines of communication open to avoid possibly embarrassing situations.

TRANSPORTATION

Believe it or not, transportation arrangements often are not made until right before the event. You must include this in your preproduction planning. When considering your transportation needs, look at:

- o number of personnel.
- o amount of equipment.
- o type of vehicle required.
- o arrangements for fuel (coupons, money, interservice agreements for refueling, etc).
- o where you're getting the transportation (motorpool, renting).
- o who will service the vehicle if it breaks down en route. If it does, will you be able to get a replacement sent out to your crew?

FOOD AND LODGING

If you want to end up on the bad side of your crewmembers, then overlook arrangements for food and lodging. A well-fed, comfortable crew will give you maximum output when working on the production. If your crew is going to require lodging, reservations should be made well in advance. Once the reservations are made, it doesn't hurt to call and verify that you do indeed have lodging space reserved.

Handling meals for your crew can sometimes be a problem. If your crewmembers are on TDY, they will receive reimbursement for their meals. The problem is not money for the meals, but where to eat. Sometimes an EFP may take place in a location where meals are not readily available. You must be aware of this possibility. Finding out at lunch time that there is nowhere to eat could really put you in a bind. Make arrangements for sack lunches or field rations. Your dining facility NCOIC should be able to help you out.

You've selected the EFP site, the talent and the crew, and the final script has been seen and approved by the chain of command. Now it's time to assemble all the elements of your EFP.

Start by having a preproduction conference. At this meeting require all the people involved to be present. Brief your staff on the upcoming EFP. Present them with all the information you have concerning the project. Pass out assignments, production schedules and any other materials necessary to assist the staff in performing its duties.

Once the staff has been fully briefed, open the meeting for discussion. Encourage an exchange of ideas and be receptive. Chances are, you'll get some great ideas for improving the EFP.

SHOOTING ON LOCATION

Why shoot on location? There are advantages and disadvantages of shooting from a remote location. You have to weigh them carefully.

Shooting from the location offers:

- o realism, detail, proper atmosphere,
- o no set designing
- o and authenticity.

Shooting from the studio offers:

- o safety and comfort,
- o better control of the production,
- o sound and weatherproofing,
- o a light-tight environment,
- o more equipment, electrical power and physical space,
- o heating and air conditioning
- o and restrooms and telephones.

Studio production also allows for more careful, detailed planning and coordination. Remember, when shooting from the remote location, you're always subject to noise, weather and difficulties that are grouped under Murphy's Law, "Whatever can go wrong, will go wrong when you least expect

it." In conducting a site survey, your main purpose is to determine the personnel and equipment that will be needed, but there is much more that you'll need to find out on your site survey.

Conduct a Site Survey

When conducting your site survey, ensure that you visit the site at the same time of day the event is scheduled to take place. For instance, if you survey the site in the evening, you may find that the parking lot has ample space for parking and equipment. That same location, during the day, can look quite different, with the parking lot full and the streets crowded with pedestrians and traffic.

Establish a point of contact at the location. You'll need assistance in obtaining access and information, and in getting help with various location details.

Take nothing for granted during your site survey.

- o Do the electric outlets actually work?
- o Will the window you need to run a cable through open?
- o Are there elevators and will you be able to use them to transport equipment?

You will also need to determine:

- o camera locations. Place the cameras so the sun will be behind them. Sketch the camera locations and make cable diagrams.
- o lighting needs. Take a light meter along on the survey. As pointed out earlier in this lesson, cameras must have proper lighting to operate. Sketch a diagram of where you want to place the lights. Doing this allows you to move equipment to the approximate location and set up quickly.
- o audio needs. What type of microphones will you be using? Does this shoot require hidden microphones or will they be visible on camera? As with the cameras and lights, make a sketch of where the microphones and cables will be placed.

- o power requirements. Have a station engineer present to check out your electrical needs. If not, you will need to estimate the production's total power requirements and ensure the necessary power is available. Note the voltage and amperage and make sure the wiring configuration is compatible with your equipment. Locate the fuse box or circuit, breaker box and spread out your electrical load evenly by plugging into several outlets wired to different circuits. One important thing to avoid is laying electric cables near video or audio lines, this can cause electrical interference. Checking power requirements is quite technical, that's why having a station engineer present is a necessity.
- o what permits and clearances are required. Will there be a need for parking permits? Are special credentials and passes needed to enter the EFP location?
- o alternate plans. What happens if the weather fails to cooperate? If the location is outdoors, will you cancel or go on with the broadcast? Are you prepared for the sudden illness of a crewmember? Try to come up with every possible scenario that could hinder or cancel your production effort. Once you've listed all possible problem areas, discuss them with your staff and formulate alternate plans. As a boy scout would say, "Be prepared."
- o how to publicize the event. Publicize the air date of your EFP on television and radio. Have talent do promos at the EFP location to lend credibility to the program. Contact the public affairs office for coverage in the post newspaper.

SHOOT THE SCENES

The day of the EFP has arrived, the script has been finalized, the crew selected, the site surveyed and all possible production problems taken into account. The time has come to shoot the product.

Ensure that the entire crew is familiar with what the script calls for. Continuity will play a big part in your production. Costumes, uniforms and the positions of talent and props have to be closely monitored. For instance, in the first shot the on-camera personality is wearing a hat, but in the next shot, which is part of the same scene, the hat is missing. The viewer will catch this and probably spend the rest of the program wondering what happened to the hat. The same goes for the location of props. From time to time you may have noticed on television or in the movies,

that a prop mysteriously moves or disappears during a scene. One shot of the scene might have been completed, the crew took a break, and someone unintentionally, without thinking, removed or moved a prop. Monitor the

continuity of each shot in a scene. Failure to do so could be embarrassing and cause a return to the location to reshoot one particular camera shot.

As you shoot, slate each scene and log good and bad takes to save postproduction time.

POSTPRODUCTION EDITING

Prior to getting to the postproduction stage, you should have already scheduled the necessary facilities for putting your program together. Schedule the facilities as far in advance as possible. Chances are you'll be working on a tight schedule to complete the EFP, so planning is extremely important. If you need a refresher on editing procedures, read Army subcourse DI 0350, Electronic Journalism. DI 0390, Television Graphics For Broadcast Journalists, will assist you in planning and designing graphics.

EVALUATE PROGRAM

Evaluate the program once it has aired. Gather feedback from your station peers and from the viewers. This can be done in several ways: by telephone, written surveys, person-to-person interviews, etc,. Feedback will provide you with a feel for what you did well and what failed to work during your production.

Write an after-action report detailing the production process from beginning to end. Make this document a part of the program file for your EFP. The next time you or another staff member has a similar EFP assignment, the program file of your EFP will make a great starting point.

SAFETY

With any production using electrical equipment, it is always wise to follow safety precautions set forth in the manufacturer's and in your outlet's standing operating procedures.

PLAN/PRODUCE AN ELECTRONIC FIELD PRODUCTION

INSTRUCTIONS:

Review the material in this lesson. Answer the questions below by circling the " T" or "F" next to each question. Compare your answers with the answer key on the next page.

- | | | | |
|---|---|-----|---|
| T | F | 1. | Once you've assessed the need for an EFP, the next step is to determine your objective. |
| T | F | 2. | Brainstorming sessions with production crew members are generally not very productive. |
| T | F | 3. | EFP is used when there are time constraints and when lower production values and technical quality are not important considerations. |
| T | F | 4. | When conducting a site survey, it is extremely important that you visit the proposed site at the same time of day the event is scheduled to take place. |
| T | F | 5. | An EFP normally requires that high-quality studio cameras be used. |
| T | F | 6. | Scriptwriters frequently draw their ideas out on storyboards to help visualize how they want the program to appear. |
| T | F | 7. | A light meter is seldom used to check lighting for an outdoor production. |
| T | F | 8. | Shooting from the location offers realism, detail and better control of the production. |
| T | F | 9. | When writing a script, use colorful language to avoid just telling the viewer what is happening. |
| T | F | 10. | The 3/4 inch format is fast becoming the popular choice for electronic field production. |

ANSWER KEY

LESSON 1

SUBCOURSE DI0460

PLAN/PRODUCE AN ELECTRONIC FIELD PRODUCTION

1. True (Page 5)
2. False (Page 5)
3. False (Page 2)
4. True (Page 11)
5. False (Page 2)
6. True (Page 6)
7. False (Page 11)
8. False (Page 10)
9. True (Page 6)
10. False (Page 4)

LESSON TWO

PLAN/PRODUCE TELEVISION SPOT ANNOUNCEMENTS

46R Soldier's Manual Task: 214-177-2351

OVERVIEW

TASK DESCRIPTION:

In this lesson you will learn the supervisor's responsibilities in planning and producing television spot announcements.

LEARNING OBJECTIVE:

ACTIONS: Describe the areas of responsibility in planning and producing a television spot announcement.

CONDITIONS: You are given the material presented in this lesson.

STANDARDS: Define or identify the responsibilities in planning and producing television spot announcements, and plan and produce a television spot announcement in the manner described in this lesson.

REFERENCES: The material contained in this lesson was derived from the following publications:

STP 46-46R-SM-TG 1/2/3/4/Broadcast Journalist
Soldier's Manual and Trainer's Guide;
Television Production, second edition, Wurtzel,
Alan.

PLAN/PRODUCE TELEVISION SPOT ANNOUNCEMENTS

INTRODUCTION

Of all the communication tools available to you in military television, the spot announcement is the most common. Unlike the feature, which is normally aired only once, the television spot will be used over and over again.

A civilian media spot is normally thought of as a commercial, something that sells a product. The TV spot can do more. It can sell a person on an organization, activity or even a mood. A TV spot can do all this without ever asking the audience to spend money on a commercial product. Many programs or activities in a military community are brought to the audience's attention in this manner.

In this lesson we'll discuss the types and forms of spots, the mechanics of spot writing and producing your television spot announcement.

TYPES OF SPOT ANNOUNCEMENTS

There are two types of spot announcements used in military broadcast media. These are:

- o command information spots
- o public service announcements

Command Information Spots

Command information spots support the commander's information goals. These areas are normally handled for the commander by the public affairs officer (PAO). Coordinating with other command agencies, the PAO establishes a campaign to emphasize the commander's information goals. For example, the PAO may work closely with the post engineer to determine energy saving campaigns for the calendar year, or the safety officer might suggest a series of spots promoting swimming safety. While most of this information can be included in community and unit newspapers, bulletins or in commander's calls, most soldiers, like the rest of the world, use television as their primary source of information. Using information gathered from the PAO, the station's traffic and continuity department compiles a command information calendar. This document is

Public Service Announcements

The public service announcement (PSA) is the most common type of spot presented on military television. The PSA provides information the audience wants to know, rather than needs to know. Some examples of a PSA are: information on travel, social announcements or fund-raising activities.

FORMS OF SPOT WRITING

There are two forms of spot writing: selling and information.

Selling

The most common method of broadcast spot writing is the selling form. The selling form is the most demanding because it requires you to use your imagination to come up with unique material.

The selling form includes an action step. This is a point of motivation. The selling spot encourages the audience to take action, not just retain a piece of information. You can sell throughout the spot. The action step is your last effort to get the viewer or listener to do what you want him to do.

Information

The information form is not as overt in its intentions as the selling spot. In the selling spot you actively encourage your audience to go out and do something or buy something. In the information form, you want to convey your facts in such a way that the audience will retain them, but you do not include the action step.

WRITING STEPS

To write an effective spot, there are three steps you must use. These are:

- o attention step
- o appeal step
- o action step

Attention Step

All forms of broadcast writing require you to first gain the audience's attention. This is called the attention step, or "hook." The object is to quickly gain the audience's interest. Most spots are: 30 and : 60 seconds in length. For example, **"YOU ARE SLOWLY COMMITTING SUICIDE."** could be the attention step for an anti-smoking spot.

The attention step in broadcast spot writing can include startling statistics, a jarring question, as in the example above, or a startling fact. Use the most appropriate opening to reach the audience as quickly as possible.

Appeal Step

To motivate your audience, use the appeal step. This is the body of the spot. During the appeal step you list all the reasons your audience should buy your product or become interested in your idea. Appeal steps in the anti-smoking spot could be:

- o You'll stop coughing.
- o You'll feel better.
- o You won't run out of breath so quickly.
- o Your clothes won't smell smoky anymore.
- o Non-smokers won't avoid you.

Action Step

The final step in the selling method is the action step. Using six words or less, the action step suggests your audience should go into action and buy whatever it is you are trying to sell. This step should be forceful,

combining invitation and demand, and should compel the audience to buy, join, write or perform according to the action you have suggested. The action step of the anti-smoking spot could be, **"FOR A LONGER LIFE, STOP SMOKING."**

MECHANICS OF SPOT WRITING

Target Audience

Spots are geared to attract all kinds of people, young and old, men and women, active duty and family members. However, each spot is not aimed at all of these groups, but at a small portion of the overall audience. It is your job as the spot writer to target your spot to that select group. For instance, if your spot were on the local day care center, your target audience would be married soldiers with working spouses or sole parents.

There are several questions you need to ask yourself:

- o Is this spot needed?
- o How do I reach this segment of the audience?

Since the target audience is probably not home during the day, nighttime television might be the best medium to air your spot. **Never** guess about the viewing habits of the audience. Your station's audience surveys will provide you with the information necessary to help you reach the intended audience. Once you've determined your target audience, write a specific spot announcement objective to include the purpose of the spot. This statement provides you with the direction in which this spot must go to serve the audience. Too many times folks working with the AFRTS (Armed Forces Radio and Television Service) have the old, "I'm the only station in town" attitude. Just because you're the only station in town, doesn't mean the audience is tuned in.

Prior to writing the spot, you must decide how you are going to package your finished product. A television spot might be produced in the studio, with actors and sets, or it might be shot at a remote location, with limited equipment.

WRITING THE SPOT

Verb Tense

Write your spot in the active voice, using either the present or the present perfect tense. It's better to say, "Show pride in your uniform," rather than, "You have shown pride."

Pronouns

Your spot should be conversational. Personalize your message as though you were speaking to one person. Remember, your spot must have appeal to the broad-based target audience, but it must seem as though you're talking to each viewer at home.

The best pronoun is YOU. The word **YOU** always makes the audience feel as though you are talking to them. "For more information, **you** can call Jane at 5259" or "How often do you think about retirement," are directed at the individual.

Sentence Length

Always use short sentences when spot writing. Sentences should vary in length to avoid monotony, but should be no more than 17 words.

Word Usage

Hard to pronounce words that give an announcer trouble, should be avoided, if possible. Avoid using military jargon, acronyms or sayings that might confuse the audience.

USE	INSTEAD OF
Post Exchange	PX
Commander	CO
12 Noon	1200 hours
Specialist John Jones	SPC Jones
Ambulance	Emergency Transport Vehicle

DI0460

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Format

Your spot will be inserted into the program day, so it is extremely important to meet the time requirements. If the spot request calls for a :60 second spot, then it should be :60 seconds. Follow the time guidelines. Taking the liberty to make your spot :32 seconds can cause serious problems.

For instance, in television a spot that runs long might cause the on-air switcher to run late into a network or satellite broadcast.

When writing for television, remember that your audio must stand alone. The television audience may not always be actually watching the set, so it's important that the words stand by themselves. The video used in your spot production should complement the audio. If you use music with the spot, make sure it enhances the spot message. The same applies to music with lyrics. It must enhance or support the message, not distract from it. The use of sound effects falls under the same guidelines as music and lyrics. The video that you select must support the audio. The principle that video complements audio is the central theme of writing for television.

Writing Style

As in all broadcast writing, there are steps you should follow in writing a spot.

- o Use the six C's of broadcast writing. Clear, Concise, Correct, Conversational, Complete and Current.
- o Use contractions whenever possible.
- o Television copy must be divided vertically, with video scripting on the left of the page and audio on the right.
- o Repeat numbers and addresses in your copy. These are hard to remember, so give your audience a second chance.
- o Always double space your copy and triple space between scenes. When in doubt, follow your station's format.
- o Use proper punctuation.
- o Make sure your copy is accurate. Always check and double check your facts, especially numbers and times.
- o Most spot writers work with deadlines. If given a deadline, meet it.

Policy and Regulation

All spots must conform to the Army's Public Affairs policies and regulations. These regulations are listed on Page 7, Paragraph 4 of Chapter 1 of this lesson.

WRITING EXAMPLE

Now that we've discussed the mechanics of spot writing, let's take a look at an example of a television spot.

GOODWILL AMBASSADOR

May 28, 1992

(30 SECONDS)

FOR GENERAL RELEASE

BRIEFCASE

ANNOUNCER

FOR YEARS, A BRIEFCASE WAS ONE OF
THE SYMBOLS ASSOCIATED WITH AN
AMBASSADOR.

SOLDIER IN UNIFORM

TODAY, THERE'S ANOTHER SYMBOL, FOR A
DIFFERENT KIND OF AMBASSADOR.

ANNOUNCER ON CAMERA

IT'S THE UNIFORM YOU WEAR AS A
GOODWILL AMBASSADOR.

SOLDIER/LOCAL
NATIONAL

YOUR UNIFORM MARKS YOU AS A
REPRESENTATIVE OF YOUR SERVICE AND
YOUR COUNTRY.

HANDSHAKE/LOCAL
NATIONAL

HOW YOU ACT IN A FOREIGN COUNTRY
CAN VERY WELL MEAN THE DIFFERENCE IN
OUR PUBLIC RELATIONS.

DI0460

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ANNOUNCER ON CAMERA

WHEN YOU'RE IN PUBLIC, REMEMBER YOU
ARE A GOODWILL AMBASSADOR OF THE
UNITED STATES.

###

THE SPOT REQUEST

We've gone over the mechanics of spot writing, now let's take a look at handling an incoming request for a television spot announcement.

When given a new request, the first thing to do is read it over thoroughly to become familiar with the background information. If the request does not contain the essential information (who, what, when, where, why and how), contact the requester. You'll also need to:

- o give the script to your supervisor for approval.
- o make any corrections that are needed.
- o re-time the script, if you make corrections, to ensure it meets the time requirement.
- o meet with all the personnel involved in the production to ensure each person knows what is expected of him.
- o rehearse the spot. If there are problems, go over them with the crew and rehearse until you are satisfied all problems have been resolved.
- o ensure that prior to shooting the final product, all talent is well groomed in accordance with specific service regulations or local standing operating procedure (SOP).

How you shoot the final product may depend upon your local SOP. Generally, a slug slate is recorded in front of the final product. This is an information slate placed in front of the countdown leader. It usually includes spot title, date, number, length, start date and kill date. Again, this will depend on the local SOP. Slug slates are normally put together on a character generator. You, as the producer of the spot, should provide the needed information to master control personnel.

After the slug slate, make sure a countdown leader is recorded. Your next step is to record the final product. You may have to shoot it several times to get the video shots you want. Once shooting is completed, then you enter the electronic editing phase. DI 0350, Electronic Journalism will provide you with the basics of electronic editing.

Frequently, the subject of a television spot will require a remote location. Lesson 1, Electronic Field Production, will assist you in producing your spot at a remote location.

PRACTICE EXERCISE

LESSON 2

SUBCOURSE DI0460

PLAN/PRODUCE TELEVISION SPOT ANNOUNCEMENTS

INSTRUCTIONS:

Review the material in this lesson. Answer the questions below by circling the "T" or "F" next to each question. Compare your answers with the answer key on the next page.

- | | | | |
|---|---|-----|---|
| T | F | 1. | Command information spots are the most common type of spots presented on military television. |
| T | F | 2. | A slug slate is normally placed at the end of the television spot. |
| T | F | 3. | Television copy must be divided vertically, with video scripting on the right of the page and audio on the left. |
| T | F | 4. | Broadcast spot copy is single spaced with a double space between scenes. |
| T | F | 5. | Sentences written for broadcast spot copy should be no more than 17 words. |
| T | F | 6. | The two forms of spot writing are selling and informational. |
| T | F | 7. | The most common method of broadcast spot writing is the informational form. |
| T | F | 8. | The audio portion of a television spot must be able to stand alone. |
| T | F | 9. | Broadcast spots should not be written in the active voice. |
| T | F | 10. | When writing a broadcast selling spot, you use the action step as your last effort to get the viewer or listener to do what you want him to do. |

ANSWER KEY

LESSON 2

SUBCOURSE DI0460

PLAN/PRODUCE TELEVISION SPOT ANNOUNCEMENTS

1. False (Page 19)
2. False (Page 25)
3. False (Page 23)
4. False (Page 23)
5. True (Page 22)
6. True (Page 19)
7. False (Page 19)
8. True (Page 23)
9. False (Page 22)
10. True (Page 20)

GLOSSARY

Audio: The sound portion of a radio or television program.

Audio level: The strength of the audio signal.

Audio mix: Balancing all audio levels to provide the desired composite sound.

Barndoors: Metal flaps, mounted on lighting instruments, that are used to control light distribution.

Dolly: A camera support that permits a camera to smoothly move across the floor of the studio.

Filter: A lens cover, made of glass or gelatin, that is used to change the quality of light entering a camera.

Fishpole boom: Hand-held and used mainly on location, where a larger boom is too unwieldy.

Floodlight: A wide-aperture light source that produces flat, diffused illumination, over a wide area.

Gel: Colored plastic or gelatin material, mounted in front of lighting instruments, to produce colored light.

Lavalier microphone: A tiny microphone, worn by talent, clipped to the tie, lapel or blouse, or hung from a cord.

Level: The volume or signal strength of an audio or video level.

Light meter: An instrument designed to read light intensity, using either incident or reflected light.

Location: A production area located outside the normal studio.

Master control: The operations area where all audio and video outputs of various production studios are sent for distribution and broadcast or recording.

Remote: A radio or television production produced outside the studio.

Shotgun microphone: A highly directional microphone designed to pick up audio from great mike-to-subject distances.

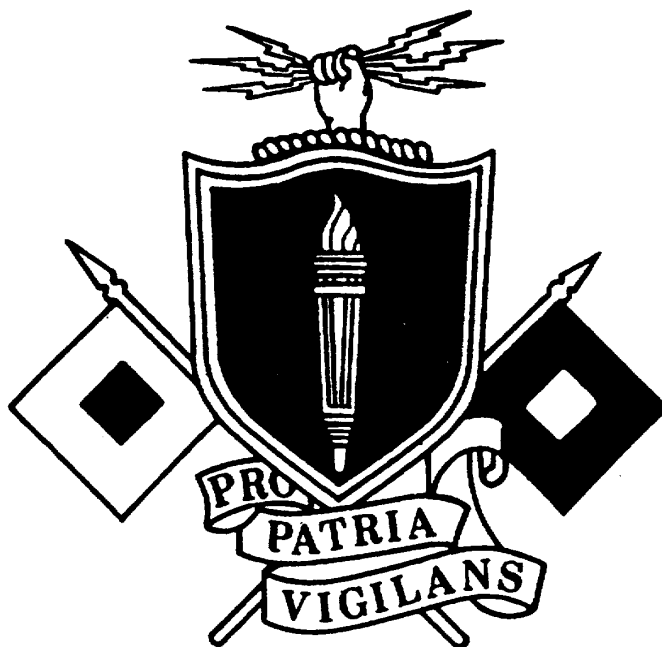
Spotlight: An instrument that produces a hard, directional, intense beam of light.

Storyboards: Sketches of important visual sequences of a script that help illustrate the writer's concept.

Tripod: Three-legged camera mount that can be attached to a dolly for maneuverability. Normally, tripods are lightweight and are used for remote productions.

Wireless microphone: Transmits a low-power signal that permits cable-free operation.

SCRIPT WRITING
FOR
EDUCATIONAL VISUAL
INFORMATION PROGRAMS



THE ARMY INSTITUTE FOR PROFESSIONAL DEVELOPMENT
ARMY CORRESPONDENCE COURSE PROGRAM

A
I
P
D

READINESS /
PROFESSIONALISM



THRU
GROWTH

US ARMY VISUAL INFORMATION/
AUDIO DOCUMENTATION SYSTEMS SPECIALIST
MOS 25P SKILL LEVEL 1

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SCRIPT WRITING FOR EDUCATIONAL
VISUAL INFORMATION PROGRAMS
(Development Date: 30 June 1988)

SUBCOURSE NO: SS0519-8

US Army Signal Center and Fort Gordon
Fort Gordon, Georgia

2 Credit Hours

GENERAL

Script Writing for Educational Visual Information Program is designed to teach the principles and knowledges necessary to perform tasks related to writing techniques in the visual information field. Information is provided for several tasks at increasing levels of difficulty at skill levels 1, 2, and 3.

The subcourse is presented in three lessons. Each lesson corresponds to a learning objectives as listed below.

Lesson 1: PREPARE A VISUAL INFORMATION SCRIPT

TASK: Define the elements of research techniques, training objectives and their application to an audience, the basic procedures for writing outlines, and the three approaches used to develop a visual information or screen treatment.

CONDITIONS: Given information and illustrations relating to the elements, objectives, applications, procedures, and approaches used to develop a visual information or screen treatment.

STANDARDS: Demonstrate competency of the task skills and knowledge by responding correctly to at least 80 percent of the multiple-choice test covering definitions of the elements, objectives, applications, procedures, and approaches used to develop a visual information screen treatment.

LESSON 2: DESCRIBE THE PRINCIPLES OF SCRIPT WRITING

TASK: Define and identify the principles of visual information script writing (audio and video), and the various camera movements that support a presentation.

CONDITIONS: Given information and illustrations relating to the principles of visual information script writing and camera movements.

STANDARDS: Demonstrate competency of the task skills and knowledge by responding correctly to at least 80 percent of the multiple-choice test concerning definitions and the principles of visual information script writing and camera movements.

Lesson 3: PREPARE A STORYBOARD AND A FINAL SCRIPT

TASK: Define and identify the procedures used for storyboard layout and the format and how it leads to final script development.

CONDITIONS: Given information and illustrations relating to the procedures and format for a storyboard layout and for development of a final script.

STANDARDS: Demonstrate competency of the task skills and knowledge by responding correctly to at least 80 percent of the multiple-choice test concerning procedures and format for a storyboard and development of a final script.

The objectives of this subcourse support the tasks in STP 11-25P13-SM-TG, scheduled for publication in FY90, as follows:

- 113-577-1058 Set Up Audio For a Presentation (Studio or Remote)
- 113-577-1059 Set Up Lights For a Presentation (Studio or Remote)
- 113-577-1061 Set Up or Assemble Studio or Remote Site For A Presentation
- 113-577-1064 Prepare a Scene Breakdown Sheet for Controlled Action Photography
- 113-577-1067 Determine Graphic Requirements For a Motion Media Production
- 113-577-1068 Determine Special Effects Requirements for a Motion Media Production
- 113-577-4036 Operate a Television or Motion Picture Studio Camera Mounted on a Pedestal, Tripod or Dolly

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***** IMPORTANT NOTICE *****

THE PASSING SCORE FOR ALL ACCP MATERIAL IS NOW 70%.

PLEASE DISREGARD ALL REFERENCES TO THE 75% REQUIREMENT.

Whenever pronouns or other references denoting gender appear in this document they are written to refer to either male or female unless otherwise indicated.

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INTRODUCTION TO SCRIPT WRITING FOR EDUCATIONAL VISUAL INFORMATION PROGRAMS

There is no doubt that writing an educational visual information script is a creative process. It is an extension of its author; therefore, as you write your script, it is important that you develop in yourself some of the characteristics of a creative person.

Try to look at things differently. Ideas stem, primarily, from looking at one thing and seeing another. Ideas also come from experimentation; mixing various media techniques to achieve a new approach to script writing is one way to experiment. Probably the most important characteristic of the creative person is fearlessness. Don't be afraid to try anything that your best judgment says might work, then have the perseverance to see it through. When others pass judgment on your script, don't be defensive. Use their comments to better your script.

Although this course is designed to teach script writing for the visual media in general, it will use the television medium as the example to present various principles of script writing. By using specific examples, rather than speaking in generalities, the subject matter is easily understood. This knowledge can then be applied to other visual information programs.

The majority of the script writing you do will be used for briefings and training programs (exceptions being public affairs personnel). Again, the principles are the same; if you learn all the principles for educational script writing, you can easily transfer these principles to other applications.

CREDIT: Credit is extended to the Defense Information School, Fort Benjamin Harrison, for use of some of their instructional material on script writing.

LESSON 1
PREPARE A VISUAL INFORMATION SCRIPT

TASK

Define the elements of research techniques, training objectives and their application to an audience, the basic procedures for writing outlines, and the three approaches used to develop a visual information or screen treatment.

CONDITIONS

Given information and illustrations relating to the elements, objectives, applications, procedures, and approaches used to develop a visual information or screen treatment.

STANDARDS

Demonstrate competency of the task skills and knowledge by responding correctly to at least 80 percent of the multiple-choice test covering definitions of the elements, objectives, applications, procedures, and approaches used to develop a visual information screen treatment.

REFERENCES

FM 25-2
FM 25-3

Learning Event 1:
DEFINE BASIC RESEARCH TECHNIQUES

1. Before you do any work on the script itself, you may need to research the subject area more thoroughly. Visual information programs, especially television, are not easily updated; so it is important that all your information is up-to-date. You will need to gather materials and information and research the subject. Researching the subject consists of two steps:

a. Locate as many instructional materials relevant to the training objective as practical. Most material that exists in an instructional format will more than likely be technically accurate and possibly even be validated as an effective training lesson. These materials may not have been designed for classroom use, but they should have some potential as instructional aids. Some examples where reference material may be found are:

- (1) Field and Technical Manuals (FMs and TMs)
- (2) DA Pamphlets
- (3) Training Circulars (TCs)
- (4) Extension Training Courses
- (5) TEC Lessons
- (6) Subject Matter Experts (SMEs)
- (7) Commercial texts
- (8) Manufacturer's materials

b. Observe copyright law requirements particularly when using commercial texts or manufacturer's materials which may be copyrighted.

NOTE:

Other sister services may have manuals, films, and extension courses which may be usable. Currently, Department of Defense is developing a computer system that lists all visual information material. The system, called Department of Defense Audiovisual Information System (DAVIS), will be available through the local Training and Audiovisual Support Centers (TASC).

2. Evaluate the material. The worth of any instructional material is its effectiveness with students. Evaluate the material on the basis of validity and technical accuracies. Look for ideas you can use in your script. You are not only evaluating the material to ensure technical accuracy, but you are determining the appropriateness of the material to the training objective.

Learning Event 2:

DEFINE TRAINING OBJECTIVES

1. The design and development of the course of instruction follows systematic procedures. The Systems Approach to Training (SAT) model adapted by the military services for the development of their courses, contains the philosophy as well as the procedures used to develop lessons required to conduct a course of instruction (Read TRADOC Pamphlet 351 series.). This means that in developing a lesson (or a script) you must ensure that it fits into the total training program.

NOTE:

There will be times when you will have to develop scripts for a general audience which do not fit into any specific course of instruction; in this case the mechanics of script writing will still apply.

2. Writing a script for the educational visual information program requires that there be some purpose behind it; we should be training individuals to do something. This is commonly referred to as the performance approach to training and it begins with the TRAINING OBJECTIVE. For a

given skill, a properly structured and complete training objective is both the training and the test.

a. A properly constructed training objective consists of three elements:

- (1) Task to be performed.
- (2) Conditions of performance.
- (3) Standard of acceptable performance.

b. A complete training objective answers three questions:

- (1) What skill do you want the student to acquire?
- (2) Under what conditions do you want the student to demonstrate this skill?
- (3) How well do you expect the student to perform the standard?

3. Let's take an example of a training objective. A commander is concerned with the ability of his NCOs to navigate cross-country using a map and compass. A common practice has been to write an objective as follows:

"To ensure that the NCO is proficient in the use of map and compass in cross-country navigation."

a. A performance objective should read as follows:

TASK:	Each NCO will navigate cross-country.
CONDITION:	On foot, in daylight, for 5000 meters, over woody and hilly terrain, given a Lensatic compass and a 1:50,000 map which shows both the starting and finishing point.
STANDARD:	NCO must arrive within 250 meters of the objective in 3 hours or less.

b. Notice that a performance objective consists of specific terms that tell exactly what is to be done under specific conditions and to a specific standard. To learn how to write good training objectives, refer to FM 25-2, Unit Training Management or FM 25-3, Training in Units. The following tables, however, summarize the requirements of good training objectives.

The three parts of a well-stated learning objective		
CONDITIONS (INPUT)	PERFORMANCE BEHAVIOR(S) (ACTION)	STANDARD(S) (OUTPUT)
Description of the condition(s) of performance - what is presented	Description of the action or behavior - what the student is expected to do	A statement of the output or outcome of the performance and the standard(s) of performance

Table 1-1.

How to write the three parts of an objective		
TO WRITE CONDITIONS, SPECIFY WHAT STUDENT IS GIVEN	TO WRITE PERFORMANCE/ BEHAVIORS, SPECIFY WHAT STUDENT DOES	TO WRITE STANDARDS SPECIFY OUTPUT (OR) HOW WELL IT IS DONE
<p>INPUT(S) Include:</p> <p>Job Aids Equipment Technical references</p> <p>Special tools</p> <p>Environmental conditions</p> <p>Special instructions</p> <p>Signals, symbols</p> <p>Problem situations or contingencies</p>	<p>Use ACTION verbs that are:</p> <p>Observable Measurable Verifiable</p> <p>Reliable (not prone to varying interpretation)</p>	<p>OUTPUTS AND STANDARDS</p> <p>Criteria for standards: Completeness Accuracy</p> <p>Types of Standards:</p> <p>Standard Operating Procedures (SOP)</p> <p>No error</p> <p>Amount of supervision</p> <p>Qualitative indices</p>

Table 1-2.

Examples of suitable verbs for each of four types of objectives			
INFORMATION	MENTAL SKILL	PHYSICAL SKILL	ATTITUDE
State Name Recite Describe	Demonstrate Discriminate Classify Generate (a solution)	Execute Operate Repair Adjust	Choose Volunteer Allow Recommend
List Relate Tell Write Express Recount	Apply (a rule) Solve Derive Prove Analyze Evaluate	Manipulate Handle Manipulate Calibrate Remove Replace	Defend Endorse Defend Accept Decide to agree

Table 1-3.

4. In developing the objectives for your script you must keep one important thing in mind - the audience at which your program will be directed. These are the people who will be using and learning from your material. You must take a close look at audience characteristics such as age and educational level, knowledge of the subject and attitude toward it, and individual differences within the group. All these areas have a bearing on the objective you develop. The audience is the determining factor when you consider the complexity of ideas to be presented. For example, you wouldn't develop a college level program if the majority of your audience hasn't finished high school. The audience also affects the rate at which the topic is developed, and the vocabulary level used for captions and narration. For example, you might not need as much repetition and summaries of key points with an audience consisting of experienced soldiers as you would with fresh recruits.

5. The following is an example of an objective developed according to the material just covered. This objective will also be used to develop the rest of the material required to write a script.

COURSE OBJECTIVE

Intended audience: Signal School students in a radio operators course.

Action: The student will

Conditions: Given a broken whip antenna, a 3-foot stick, tape, 3 feet of WD-1 wire.

Standard: The antenna must be operational within 15 minutes.

6. In summary, the training objective you develop should consist of four parts: the intended audience, the task (action), the condition, and the standards.

7. One final point to remember when using performance-oriented objectives in training with television: since the training objectives will determine the test objectives, there are some tasks that you would not expect the student to perform just by seeing it done on a screen. You would probably require the student to have some practice training before he is tested. This ties in to what we said before - the script must fit in with the over-all scheme of the training program.

Learning Event 3:

IDENTIFY THE BASIC PROCEDURES FOR WRITING AN OUTLINE

1. Up to this point you have been researching your subject, writing the objectives, and defining the audience. From this background work, you are now able to prepare your content outline. This outline becomes the framework for your materials. It consists of the basic topics which support your objectives and the factual information that explains each topic.

a. Remember the people who will be your audience their interests and their limitations. Decide what information must be included in detail, what can be treated lightly, what you can suggest for additional study, and what should be left out or considered for other visual information materials.

b. A good way of relating content to objectives is to connect the two visually. Write each objective on a 5- by 8-inch card. Make a second set of cards listing the content, the factual information related to each objective and display these cards under each appropriate objective card. At this stage, list all the available content relating to the objectives, without considering what you may use and what will be discarded. It is advisable to use cards of one color for objectives and of a second color for the content. Later you may add additional cards for specific materials that relate to a single objective and items of content. You will find that using cards makes you free to experiment with the order of ideas until they are in a logical sequence. Objectives can be added, eliminated, or relocated at this time.

c. Later during the actual storyboarding, and scripting, you may need to make further changes, but now you have a simple guideline to follow. At this stage you should include as much information as possible about the content, facts, examples, locations, reminders, etc. Visual ideas may come to mind while you are listing content. Note them on your cards. You should have an outline which includes an introduction, the body of the story with its main points, a conclusion containing a summary of the main points, and a closing.

(1) Introduction.

(a) Has an attention-getter.

(b) Gives a reason to watch.

(c) Gives objective and scope of the program.

(2) Body of the script. Organized into main points, with supporting material such as examples and illustrations.

(3) Conclusion of the script.

(a) Summary of the main points with examples and situations.

(b) A closing.

d. Notes should explain how to use student participation, internal summaries, or other variations to the basic outline.

e. Take time to carefully organize the outline. The body of the eventual program must be arranged logically so that students will easily be able to identify the main points that will lead them to the objective.

2. A suggested outline for a script should look something like that shown in Figure 1-2.

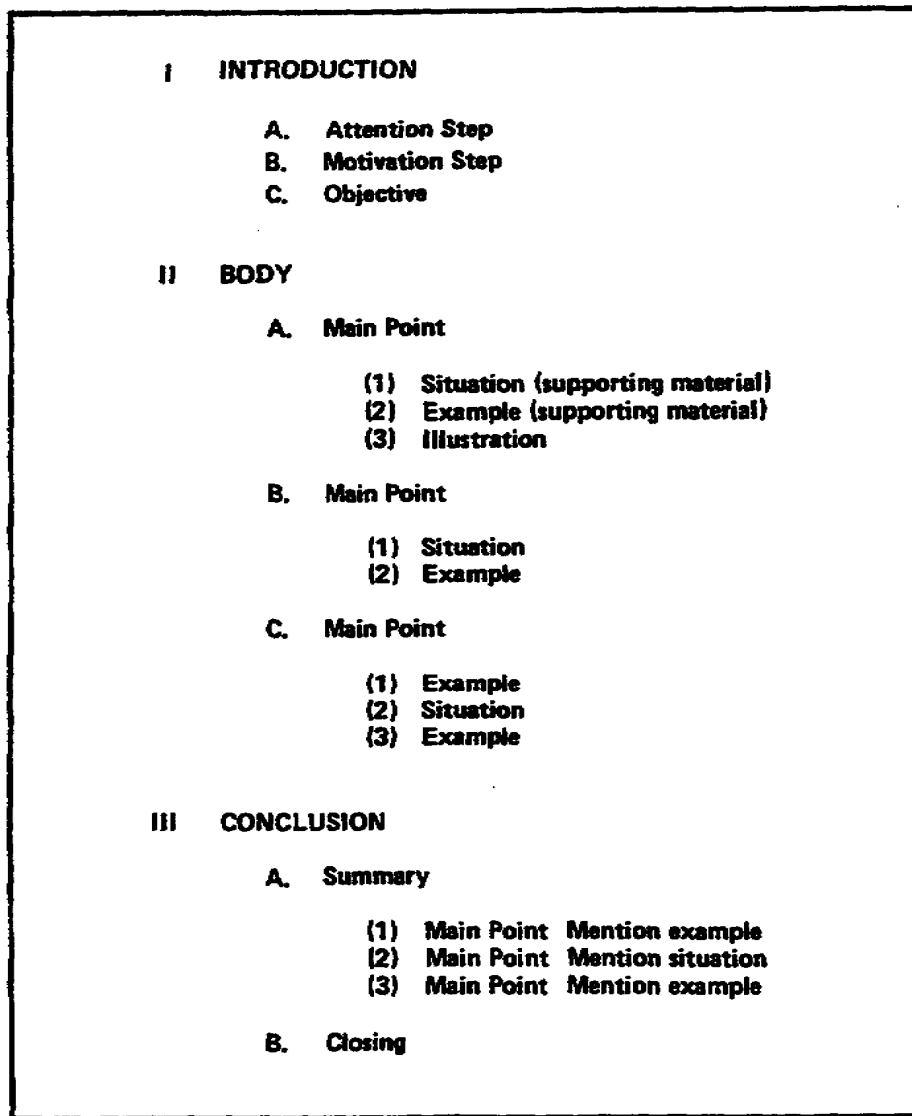


Figure 1-2. A typical outline

3. Let's discuss each of the major areas contained in an outline.

a. The introduction.

(1) The first part of your outline is the introduction. The introduction is in three parts, the first of which is the attention step. The attention step arouses the student's interest.

(2) The next part of your introduction is the motivation step. With this step you are providing the students with a reason for watching your program. To accomplish this step, you should relate the importance of your program directly to the students.

(3) The last part of your introduction is the statement of your objectives, or scope. By stating the objectives you are letting the student know exactly what information to be looking for in the program.

b. The body.

(1) The body of your outline should be organized into main points. Each of these main points should be supported by examples or illustrations.

(2) This supporting material should be designed with two things in mind:

(a) it should have credibility and,

(b) it should help the student discern the importance of the main points.

c. The conclusion.

(1) The conclusion of the outline consists of two parts, the summary and the closing. The summary consists of a recap of the main points and possibly mentions an example of each. The closing is an appropriate way of ending the program.

(2) There are, of course; many variations to this organization, especially should we decide to have some type of student participation in the program. We may want to have the program stop for student participation in a workbook, or to discuss what has just transpired. We may want to indicate certain points in our outline where the program will stop for student questions (just before the summary is a good place). We may wish to indicate places where we will have internal summaries. All these additions to the basic organization of our outline are most desirable, especially the inclusion of student participation. More on this will appear later.

4. The following is an example of an outline developed from the objectives found in Learning Event 2, paragraph 5.

OUTLINE

I. Introduction

Attention: Show a radio team using their equipment during a tactical situation.

Motivation: Show that the team cannot get through because of the broken antenna.

Objective: Be able to repair whip antennas.

II. Body

- a. Prepare antenna.
 - (1) Explain the requirements.
 - (2) Materials needed.
 - (a) Stick or branch.
 - (b) Tape.
 - (c) WD-1 Wire.
- b. Repair the antenna.
 - (1) Attach stick.
 - (2) Tape wire in place.
 - (3) Place in operation.

III. Conclusion.

- a. Summary.
 - (1) Attach stick.
 - (2) Attach wire.
 - (3) Tape in place.
- b. Closing. Show radio team communicating.

Learning Event 4:

IDENTIFY THE THREE APPROACHES USED TO DEVELOP A VISUAL INFORMATION TREATMENT

- 1. At this point in the development of your script you should have
 - (1) a specified audience,
 - (2) script objective,
 - (3) a content outline.

The next step in the preparation of your script will involve analyzing these three things and deciding on a treatment for your script. The method by which you approach the delivery of the information presented in your content outline is called the treatment.

a. You arrive at the treatment outline by examining the content outline and form an idea on how you might visually develop the generalizations. Form several such ideas and then put them into a written narrative form.

b. Writing the treatment is an important step that causes you to think through your presentation, putting it into a sequential, organized form that you and others can easily follow.

2. Treatments can be developed using these three different approaches: narration, personal involvement, and drama. The best way to show these approaches is to show you an example of each, using the outline from Learning Event 3, paragraph 4.

TREATMENTS

(Repairing Whip Antennas)

a. Narration Type.

The whip antenna is used to communicate with either an AM or FM radio. When an antenna breaks it can easily be repaired through "field expedient" methods. The procedures are relatively easy; simply use a stick, wire, and tape.

b. Personal Involvement Type.

Have you ever tried to communicate using a radio set that has a broken antenna? It's difficult. You can, however, get your message through by repairing your antenna using "field expedients." These field expedients consist of a stick, a piece of wire, and tape.

c. Dramatic Treatment.

During the Vietnam War, an entire infantry squad was wiped out because they were unable to call for reinforcements. It was discovered that the whip antenna on their radio set was broken. This situation could have been averted by using a stick, a piece of wire, and tape to repair that antenna.

Lesson 1
PRACTICE EXERCISE

1. What are the two main steps in subject research?
 - a. Observe copyright laws; be thorough
 - b. Collect and evaluate materials
 - c. Write an outline; get illustrations
 - d. Revise and create
2. What is the main worth of any instructional material?
 - a. It observes copyright laws
 - b. It impresses the student
 - c. It is effective
 - d. It comes from military manuals
3. What does SAT stand for?
 - a. Security Awareness Training
 - b. Select Appropriate Transitions
 - c. Systems Approach to Training
 - d. Scriptwriting Army Training
4. What is the main purpose behind writing a script for an educational program?
 - a. To impress students
 - b. To have students do something
 - c. To inform students
 - d. To have students understand a subject
5. What elements make up a content outline?
 - a. Storyboards and scripts
 - b. Objectives and audience demographics
 - c. Three- by five-inch cards and other graphics
 - d. Basic topics and factual information
6. How should you arrange the eventual program?
 - a. With strong visuals
 - b. With interesting music
 - c. With a logical arrangement
 - d. With explanatory notes
7. What are the three main elements you should stress in your script?
 - a. Specific audience, objectives, and content outline
 - b. General audience, learning events, and summaries
 - c. Introduction, attention getters, and general questions
 - d. Body, summary, and follow-up

8. What are three approaches you can use to develop a treatment?
- a. Music, special effects, and color
 - b. Discussions, questions, and feedback
 - c. Illustrations, graphics, and sound
 - d. Narration, personal involvement, and drama

LESSON 2
DESCRIBE THE PRINCIPLES OF SCRIPT WRITING

TASK

Define and identify the principles of visual information script writing (audio and video), and the various camera movements that support a presentation.

CONDITION

Given information and illustrations relating to the principles of visual information script writing and camera movements.

STANDARDS

Demonstrate competency of the task skills and knowledge by responding correctly to at least 80 percent of the multiple-choice test concerning definitions and the principles of visual information script writing and camera movements.

REFERENCES

None

Learning Event 1:

DEFINE AND IDENTIFY THE PRINCIPLES OF VISUAL INFORMATION SCRIPT WRITING

1. Before you start to write your script there are principles, or guidelines, that you should be familiar with. The next few paragraphs will discuss these principles. Before we get started, however, there is one factor that we need to stress, and that is creativity. No matter how much we dwell on these principles, your ability to be creative will mark the difference between a "good script" and a "bad script." Also, as the writer, personalize the script by using "you should", "you will", and "you know", as you write.

2. Script organization. Although the treatment helped you to organize the overall theme of the script, and the outline organized the material your script will cover, you still need to think about organization as you begin to write the script in draft form.

a. Should you systematically go through the whole outline making a picture for each heading and fact? Is it best to organize your script logically or to build from the simple to the complex, regardless of the outline order? There is no single best way by which the details of the content outline can be transformed into meaningful, related pictures and words. Two approaches have been established through experience, but they are by no means the only sound ones.

(1) First, carry an audience from the known to the unknown. Many successful materials start with those things with which the audience is familiar and then lead to new information and material.

(2) Second, build around the stages: introduction, development, and ending.

(3) You capture the audience's attention, (introduction), develop the content, and then summarize or review the activities. This is very similar to the overall content presentation (the outline).

b. Plan to have the student participate in some way, during or immediately after, the study of the material. Active participation definitely helps learning. Films, videotapes, and slides are designed primarily to present information, but many provide no opportunity for active participation. The way to create participation is to make involvement an inherent part of the material.

(1) Here are two suggestions for developing participation in visual information materials: include questions requiring an immediate response, and require a written explanation; or, have students make an oral summary. This type of activity, oral or written, can be accomplished through the use of a student workbook that is issued prior to viewing the program.

(2) More suggestions include requiring selection from among things shown or heard, and requiring performance related to the activity or skill shown or heard. This type of activity means that the program is presented in a "laboratory-type" classroom where the equipment is available.

c. These participating techniques often require a break in the presentation to allow the student to do some required activity. Some multimedia equipment can present the visuals on a timed basis. Also, be sure to plan for evaluation of the participation results and provide feedback to the subject indicating the correct replay or a comparison of measurement for his level of accomplishment.

3. Another thing to consider before you write your script is what is called a "thread of continuity." A thread of continuity is a connecting theme, story, or tone that runs through your entire script. Many times educational television scripts are adequate if considered segment by segment, but they are not cohesive in their entirety.

a. Some suggested threads of continuity include:

- (1) A story from the real world.
- (2) A series of examples connected by a narrator.
- (3) A "building block" approach.

(4) A chronological treatment.

b. The thread of continuity should keep your program cohesive with the basic organization we have already discussed.

4. Principles of video script writing. The message that the visual information media sends reaches the brain of the viewer two ways - through the eyes and through the ears. It is important that we understand the rules behind successful scriptwriting for the audio and the video portions of our final script. We will start with video; what the viewer sees.

5. The importance of "high visual" (rapid change in visuals). A picture on a television screen can hold the attention of a student for 20 seconds. By this we mean the same picture, unchanging, a "still visual," if you will. It is very important you have a high number of visuals in your script. At the very least you should have eight visual changes in any one minute. You should average at least one visual change every seven seconds. Obviously, it would be difficult to make this many changes in a slide program.

a. The question in your mind now should be: "What constitutes a change in visuals?" The following is a listing of the five things that constitute a change in visuals;

(1) The introduction of motion in still visual.

(2) "Freezing" a motion visual.

(3) A change in camera angle or movement.

(4) The introduction or elimination of color.

(5) The addition of some new object or person into the picture.

b. One of these five things happens about every three seconds in commercially-produced programs. A television commercial often has as many as 60 visuals per minute, and as many as 113 visuals have been seen in a 60-second commercial. This rapid change in visuals is called "high visuals." Excellent educational television is always characterized by a high number of visuals.

Learning Event 2: IDENTIFY CAMERA ANGLES

1. A change in camera angle or movement is a change in visuals. In a slide presentation the graphics work will create a change in visuals. All these changes can be visualized through the "eyes of the camera." Study the photographs in Figure 2-1, pages 17-22, showing the various types of camera angles and movements.



EXTREME CLOSE UP — ECU
(THIS REQUIRES SPECIFIC
INSTRUCTIONS —
ECU MOUTH)



CLOSE UP — CU



HEAD AND SHOULDER — HS



MEDIUM SHOT — MS



LONG SHOT — LS
OR FULL SHOT — FS



OVERHEAD SHOT — OS

Figure 2-1a. Camera angles and movements (Close-ups, head and shoulder, medium, long or full, and overhead shots)

**TILT – THE CAMERA TILTS
UP OR DOWN.**

**PEDESTAL – THE CAMERA MOVES
UP OR DOWN.**



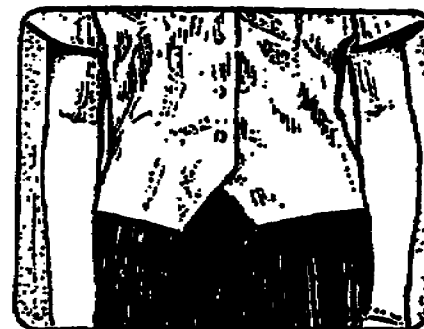
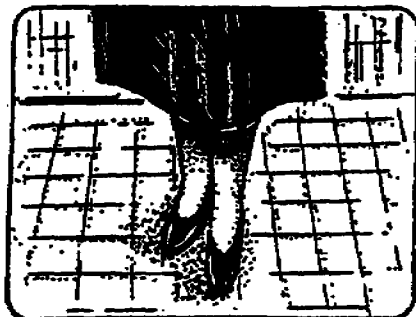
**TILT
DOWN**



**PEDESTAL
DOWN**



**TILT
UP**



**PEDESTAL
UP**

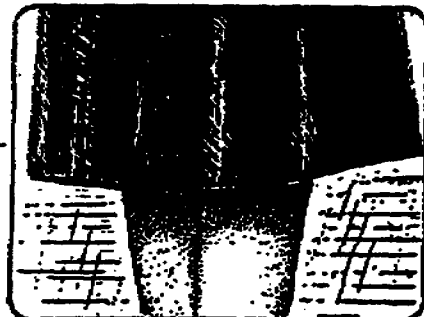


Figure 2-1b. Camera angles and movements (continued)
(Tilt shots and pedestal shots)



**TWO SHOT (TO DENOTE
NUMBER OF PEOPLE)**



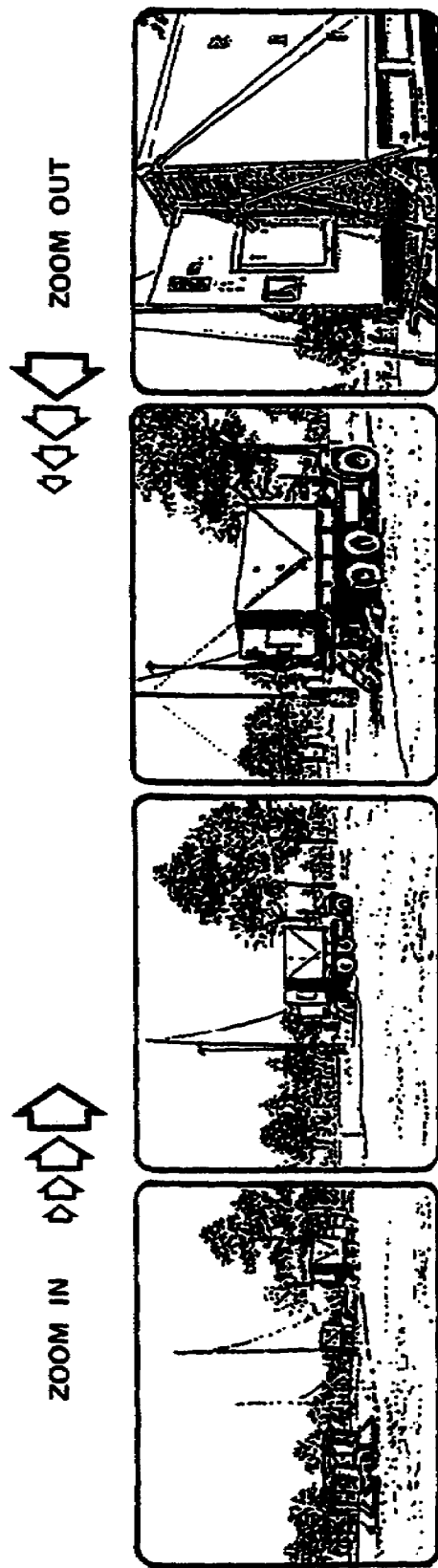
**OVER-SHOULDER SHOT
(OR REVERSE ANGLE SHOT)**



**CUT – THE VIEWER SEES AN INSTANTANEOUS
CHANGE IN THE SCENERY. THIS IS A
COMMONLY USED CHANGE IN VISUALS.**

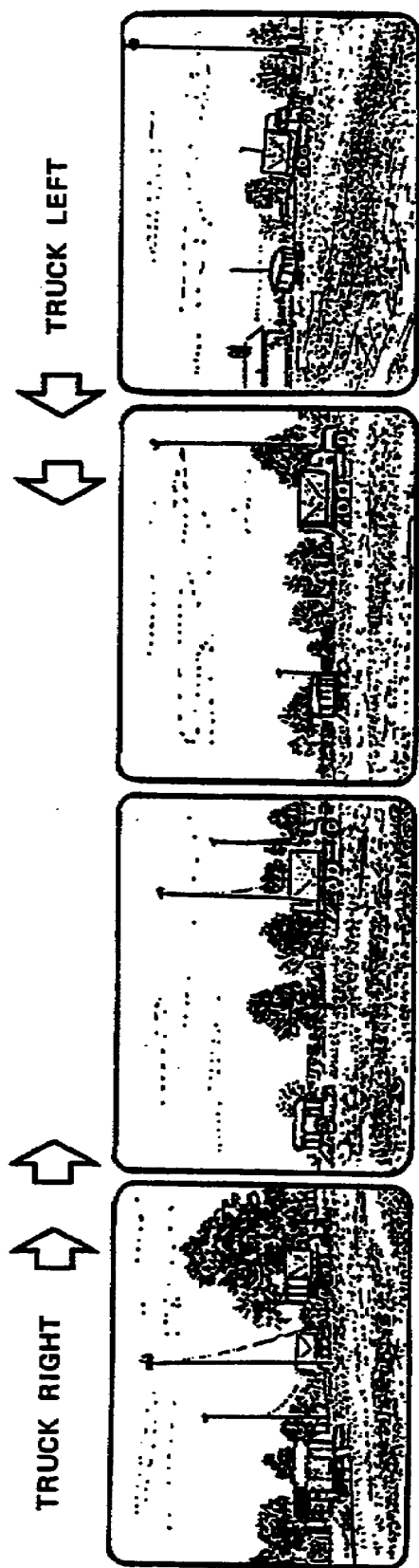
Figure 2-1c. Camera angles and movements (continued)
(Two shot, over-shoulder or reverse angle shots and a cut change)

THE ZOOM



THE ZOOM EFFECT IS CREATED BY USING A ZOOM LENS. IT MAY ALSO BE CREATED BY MOVING THE CAMERA CLOSER TO, OR FURTHER FROM, THE OBJECT. THIS IS OFTEN CALLED A "DOLLY," ("DOLLY IN" OR A "DOLLY OUT.")

Figure 2-1d. Camera angles and movements (continued)



TRUCK RIGHT OR LEFT -- THE ENTIRE CAMERA MOVES TO THE RIGHT OR LEFT.

PAN RIGHT OR LEFT -- THE CAMERA REMAINS STATIONARY,
BUT TURNS TO THE RIGHT OR LEFT.

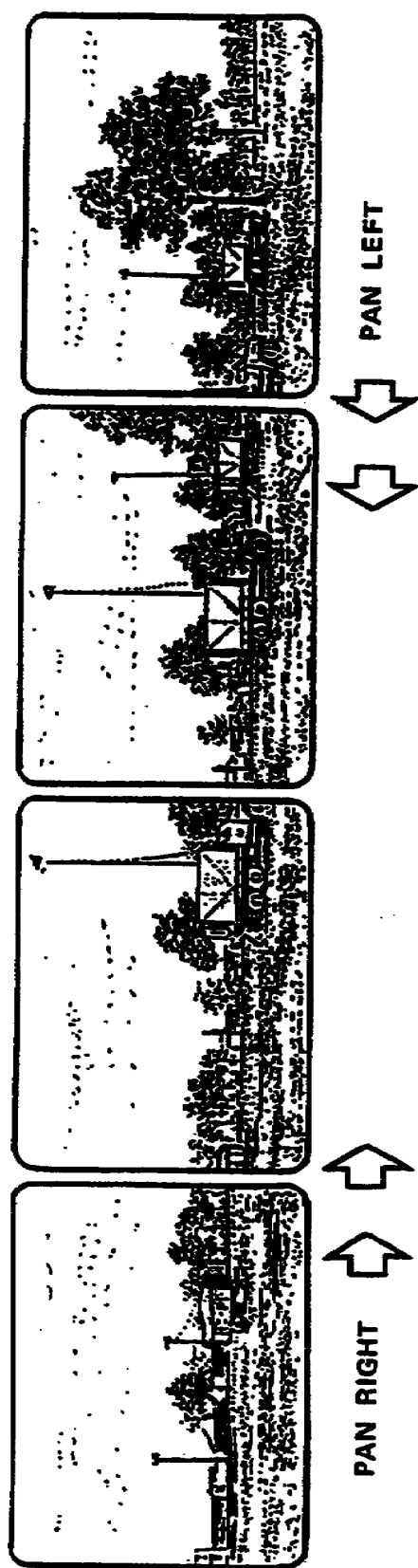
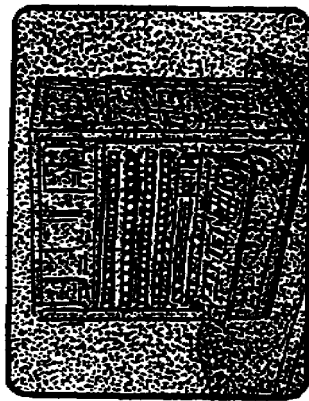
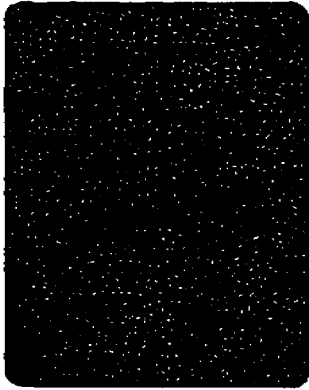
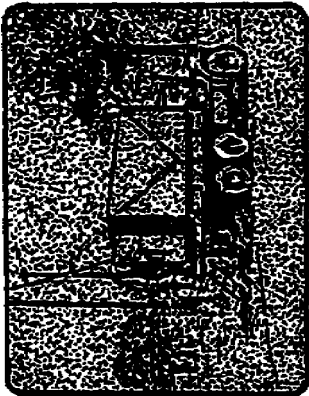
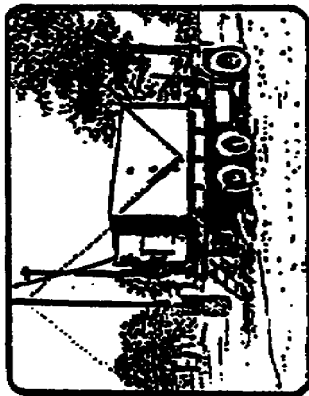
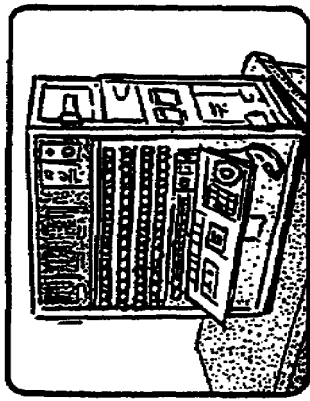


Figure 2-1e. Camera angles and movements (continued)



FADE – NOTICE THE PICTURE GOES TO BLACK, THE FADE IS
OFTEN USED TO SHOW LAPPED TIME.



DISSOLVE – NOTICE THE PICTURE NEVER GOES TO BLACK AS COMPARED TO FADE.

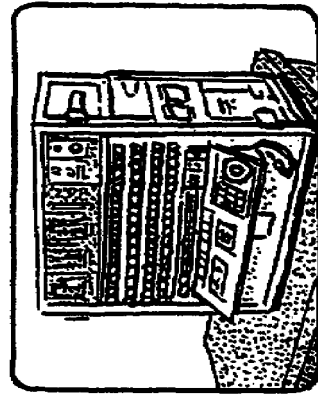
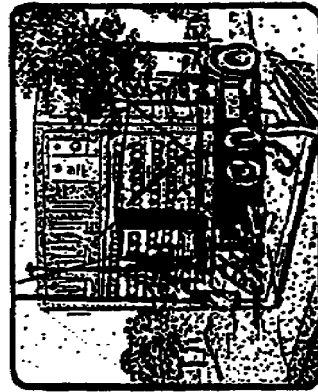
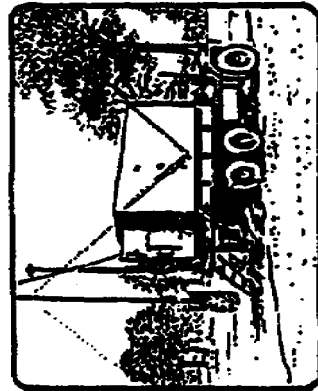
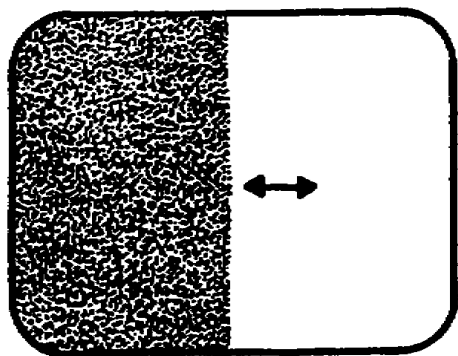
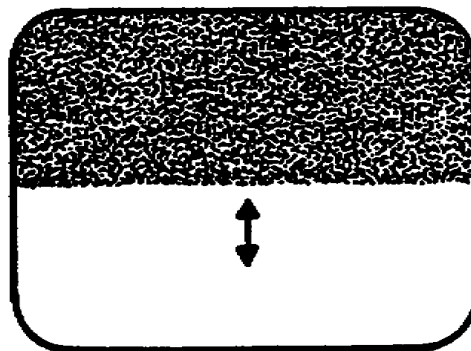


Figure 2-1f.
Camera angles and movements (continued)
(Fade and dissolve movements)

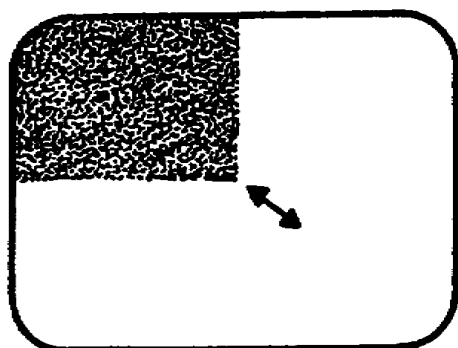
2. In addition to the camera positions and views shown, there are various effects that can be provided by television studios equipped with special effect generators. Some of those effects are shown below.



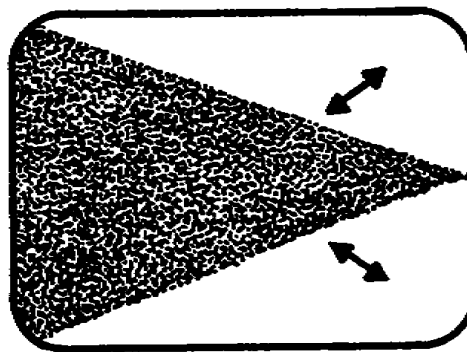
HORIZONTAL WIPE



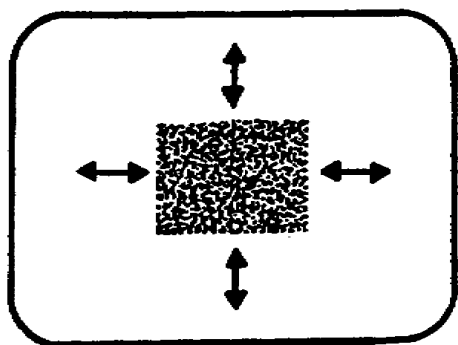
VERTICAL WIPE



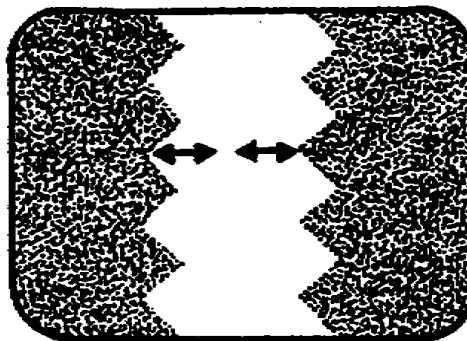
CORNER WIPE



HORIZONTAL PYRAMID WIPE



BOX WIPE



SAWTOOTH WIPE

Figure 2-2. Special effects (wipes) on the TV screen

3. When you write the final script, be sure to include a high number of visuals. Different combinations of camera angles and movements and different scenes can and should be used to your advantage. Remember, at the very least, eight visual changes in any one minute.

Learning Event 3:
DEFINE VISUAL CREATIVITY

1. It is generally recognized by the educational television industry that an instructional program placed in competition with commercial programs can hardly afford to be "plain Jane." The writer must make a diligent effort to "liven" up the classroom and make educational television more interesting and acceptable.

a. The point is that all educational television is deliberately placed in competition with commercial programs. This is because the students that view educational television also watch hours and hours of commercial programs. They are accustomed to high caliber production with conscious efforts to hold their attention made by the writers and producers of commercial programs.

b. Your program must exhibit the results of similar effort. There should be some element of entertainment in your program. It is very possible to mix entertainment and education as long as the former supports the latter instead of detracting from it. The techniques that are discussed below have been shown to be especially effective in maintaining student interest.

2. Visual metaphor is visually depicting something in an unexpected fashion in order to emphasize a point. It is a visual "play on words" (fig 2-3).

a. A viewer receives the message sent by the audiovisual media through two senses - sight and hearing.

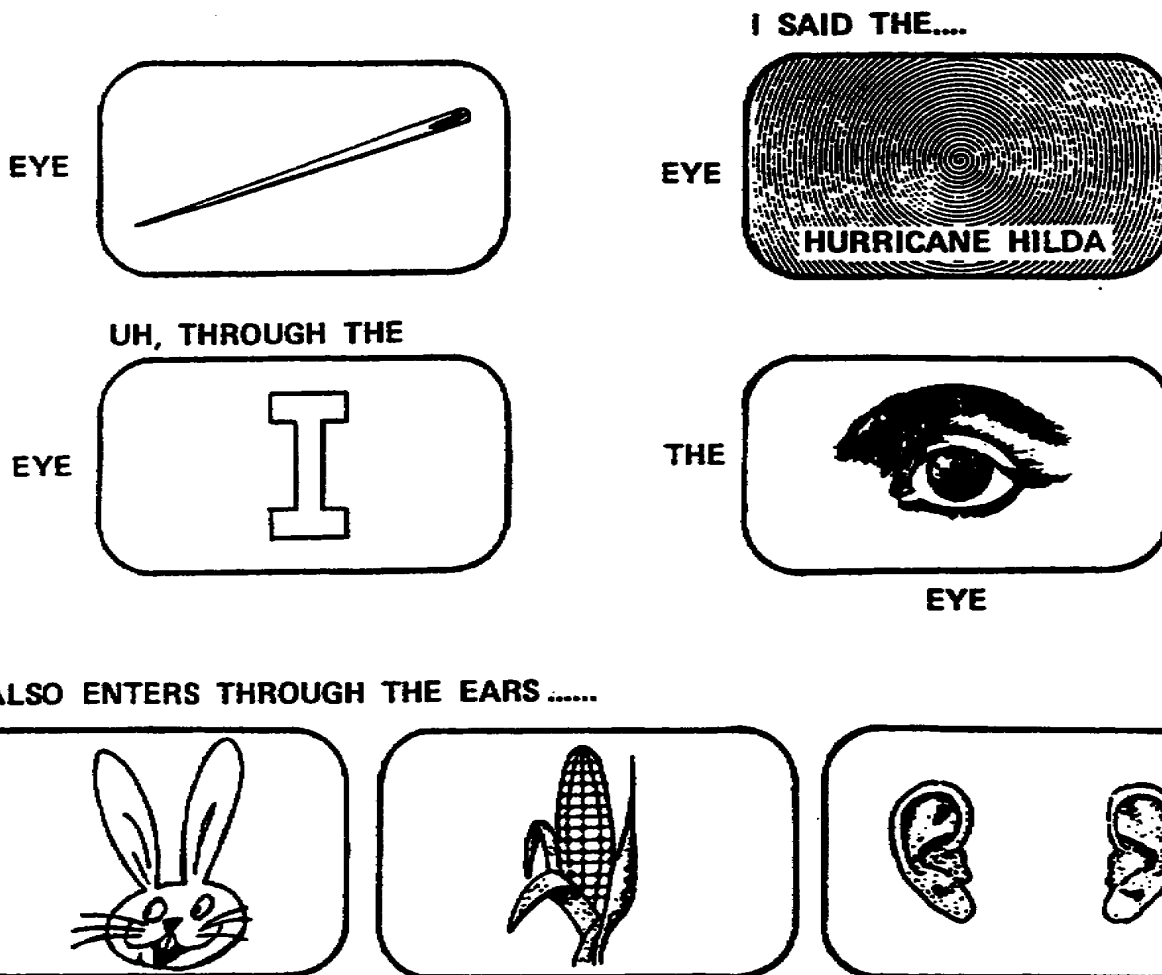


Figure 2-3. Visual metaphor, using "eyes" and "ears"

c. It is highly unlikely that a student who has been exposed to the ideas that television's message enters through the "eyes" and "ears" expressed previously, could forget it. Yet, if we had just said, "it enters through the eyes and ears" with no creative video, the point would not have been made so well.

d. In using visual metaphor, we must be careful to consider relevancy and consistency. One irrelevant visual metaphor in the middle of a program is nothing but a distraction. Also, too many visual metaphors can become confusing. The visual metaphor is one of the most effective creative mechanisms for adding an interest-holding element to your program.

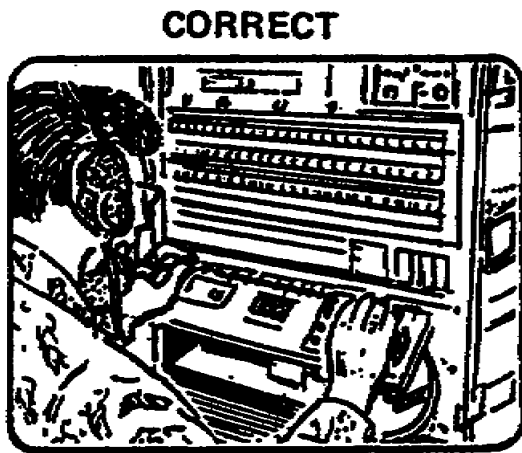
e. Point of view reversal. This is a creative mechanism used often in the commercial world. This camera angle looks at things just a little differently. How would an overhead projector see the transparency being

placed upon itself? How would a door knob see a hand about to grab it? (The video for each point of view reversal here could be easily accomplished in production by laying a transparency on the camera lens, and by having a person reach for a lens as they would a door knob.)

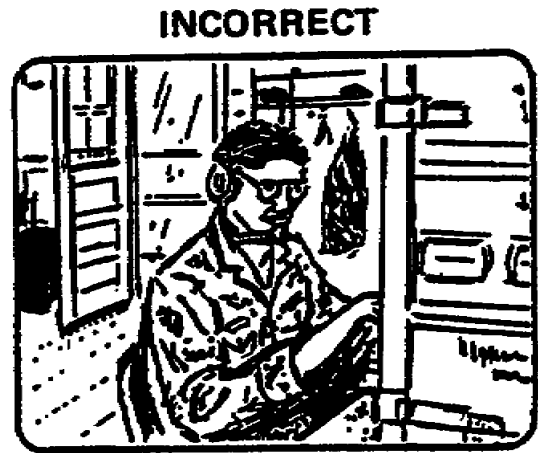
(1) A program needs to be "spiced up" production-wise by using this simple technique. In the context of a script, if someone is about to open a door, have his hand reach for the camera lens, then cut to a shot, from the other side of the door opening.

(2) This technique can be applied in numerous ways, and should be. Its use goes largely unnoticed, but it adds to the attractiveness of any program. The technique may be summed up as letting the viewer see things from different and unexpected points of view.

f. Write for the "eye" of the student: when we write video for a visual information program, we should write for the eye of the viewer. When possible, he should see things as he will see them on the job. For instance, if we are teaching someone to operate a radio, that task should appear on the screen as in Figure 2-4a, not like Figure 2-4b.



a



b

Figure 2-4. Correct and incorrect shots

g. Sometimes simple stick-figure drawings work as well as artists' renderings or beautiful photographs. Not everyone can afford the luxury of having great visual support. Simplicity in the video can be a virtue.

3. Let's summarize the principles of video script writing.

- a. High visual - at least eight visuals per minute;
- b. Use camera angles and movements for changing visuals.

c. Visual metaphor - using the video to emphasize a point by-depicting something in an unexpected way. (Remember that audiovisual enters through the eyes and ears?) It is a visual play on words.

d. Point of view reversal - seeing things from unexpected points of view, often used with inanimate objects. (Remember the doorknob?)

e. Write for the eye of the student - let him see it the way he'll see it on the job.

f. Simplicity - simple visuals work as well as complex visuals in many instances.

Learning Event 4:

DEFINE THE PRINCIPLES OF AUDIO SCRIPT WRITING

1. There are many similarities between audio and video script writing. In fact, some of the principles presented in the previous section can be applied directly to audio script writing. For example, if we take the video principle of writing for the eye of the student and apply it to audio, we come up with the first audio principle: write for the ear of the student.

2. Write for the ear of the student. Often the audio written for visual information programs sound stilted or unnatural. The dialogue given a narrator or character in a visual information program is usually dry.

a. Another reason for the problem is the fact that we automatically write differently than we speak.

b. A guide for accomplishing this is to ask the question, "How would a student say this?" Then write the audio for the students. We may even use slang when appropriate.

c. Another way to keep spoken audio conversational is to avoid lengthy sentences and big words. We don't normally speak in long sentences, and we don't normally use a lot of super words. Neither do the students. Here is an example of conversational audio:

"How ya doin"?

"Pretty good."

"Catchenny?"

"Cupla litluns."

"Whach a usin'?"

"Gobaworms."

"D'jeat yet?"

"No. D'ju?"

"Yup."

"Well, gotta go."

"See ya later."

"Yeah, g'luk."

d. This example may be a little exaggerated, but it was used in one effective educational program. The point is we want to make our spoken audio as conversational as possible.

e. Naturally, some subjects require a more sophisticated approach. Largely, the matter of conversational audio is common sense. Write for the ear of the student.

3. Voice-over and character. There are two types of spoken audio. "Voice-over" is audio that we hear spoken, but the person doing the speaking is not on camera, we can't see him on the screen. Character writing is audio for characters; the person doing the speaking is on camera.

a. Character writing. No two people talk exactly alike. When writing spoken audio for two or more characters, it is important to make a distinction between their speech habits. This distinction between character types is easy to take into account when writing, as long as you have a firm idea what your characters are like. If a character is a Texan, his part must be written as a Texan. Accents may be annotated by parenthetical note in the spoken audio.

b. Voice-over. The tendency when writing voice-over is to make the narrator sound like a narrator. In other words, often a narrator's spoken audio has been written in an unnatural "learned" style. While your narrator should be well informed, there is no reason why he should sound stilted. Write voice-over audio so that it sounds natural and is easy to read. You can check your success at accomplishing this by having several people read the narrator's spoken audio, and see if it sounds stilted. Voice-over audio must be indicated by parenthetical note, (V.O.), on the audio side of the script.

4. Sound effects. The use of sound effects can be very helpful in making scenes more realistic. Sound effects are written in parentheses: (sound of a dog barking). Special care should be taken however, to ensure that sound effects are relevant and useful, not costly distractions. Music, one kind of sound effect, must remain consistent with the visual action. Generally, music is most effectively used when introductory, or as transition or closing. The selection of music for visual information programs is regulated to some extent by copyright laws. Generally, any recording

labeled "BMI" (British Music Industry) can be used. Those with other labels like "ASCAP" (American Society of Composers and Publishers) cannot be used. Check with HQ, TRADOC, at Ford Monroe, Virginia, to clear any recordings you may want to use before incorporating them into your script. The exact format for both video and audio script writing will be addressed later. Below are things to remember about audio.

- a. Write for the ear of the student.
- b. Distinguish between voice-over and character writing.
- c. Use sound effects and music carefully.

Learning Event 5:

IDENTIFY AND DEFINE SCRIPT WRITING TECHNIQUES

1. Writing for a visual information script, that is, for a narrator or character, is different from writing for a book (a reader). There are certain rules that you must follow so the narrator will say exactly what is intended to be said. The following are a few of the rules that should be observed when writing a script:

a. The period. As in any writing, the period indicates the end of a sentence or thought. More periods are used in script writing because the sentences are generally shorter and more conversational.

b. The comma. Use the comma to indicate a pause shorter than a period. Don't use the comma unless you want the narrator to pause.

c. The dash. Use the dash to set off parenthetical expressions. For example: NATO - North Atlantic Treaty Organization - voted to ...".

d. The hyphen. Use the hyphen to help narrators in phrasing difficult words and to instruct them to pronounce individual elements distinctly.

Example: re-adjust, re-evaluate, PAN-AM

e. The dots. Occasionally, you can use a series of three dots to indicate a pause longer than that of a comma. The series of three dots can also be used for a dramatic effect:

Example: The jury foreman announced in a clear firm voice...
"innocent!"

f. The quotation marks. In addition to its normal use for indicating quotes, the quotation marks can also be used as an aid to narrators to set off nicknames, titles of books, and plays, etc.

Example: The Division - better known as the "Flying Blue Devils" - begin ...

g. The parentheses. Material in parentheses is normally not meant to be read aloud. Parenthetical material includes notes to narrators such as pronunciation guides, reading rates, etc.

NOTE:

In script writing, simple words say it best. Use words that everyone will understand, the narrator as well as the listener. Don't ignore colorful and descriptive words. Colorful and descriptive words add life to your copy. Keep in mind, however, the broadcast copy, especially hard news, must be clear, concise and correct.

h. Contractions. In day-to-day conversations, contractions are used rather liberally; therefore, you should consider using contractions whenever possible because it will add to the "conversationality" of your narrator. A definite exception to this rule is the "it will" contraction "it'll" which is awkward when you're trying to read it into a microphone.

i. Pronouns. There is a danger in using personal pronouns. When using he, she, or they, make certain there can be no doubt in the listener's mind as to whom you're referring. The ear can't go back and pick up the identification. Repeat the noun if there is any question.

j. Alliterations: Beware of alliterations. When you compose a sentence consisting of several words beginning with the same vowels or consonants, you have alliteration and the narrator has a problem.

Example: The westerly wind whistled wildly, or the lively little lasses laughed loudly.

k. Hissing sounds. Beware of too many sibilants ... "is" and "sh" sounds. They tend to create a hissing sound when read aloud.

Example: The six soldiers stood shoulder to shoulder as Secretary of State Shepard Shelton...

l. Homonyms. Watch out for homonyms, words which sound alike but have different meanings. The ear can't tell the difference between "won" and "one" or "bear" and "bare."

m. Here and there. Where is "here" and "there" when they're heard by listeners scattered over a wide area? Make "here" and "there" taboo words when you must refer to a location. "Here" in reference to a location could be any place it's heard.

n. Not "not". Avoid the use of the word "not" in your script. "Not" can easily be dropped out of your script inadvertently and leave the listener wondering if he heard "not" or not.

Examples:

USE

AVOID

Dishonest
Forgot
Unable

Not honest
Did not remember
Not able

o. Phonetic spelling. If there's any way for a narrator to mispronounce a name or an unusual word, he'll do it. So give him all the help you can. How? Write the phonetic spelling in parentheses and place it immediately after the troublesome word. Be sure to underline the phonetic syllable that is to be accented or stressed.

Example: Sergeant Kollman (coal-man) entered... Munich (mew-nick), Germany is the...

Make sure the phonetic spelling appears on the same line as the word it represents.

2. Abbreviations. When abbreviations are used, they are intended to be read as abbreviations. The use of well known abbreviations is permissible, such as ...Y-M-C-A, F-B-I, U-S, U-N, A-M, or E-S-T. You may also use Mr., Mrs., Ms, and Dr. "St" may be used instead of "SAINT", and in cases such as St. Louis or St. Paul.

NOTE:

Do not abbreviate military installation names. Use Fort (not Ft.) Gordon; it is the Naval Air Station (not NAS); it is United States, or U-S, Air Force, not USAF. Never abbreviate names of states, cities (except St. Louis, St. Paul), countries, political parties (except G-O-P), days of the week, months, titles of officials, and address identification such as street, avenue, drive or boulevard. Avoid starting a sentence with an abbreviation. A good rule to remember on the use of abbreviations is - when in doubt, write it out.

a. Examples:

WRITE

Captain Hawkeye
Airman Carlisle
Specialist Five Hill
Seaman Barker
Chief Petty Officer Otto
Radio Station W-I-N-L
World War Two
80 Miles Per Hour
Iowa

DON'T WRITE

CPT Hawkeye
AMN Carlisle
SP5 Hill
SN Barker
CPO Otto
Radio Station WINL
World War II or WW II
80 M.P.H. or 80/M-P-H
IA

b. Acronyms. When using an unfamiliar abbreviation or acronym which will be pronounced as a word, be sure to spell it out in the first usage.

Examples: "The US Army Signal Center and Fort Gordon, commonly called USASC&FG...or the Chief of Information, known as CHINFO..."

c. Numbers. Numbers present their own special problems to the scriptwriter for the sake of clarity. First of all, any number that begins a sentence is always written out.

(1) One to nine - Write out the numbers from one to nine: Exceptions -- sports scores, time (hours and minutes), dates, telephone numbers, and license numbers.

(2) From 10 to 999 - Use numerals for these figures.

(3) From thousand, million, billion - write out these figures. Example: 15 hundred, six thousand; 13 thousand, 500; and seven billion, 300 million.

(4) Conversational numbers - Make numbers conversational. Round out figures unless the exact figure is essential to your program.

(5) Dates - Write dates as October 1st...2nd, 3rd, 4th and 31st, and use four-digit numerals for years such as 1978 or 1892.

d. More examples of numbers:

<u>WRITE</u>	<u>DON'T WRITE</u>
(1) Money: 10 thousand dollars	\$10,000.00
(2) Fractions: two-thirds five-tenths one & seven-eighths	2/3's 0.5 1 7/8's
(3) Percentages: six percent onetenth of one percent	6% .1%
(4) Telephone Numbers: 6862377	six-eight-six-, etc.
(5) Addresses: 953 East 42d Street	953 E. 42 St
(6) Ages: 12-year old Mary Smith	Mary Smith, 12

<u>WRITE</u>	<u>DON'T WRITE</u>
(7) Time:	
10-30 this morning	10:30 am
10-30 am	1030 hours
6 pm	6:00 pm
(8) Decimals:	
22-point 25	22.25
six point five	6.5
(9) Roman Numerals:	
Louis the 16th	Louis XVI
Pope Paul the Sixth	Pope Paul VI
(10) Ratings:	
The number one team	#1 team
(11) Scores:	
9 to 4	nine to four
23 to 6	23 to six
(12) Odds:	
Three-to-one	3-1 or 3:1
(13) Licenses:	
H-L-S 1213	HLS-1213
(14) Height:	
Five feet-five inches	5 ft. 5 inches
	5X5
(15) Military units: (written as they're spoken)	
Seventh Fleet	7th Fleet
11th Corps	XI Corps
Eight 21st	821st
(16) Aircraft Designations:	
C-five "Galaxy"	C-5 Galaxy
C-one-30 "Hercules"	C-130

Lesson 2
PRACTICE EXERCISE

1. What is one main factor that should be stressed when writing any script?
 - a. Strong opening
 - b. Humor
 - c. Strong summary
 - d. Creativity
2. What must you think about as you write your script in draft form?
 - a. The ending
 - b. The overall organization
 - c. The style of presentation
 - d. The experience of the audience
3. What type of camera shot is a "tight shot of a mouth?"
 - a. Close-up
 - b. Medium close-up
 - c. Extreme close-up
 - d. Chin shot
4. What is another name for a full shot?
 - a. Extreme long shot
 - b. Long shot
 - c. Medium shot
 - d. Medium/close shot
5. What should you try to add to any type of visual presentation?
 - a. Entertainment
 - b. Factuality
 - c. Chronological development
 - d. High drama
6. What must be considered when using a visual metaphor (play on words/visual?)
 - a. The time of day
 - b. The age of audience
 - c. Relevancy and consistency
 - d. Color and sound effects

7. What is one major reason script writing is difficult?
 - a. Few people can type
 - b. We write differently than we speak
 - c. We are too lazy to research
 - d. Few people understand complicated sentence structure
8. What must you, the writer, give narrators?
 - a. Humorous anecdotes
 - b. Clearly defined major objectives
 - c. Lines that are conversational and natural
 - d. Lines that show how intelligent they are

LESSON 3
PREPARE A STORYBOARD AND A FINAL SCRIPT

TASK

Define and identify the procedures used for storyboard layout, the format, and how it leads to final script development.

CONDITIONS

Given information and illustrations relating to the procedures and format for a storyboard layout and for development of a final script.

STANDARDS

Demonstrate competency of the task skills and knowledge by responding correctly to at least 80 percent of the multiple-choice test concerning procedures and format for a storyboard and development of a final script.

REFERENCES

None

Learning Event 1:

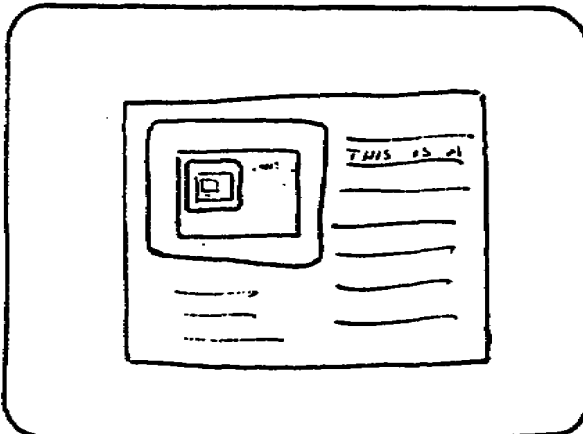
IDENTIFY THE PROCEDURES TO LAY OUT A STORYBOARD

1. After all this preparation you are now ready to do some actual script-writing. But before we proceed, go back into your memory bank and recall the products you have developed that will guide you in writing this draft script. These are part of the "building block" process of scriptwriting; objectives, outline, and treatment.

2. With these documents and your knowledge of scriptwriting principles, you are ready to write a draft script on storyboard cards. See Figures 3-1 through 3-6 for illustrations of 11 different storyboard scenes.

STORYBOARD CARD

SCENE NO: /



INSTRUCTIONS:

FGSIS FORM 46
1 MAR 77

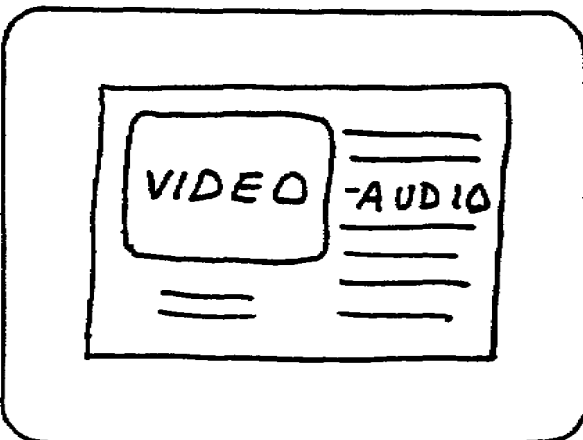
NARRATION:

THIS IS A STORYBOARD
CARD. IT IS USED
TO WRITE A DRAFT
SCRIPT OF AN
AUDIOVISUAL PROGRAM.

10514

STORYBOARD CARD

SCENE NO: 2



INSTRUCTIONS:

HERE YOU PROVIDE
ADDITIONAL INFORMATION

FGSIS FORM 46
1 MAR 77

NARRATION:

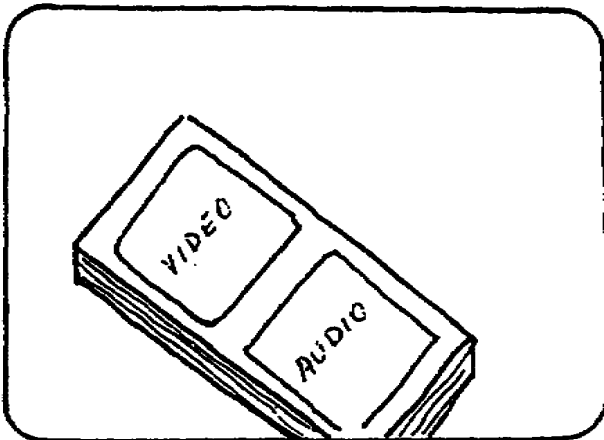
THE RIGHT SIDE OF
THIS CARD IS USED
FOR THE AUDIO
PORTION OF THE
PROGRAM. THE LEFT
SQUARE IS USED FOR
DESCRIBING THE
VIDEO PORTION OF
THE PROGRAM

10514

Figure 3-1. Story card layouts, scenes 1 and 2

STORYBOARD CARD

SCENE NO: 3



INSTRUCTIONS:

Show a storyboard
pad.

NARRATION:

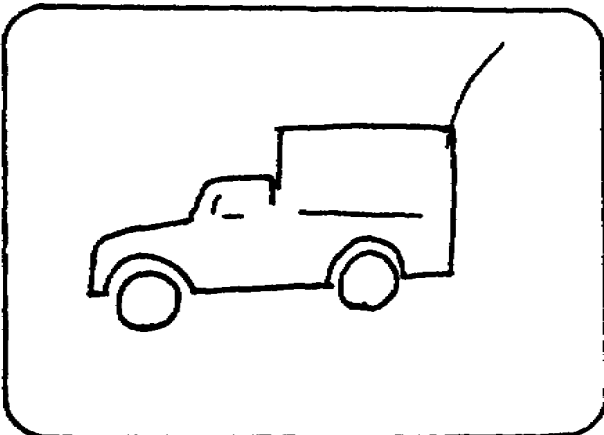
SOME STORYBOARD
"CARDS" COME IN THE
FORM OF A PAD
INSTEAD OF A
3"X5" CARD

PGSIG5 FORM 46
1 MAR 77

10514

STORYBOARD CARD

SCENE NO: 4



INSTRUCTIONS:

NARRATION:

YOU MAY DRAW THE
VIDEO BY MAKING
ROUGH SKETCHES, OR
YOU COULD WRITE
OUT WHAT YOU
WANT,

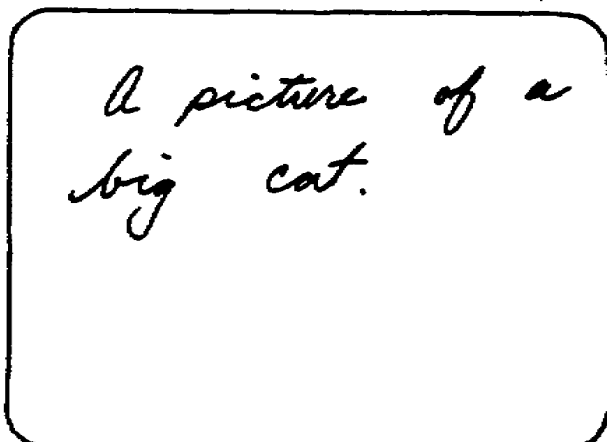
PGSIG5 FORM 46
1 MAR 77

10514

Figure 3-2. Storyboard layout, scenes 3 and 4

STORYBOARD CARD

SCENE NO: 5



INSTRUCTIONS:

FGSIS FORM 46
1 MAR 77

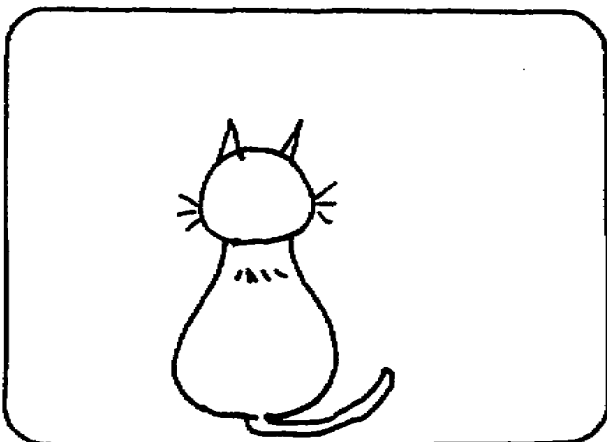
NARRATION:

LIKE ON THIS CARD.
USUALLY, A QUICK
SKETCH IS EASIER
AND MORE ACCURATELY
REPRESENTS WHAT
YOU WANT TO
SHOW - - -

1051N

STORYBOARD CARD

SCENE NO: 6



INSTRUCTIONS:

FGSIS FORM 46
1 MAR 77

NARRATION:

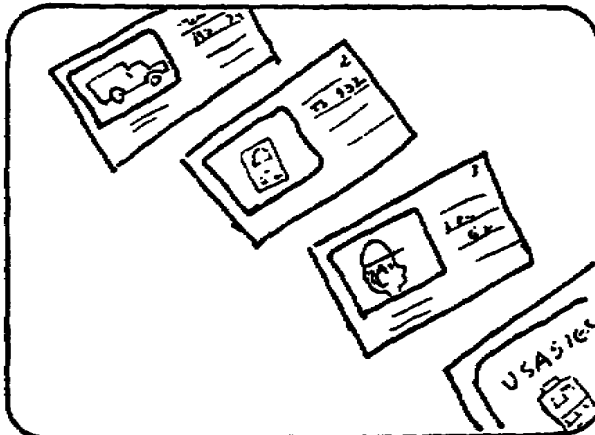
--- AS YOU SEE
HERE

1051N

Figure 3-3. Storyboard layout, scenes 5 and 6

STORYBOARD CARD

SCENE NO: 7



INSTRUCTIONS:

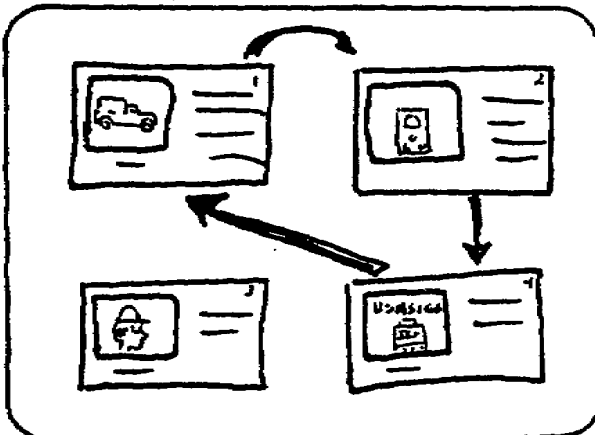
POSIGS FORM 46
1 MAR 77

NARRATION:

ONE ADVANTAGE OF
USING STORYBOARD
CARDS IS THAT THEY
FORCE YOU TO USE
LOTS OF VIDEO
TO GO WITH YOUR
AUDIO.

STORYBOARD CARD

SCENE NO: 8



INSTRUCTIONS:

POSIGS FORM 46
1 MAR 77

NARRATION:

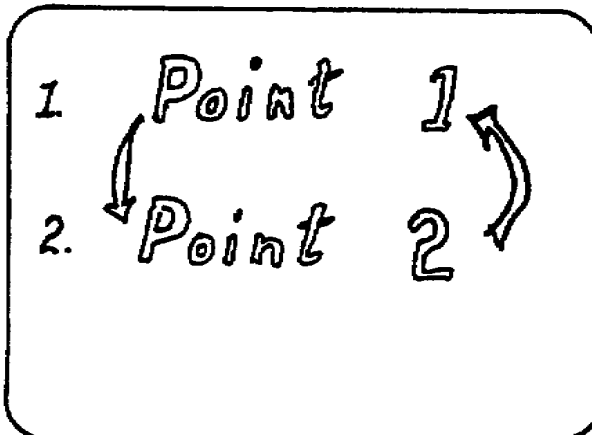
ALSO, WHEN YOU
FINISH WRITING THE
AUDIO AND VIDEO
PORTIONS OF THE DRAFT
SCRIPT, YOU CAN LAY
OUT THE CARDS AND
CHANGE THE SEQUENCE,
IF YOU LIKE.

1051

Figure 3-4. Storyboard layout, scenes 7 and 8

STORYBOARD CARD

SCENE NO: 9



INSTRUCTIONS:

FGSIG FORM 46
1 MAR 77

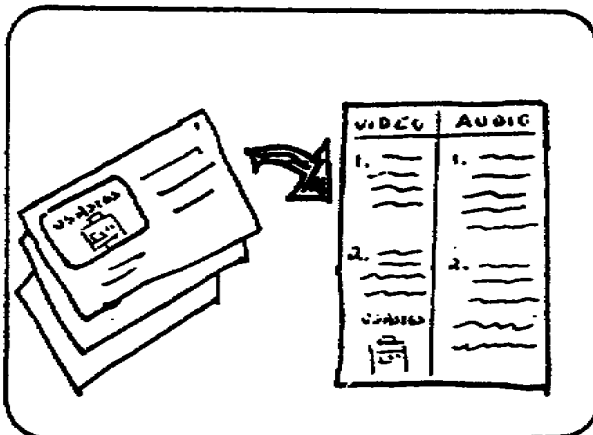
NARRATION:

SOMETIMES YOU'LL
DISCOVER A BETTER
SEQUENCE FOR
PRESENTING THE
MATERIAL.

1051M

STORYBOARD CARD

SCENE NO: 10



INSTRUCTIONS:

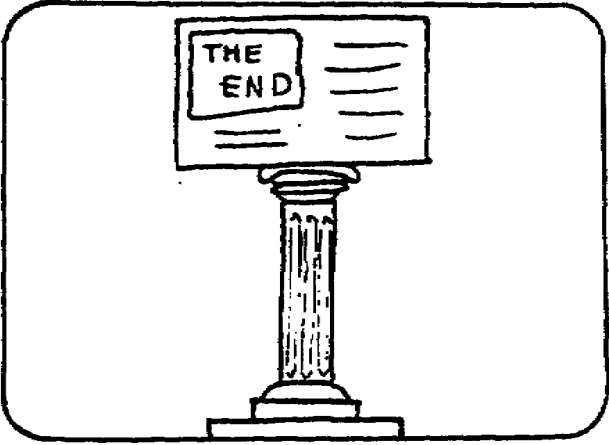
FGSIG FORM 46
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NARRATION:

WHEN YOU HAVE THE
DRAFT SCRIPT COMPLETED
ON THE STORYBOARD
CARDS, YOU ARE THEN
READY TO TYPE UP
YOUR FINAL DRAFT
ON SCRIPT PAPER.

1051M

Figure 3-5. Storyboard layout, scenes 9 and 10

STORYBOARD CARD	
<div style="border: 1px solid black; padding: 10px; margin-bottom: 10px;">  </div> <div style="border: 1px solid black; padding: 5px;"> INSTRUCTIONS: <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 2px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 2px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 2px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 2px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 2px;"></div> </div>	<div style="text-align: right; margin-bottom: 5px;">SCENE NO: 11</div> <div style="border: 1px solid black; padding: 5px;"> NARRATION: <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 2px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 2px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 2px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 2px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 2px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 2px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 2px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 2px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 2px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 2px;"></div> </div>

FGSIGS FORM 46
1 MAR 77
10417

Figure 3-6. Storyboard layout, scene 11

Learning Event 2:

DESCRIBE THE PROCEDURES REQUIRED TO VISUALIZE A STORYBOARD

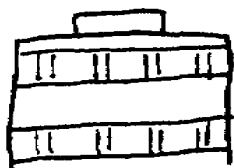
1. As you develop your story, try to visualize the situation you are describing. Remember, you are preparing a visual information program with the emphasis on the word visual. This will be difficult because you have been used to thinking in words; now you must learn to think in terms of pictures. Your picture thoughts should be specific visual representations of real situations or objects.

2. Let's put these principles into actual practice. The objectives, the dramatic treatment, and outline that were developed in the previous lesson are used as an example and put into storyboard format in the next few pages. (This storyboard is developed as a television presentation.) Study these cards to get a better idea of the storyboarding process. See Figures 3-7 through 3-20, for scenes 1 through 27:

STORYBOARD CARD

SCENE NO: 1

USASIGS



P R E S E N T S

INSTRUCTIONS:

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NARRATION:

(Music begins - theme song from "Saturday Night Fever")

1.4.2.2

STORYBOARD CARD

SCENE NO: 2

REPAIRING THE
FM WHIP ANTENNA

INSTRUCTIONS:

Use Character Generator

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1 MAR 77

NARRATION:

(music)

10514

Figure 3-7. Storyboards for scenes 1 and 2

STORYBOARD CARD

SCENE NO: 3

A radio team on a jeep operating their equipment under "combat" conditions.

NARRATION:

(Fade out music and bring in sounds of combat with a radio operator trying to contact higher headquarters.)

INSTRUCTIONS:

Use footage from TF 1-913 with dubbed in audio.

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STORYBOARD CARD

SCENE NO: 4

Continue scene for 3 seconds then Zoom in for a MCU of the antenna.

NARRATION:

(Combat sound fades out but may still be heard in background.)

WHIP ANTENNAS ARE THE MOST COMMONLY USED ANTENNAS FOR TACTICAL RADIO COMMUNICATIONS

THEY ARE MADE OF SECTIONS OF METAL TUBING THAT CAN BE EASILY BROKEN OR LOST IN USE OR STORAGE.

INSTRUCTIONS:

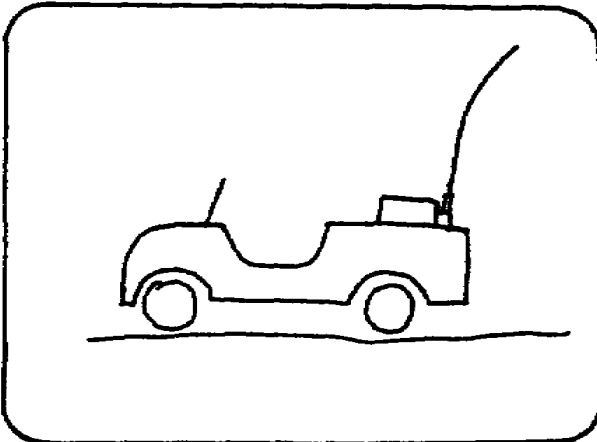
Use a broken antenna

FGSIGS FORM 46
1 MAR 77

Figure 3-8. Storyboards for scenes 3 and 4

STORYBOARD CARD

SCENE NO: 5



INSTRUCTIONS:

slow zoom for a CU
of antenna

NARRATION:

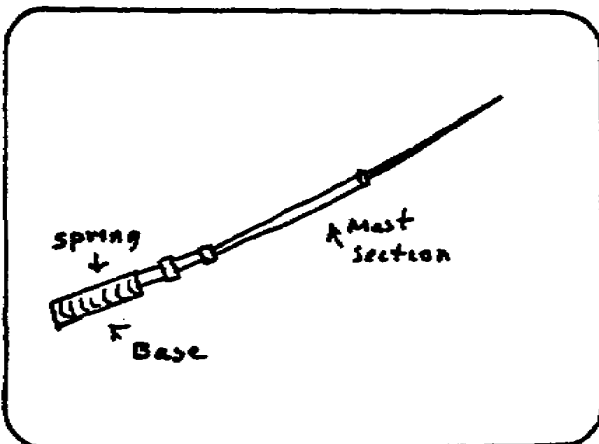
DURING THE NEXT FEW
MINUTES WE WILL
SHOW YOU HOW TO
REPAIR THE VEHICULAR
MOUNTED ANTENNA
USED WITH THE FM
SERIES OF RADIOS.

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STORYBOARD CARD

SCENE NO: 6



INSTRUCTIONS:

Use character generator
to label parts

NARRATION:

THE VEHICULAR MOUNTED
FM ANTENNA IS A
CENTER-FED DIPOLE.
THIS MEANS THAT THE
UPPER HALF OF THE
ANTENNA IS ELECTRICALLY
SEPARATED FROM THE
LOWER HALF, AND YOU
MUST HAVE BOTH
SECTIONS BEFORE YOU
CAN COMMUNICATE
EFFECTIVELY.

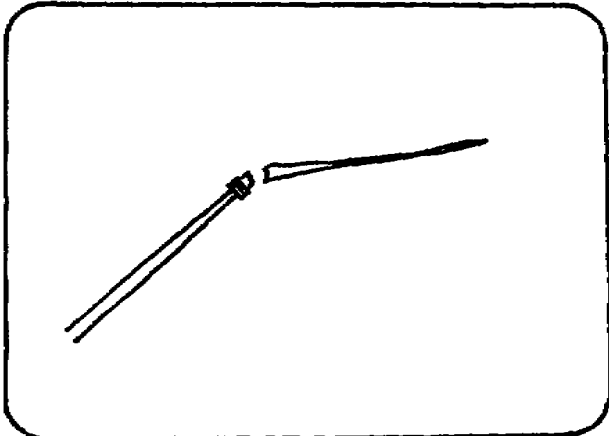
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Figure 3-9. Storyboards for scenes 5 and 6

STORYBOARD CARD

SCENE NO: 7



INSTRUCTIONS:

A broken antenna will be supplied.

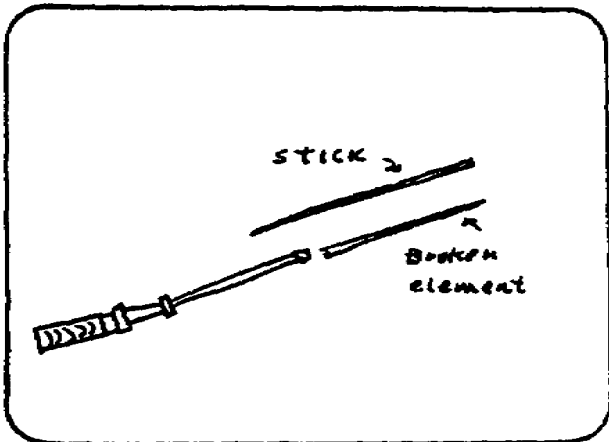
NARRATION:

WHEN THIS ANTENNA BREAKS, IT USUALLY BREAKS AT OR ABOVE THE CENTER CONNECTOR.

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STORYBOARD CARD

SCENE NO: 8



INSTRUCTIONS:

Show the parts on the hood of the jeep. This is where the repairs will take place.

NARRATION:

IF A REPLACEMENT IS UNAVAILABLE, YOU CAN REPAIR THIS ANTENNA USING FIELD EXPEDIENTS. ALL YOU NEED IS:

A STICK OR BRANCH THAT IS THE SAME SIZE OR A FEW INCHES LONGER THAN THE BROKEN PART, --

(MCU OF STICK)

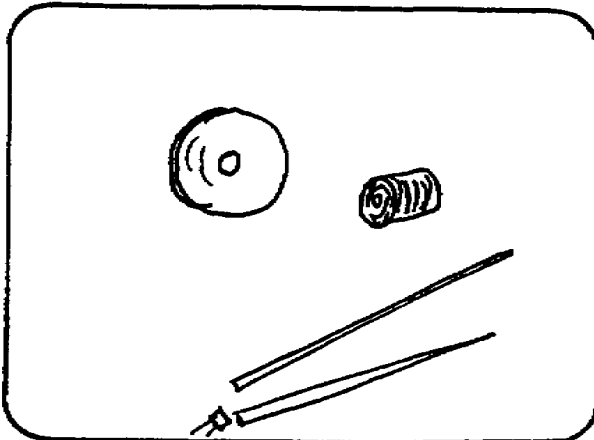
FGSIG FORM 46
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Figure 3-10. Storyboards for scenes 7 and 8

STORYBOARD CARD

SCENE NO: 9



INSTRUCTIONS:

Pan to tape and twine.

NARRATION:

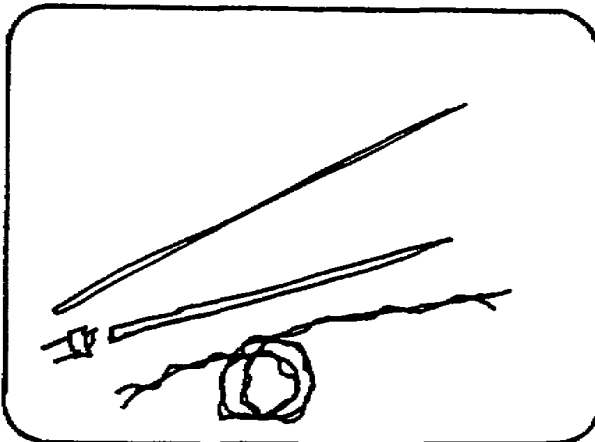
-- A ROLL OF TAPE
OR TWINE, --

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STORYBOARD CARD

SCENE NO: 10



INSTRUCTIONS:

Tilt down to wire.

NARRATION:

-- AND A PIECE OF
WD-1 WIRE THE
SAME LENGTH AS
THE ANTENNA.

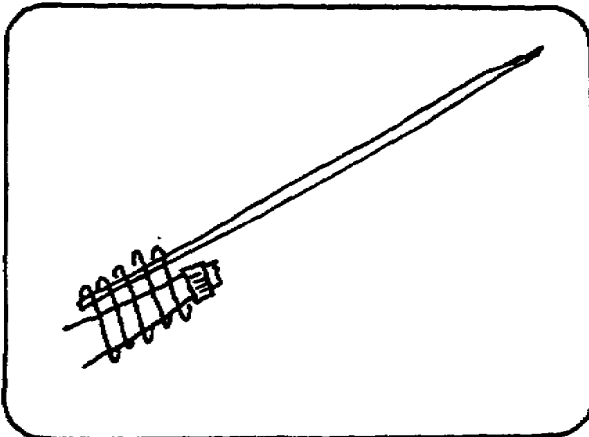
PGSIGS FORM 46
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Figure 3-11. Storyboards for scenes 9 and 10

STORYBOARD CARD

SCENE NO: 11



INSTRUCTIONS:

Show actual tying
- just the hands

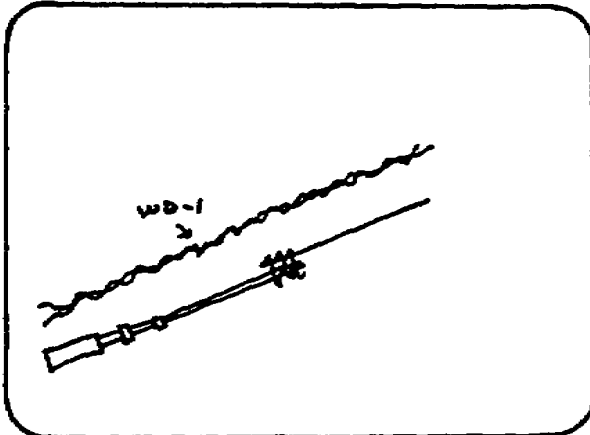
FGSIGS FORM 46
1 MAR 77

NARRATION:

BEGIN THE REPAIR
BY FIRST TAPING
OR TYING THE STICK
TO THE LOWER HALF
OF THE ANTENNA.

STORYBOARD CARD

SCENE NO: 12



INSTRUCTIONS:

Show laying of the
wire.

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1 MAR 77

NARRATION:

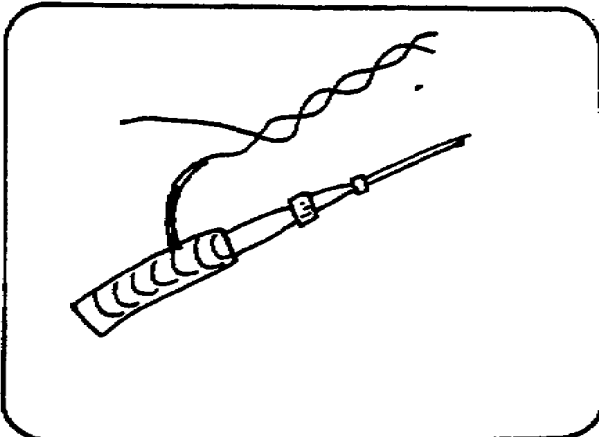
NEXT WE WILL RUN A
PIECE OF WD-1 FIELD
WIRE FROM THE
OUTPUT OF THE RADIO
UP THROUGH THE
LENGTH OF THE
ANTENNA.

1051N

Figures 3-12. Storyboards for scenes 11 and 12

STORYBOARD CARD

SCENE NO: 13



INSTRUCTIONS:

Zoom in for an
ECU of the wire
in the coil.

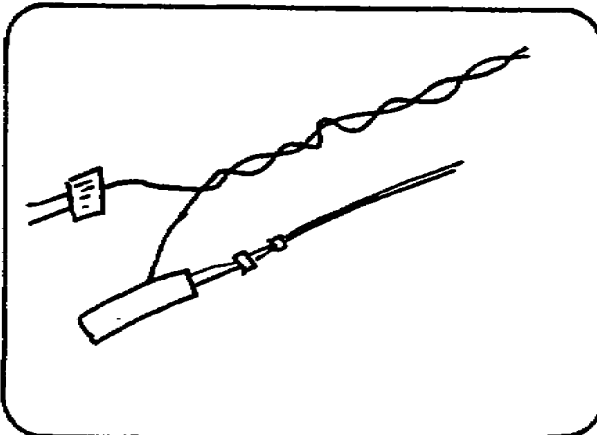
FGSIG5 FORM 46
1 MAR 77

NARRATION:

NOW PLACE THE
STRIPPED END OF ONE
OF THE WIRES
BETWEEN THE COILS
OF THE BASE SPRING.

STORYBOARD CARD

SCENE NO: 14



INSTRUCTIONS:

Show action and zoom
in for an ECU of wire
in the antenna connector

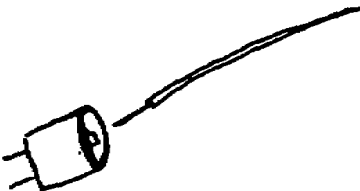
FGSIG5 FORM 46
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NARRATION:

AND THEN STICK THE
STRIPPED END OF
THE OTHER WIRE
IN THE CENTER
OF THE ANTENNA
CONNECTOR.

1051N

Figure 3-13. Storyboards for scenes 13 and 14

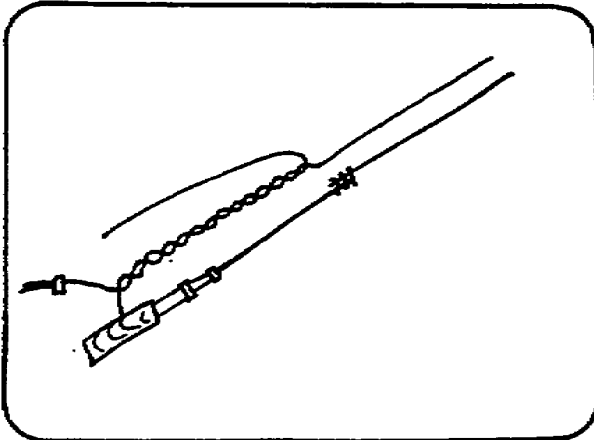
STORYBOARD CARD		SCENE NO: 15
<div style="border: 1px solid black; height: 150px; margin-bottom: 10px; position: relative;">  </div> <div style="border: 1px solid black; padding: 5px;"> INSTRUCTIONS: Zoom in for an ECU of the connector. </div>	<div style="border: 1px solid black; padding: 5px;"> NARRATION: (Silent) </div>	
<small>FGSIGS FORM 46 1 MAR 77</small>		10514

STORYBOARD CARD		SCENE NO: 16
<div style="border: 1px solid black; height: 150px; margin-bottom: 10px; position: relative;"> <p style="position: absolute; top: 50%; left: 50%; transform: translate(-50%, -50%); font-family: cursive;">Show soldier (hands only) unraveling wire.</p> </div> <div style="border: 1px solid black; padding: 5px;"> INSTRUCTIONS: </div>	<div style="border: 1px solid black; padding: 5px;"> NARRATION: NEXT UNRAVEL ONE OF THE WIRES BACK TO THE CENTER OF THE ANTENNA -- </div>	
<small>FGSIGS FORM 46 1 MAR 77</small>		10514

Figure 3-14. Storyboards for scenes 15 and 16

STORYBOARD CARD

SCENE NO: 17



NARRATION:

-- AND THEN FOLD
THE WIRE DOWN TO
THE LOWER HALF
OF THE ANTENNA

INSTRUCTIONS:

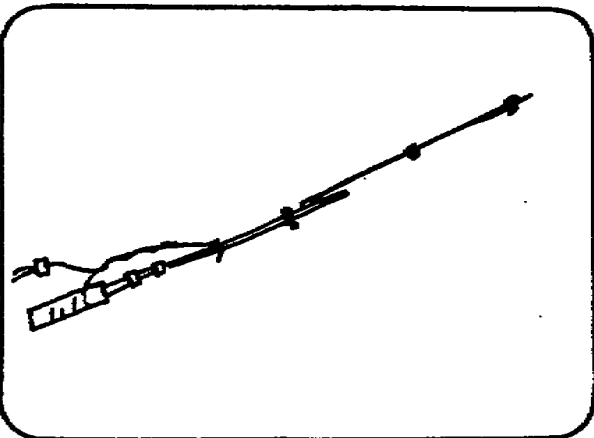
Show action

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STORYBOARD CARD

SCENE NO: 18



NARRATION:

TAPE THE WIRE IN
PLACE ALONG THE
LENGTH OF THE
ANTENNA.

INSTRUCTIONS:

Show CVs of taping
action and how it
looks after completion

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Figure 3-15. Storyboards for scenes 17 and 18

STORYBOARD CARD

SCENE NO: 19

Show operator placing
antenna back into
its mount.

NARRATION:

YOUR FM ANTENNA
IS NOW READY FOR
OPERATION EITHER
AS A FIXED
ANTENNA OR, IF
NECESSARY, AS
A MOBILE ANTENNA.

INSTRUCTIONS:

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STORYBOARD CARD

SCENE NO: 20

(FS Show material
sequence)

NARRATION:

LETS RUN THROUGH
IT AGAIN QUICKLY.

THE MATERIALS ARE:

A STICK OR BRANCH, A
ROLL OF TAPE, A ROLL
OF TWINE, AND
A PIECE OF WD-1
FIELD WIRE.

INSTRUCTIONS:

From scenes 8, 9 and 10

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Figure 3-16. Storyboards for scenes 19 and 20

STORYBOARD CARD

SCENE NO: 21

1. Attach Stick

INSTRUCTIONS:

Use character generator

NARRATION:

AND HERE ARE THE PROCEDURES.

(Music begins - theme song from "Saturday Night Fever")

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STORYBOARD CARD

SCENE NO: 22

(FS Show attaching sequence)

INSTRUCTIONS:

FS of scene 11

NARRATION:

(Music continues)

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Figure 3-17. Storyboards for scenes 21 and 22

STORYBOARD CARD		SCENE NO: 23
<div style="border: 1px solid black; border-radius: 15px; height: 180px; margin-bottom: 10px; display: flex; align-items: center; justify-content: center; font-size: 24px;"> 2. Attach Wire </div> <div style="border: 1px solid black; padding: 5px;"> INSTRUCTIONS: </div> <div style="border: 1px solid black; height: 60px; margin-top: 5px;"></div>	<div style="border: 1px solid black; padding: 5px;"> NARRATION: </div> <div style="border: 1px solid black; height: 250px; margin-top: 5px; display: flex; align-items: center; justify-content: center; font-size: 24px;"> MUSIC </div>	
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STORYBOARD CARD		SCENE NO: 24
<div style="border: 1px solid black; border-radius: 15px; height: 180px; margin-bottom: 10px; display: flex; align-items: center; justify-content: center; font-size: 24px;"> (Show wire connection sequence) </div> <div style="border: 1px solid black; padding: 5px;"> INSTRUCTIONS: </div> <div style="border: 1px solid black; height: 60px; margin-top: 5px;"></div>	<div style="border: 1px solid black; padding: 5px;"> NARRATION: </div> <div style="border: 1px solid black; height: 250px; margin-top: 5px; display: flex; align-items: center; justify-content: center; font-size: 24px;"> (MUSIC) </div>	
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Figure 3-18. Storyboards for scenes 23 and 24

STORYBOARD CARD		SCENE NO: 25
<div style="border: 1px solid black; border-radius: 15px; height: 180px; margin-bottom: 10px; display: flex; align-items: center; justify-content: center; font-size: 24px; font-family: cursive;"> 3. Tape in Place </div> <div style="padding: 5px;">INSTRUCTIONS:</div> <div style="border: 1px solid black; height: 60px; margin-top: 5px;"></div>	<div style="padding: 5px;">NARRATION:</div> <div style="border: 1px solid black; height: 280px; margin-top: 5px; display: flex; align-items: center; justify-content: center; font-size: 24px; font-family: cursive;"> (music) </div>	
<small>FGSIG5 FORM 46 1 MAR 77</small>	<small>1052N</small>	

STORYBOARD CARD		SCENE NO: 26
<div style="border: 1px solid black; border-radius: 15px; height: 180px; margin-bottom: 10px; display: flex; align-items: center; justify-content: center; font-size: 24px; font-family: cursive;"> (Show taping Sequence) </div> <div style="padding: 5px;">INSTRUCTIONS:</div> <div style="border: 1px solid black; height: 60px; margin-top: 5px;"></div>	<div style="padding: 5px;">NARRATION:</div> <div style="border: 1px solid black; height: 280px; margin-top: 5px; display: flex; align-items: center; justify-content: center; font-size: 24px; font-family: cursive;"> (music) </div>	
<small>FGSIG5 FORM 46 1 MAR 77</small>	<small>1052N</small>	

Figure 3-19. Storyboards for scenes 25 and 26

STORYBOARD CARD

SCENE NO: 27

The radio team
operating their
equipment.

NARRATION:

(Fade music out)

THE OUTCOME OF MANY
BATTLES HAS BEEN
DECIDED BY
EFFECTIVE
COMMUNICATIONS.

(Combat sounds and voice
of operator in background)

INSTRUCTIONS:

Same as opening scene.

Bring in voice of radio
operator after narration.

YOUR ABILITY TO
REPAIR AN ANTENNA
MAY SOMEDAY HELP
YOU OUT OF A
CRITICAL SITUATION

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Figure 3-20. Storyboard for scene 27

3. Let's try your hand at storyboarding! Using the following situation, develop the first five scenes in the cards below. (Don't make the "title scenes.")

Scene: The subject is automobile safety. You want to show that the number of people killed per year can fit in a football stadium.

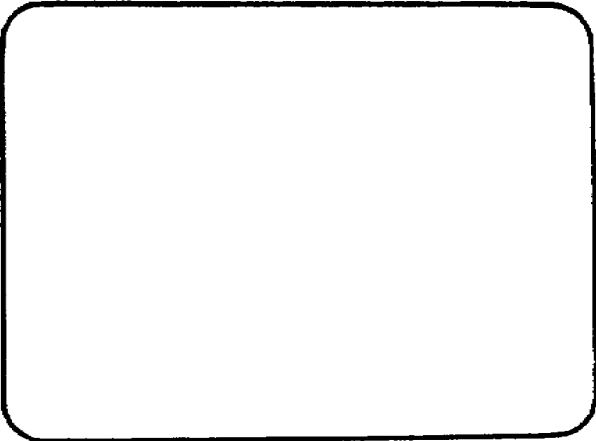
Scene: You may now want to show that some of these people might be killed on the way home from the game.

Scene: People can change when they get into a car. They become aggressive; they feel powerful.

Scene: Then there are those people that may have been drinking.

NOTE:

Start with a shot of a packed football stadium and follow an exciting play. Then go into your "ideas".

STORYBOARD CARD		SCENE NO:																				
<div></div> <div>INSTRUCTIONS: <table border="1"><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr></table></div>						NARRATION: <table border="1"><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr></table>																

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Figure 3-21. Practice storyboard

STORYBOARD CARD		SCENE NO:
<div style="border: 1px solid black; height: 180px; margin-bottom: 10px;"></div> <p>INSTRUCTIONS:</p> <div style="border: 1px solid black; height: 50px;"></div>	<p>NARRATION:</p> <div style="border: 1px solid black; height: 250px;"></div>	
<small>FGSIS FORM 46 1 MAR 77</small>	<small>1051M</small>	

STORYBOARD CARD		SCENE NO:
<div style="border: 1px solid black; height: 180px; margin-bottom: 10px;"></div> <p>INSTRUCTIONS:</p> <div style="border: 1px solid black; height: 50px;"></div>	<p>NARRATION:</p> <div style="border: 1px solid black; height: 250px;"></div>	
<small>FGSIS FORM 46 1 MAR 77</small>	<small>1051M</small>	

Figure 3-21. Practice storyboards (continued)

STORYBOARD CARD		SCENE NO:
<div style="border: 1px solid black; height: 180px; margin-bottom: 10px;"></div> <p>INSTRUCTIONS:</p> <div style="border: 1px solid black; height: 60px;"></div>	<p>NARRATION:</p> <div style="border: 1px solid black; height: 250px;"></div>	
<small>PGSIGS FORM 46 1 MAR 77</small>		<small>1051M</small>

STORYBOARD CARD		SCENE NO:
<div style="border: 1px solid black; height: 180px; margin-bottom: 10px;"></div> <p>INSTRUCTIONS:</p> <div style="border: 1px solid black; height: 60px;"></div>	<p>NARRATION:</p> <div style="border: 1px solid black; height: 250px;"></div>	
<small>PGSIGS FORM 46 1 MAR 77</small>		<small>1051M</small>

Figure 3-21. Practice storyboards (continued)

Learning Event 3:
IDENTIFY ELEMENTS OF THE FINAL SCRIPT

1. This is the final product in the "building block" process of writing a script. You are now ready to take the storyboard and put it into a script format. This script is the detailed blueprint that will provide all the necessary directions to those involved in producing a first-class visual information presentation. Some of the information contained in the script will include directions for: picture taking, artwork, filming, camera placement (or angle), audio, and special effects.
2. The script is laid out in a vertical two-column format and will look like the format shown on the next page (fig 3-22).
3. Figure 3-23 shows a completed script. Study this script; compare it to the storyboard and the other products to see the "building block" process. Remember - this script was specifically designed for television, but format and principles are still the same.

AUDIOVISUAL SCRIPT	TITLE :
VIDEO	AUDIO
<ol style="list-style-type: none"> 1. All video instructions will be on this side. 2. Video is single spaced and in upper and lower case. 3. Each scene from the storyboard should be on this side and numbered accordingly. 4. Same video as in 3 5. In addition to video description, show camera shots, angles and placement EX: "CU to HS shot", "Cut to LS of ..." 6. If this is a slide presentation, this column <u>may</u> indicate slide number also. 	<ol style="list-style-type: none"> 1. ALL AUDIO WILL BE ON THIS SIDE. 2. DOUBLE SPACE ALL AUDIO AND CAPITALIZE ALL SPOKEN AUDIO. 3. THE CORRESPONDING AUDIO FROM THE <u>SAME</u> SCENE <u>MUST</u> BE HERE. 4. (All parenthetical notes on this side are not spoken. They indicate sound effects, directional notes or music). 5. (Silent) 6. (Music Observe copyright laws when using music. TRADOC provides authorized music). 7. (Keep these things in mind about the audio): <ol style="list-style-type: none"> a. It explains the details of the video. b. It places emphasis on the center of attention. c. It must be closely related to the visual to reinforce it.

Number Pages

Page ____ of ____ pages

Figure 3-22. Script layout

AUDIOVISUAL SCRIPT	TITLE: Repairing a Whip Antenna
VIDEO	AUDIO
<ol style="list-style-type: none"> 1. Standard USASC&FG introduction logo. 2. Title: Repairing the Antenna 3. Footage from TF 1-913- show a radio team operating their equipment. 4. Continue scene for 3 seconds then zoom for an CU of broken antenna. 5. FS of jeep then a slow zoom for an FS of antenna. 	<ol style="list-style-type: none"> 1. (Music begins - theme song from "Saturday Night Fever") 2. (Music continues) 3. (Fade out music and bring in sounds of combat with a radio operator trying to contact higher headquarters. 4. (Sound fades out but may still be heard in background.) V.O., Narrator: WHIP ANTENNAS ARE THE MOST COMMONLY USED ANTENNAS FOR TACTICAL RADIO COMMUNICATIONS. THEY ARE MADE OF SECTIONS OF METAL TUBING THAT CAN BE EASILY BROKEN OR LOST IN USE OR STORAGE. (Sound fades out) 5. DURING THE NEXT FEW MINUTES WE WILL SHOW YOU HOW TO REPAIR THE VEHICULAR-MOUNTED ANTENNA USED WITH THE FM SERIES OF RADIOS.

Page 1 of 5 pages

Figure 3-23. Completed script

AUDIOVISUAL SCRIPT	TITLE: Repairing a Whip Antenna
VIDEO	AUDIO
6. FS of antenna and identify main parts using character generator.	6. THE VEHICULAR MOUNTED FM ANTENNA IS A CENTER-FED DIPOLE. THIS MEANS THAT THE UPPER HALF OF THE ANTENNA IS ELECTRICALLY SEPARATED FROM THE LOWER HALF AND YOU MUST HAVE BOTH SECTIONS BEFORE YOU CAN COMMUNICATE EFFECTIVELY.
7. FS of a broken whip antenna.	7. WHEN THIS ANTENNA BREAKS, IT USUALLY BREAKS AT OR ABOVE THE CENTER CONNECTOR.
8. FS of antenna on the hood of the jeep. Zoom to an MCU of the stick laying next to broken part.	8. IF A REPLACEMENT IS UNAVAILABLE, YOU CAN REPAIR THIS ANTENNA USING FIELD EXPEDIENTS. ALL YOU NEED IS (pause) A STICK OR BRANCH THAT IS THE SAME SIZE AND A FEW INCHES LONGER THAN THE BROKEN PART.
9. Pan to an MCU of tape and twine.	9. A ROLL OF TAPE OR TWINE (pause)
10. TILT DOWN TO CU OF WIRE.	10. AND A PIECE OF W-D ONE WIRE THAT IS THE SAME LENGTH AS THE ANTENNA.
11. CU of the hands of a soldier tying the stick to the antenna.	11. BEGIN THE REPAIR BY FIRST TAPING OR TYING THE STICK TO THE LOWER HALF OF THE ANTENNA.

Page 2 of 5 pages

Figure 3-23. Completed script (continued)

AUDIOVISUAL SCRIPT	TITLE : Repairing a Whip Antenna
VIDEO	AUDIO
12. MS of soldier laying out wire next to antenna.	12. NEXT, WE WILL RUN A PIECE OF W-D ONE FIELD WIRE FROM THE OUTPUT OF THE RADIO UP THROUGH THE LENGTH OF THE ANTENNA. (pause)
13. MS of a soldier picking up the wire and inserting it in the coil. Zoom to an ECU of the wire in the coil	13. NOW PLACE THE STRIPPED END OF ONE OF THE WIRES BETWEEN THE COILS OF THE BASE SPRING. (pause)
14. Show soldier placing wire in connector.	14. AND THE STRIPPED END OF THE OTHER WIRE IN THE CENTER OF THE ANTENNA CONNECTOR.
15. Zoom in for an ECU of the connector.	15. (Silent)
16. MCU of soldier unravelling wire.	16. NEXT, UNRAVEL ONE OF THE WIRES BACK TO THE CENTER OF THE ANTENNA.
17. MCU of soldier folding wire back.	17. AND THEN FOLD THE WIRE DOWN TO THE LOWER HALF OF THE ANTENNA.
18. MCU of soldier taping wire in place then zoom in for a CU then to an ECU of a taped part.	18. TAPE THE WIRE IN PLACE ALONG THE LENGTH OF THE ANTENNA.

Page 3 of 5 pages

Figure 3-23. Completed script (continued)

AUDIOVISUAL SCRIPT	TITLE : Repairing a Whip Antenna
VIDEO	AUDIO
19. FS of operator placing antenna back into the mount.	19. YOUR FM ANTENNA IS NOW READY FOR OPERATION EITHER AS A FIXED ANTENNA OR, IF NECESSARY, AS A MOBILE ANTENNA.
20. FS from scenes 8, 9, and 10.	20. LETS RUN THROUGH IT AGAIN QUICKLY.... THE MATERIALS ARE ... A STICK OR BRANCHA ROLL OF TAPE OR TWINE AND A PIECE OF WD-ONE WIRE.
21. Show "1. Attach stick" using character generator.	21. AND HERE ARE THE PROCEDURES. (Music begins - them song from "Saturday Night Fever")
22. FS from scene 11.	22. (Music continues)
23. Show "2. Attach wire."	23. (Music)
24. FS from scenes 13, 14, 15, 16 and 17.	24. (Music)
25. Show 3. "Tape in place."	25. (Music)
26. FS from scene 18.	26. (Music)

Page 4 of 5 pages

Figure 3-23. Completed script (continued)

4. The script format is standard in the field, though there may be some variations. For example, slide presentations may be written as shown in Figure 3-24.

storyboard	
Title: WHAT IS ISD?"	
Page 1	
VISUAL	NARRATION
SLIDE 1 — Black Slide	*1 (Establish space sounds — Electronic Reverb. Take under for narrator.)
SLIDE 2 — Title Slide What is ISD?	<u>NARRATOR:</u> *2 "There's a good question. <u>PAUSE</u> What is ISD?" CT-2
SLIDE 3 —	<u>FIRST VOICE: Mature, authoritative</u> "ISD? <u>PAUSE</u> Well, er, ah, ummmm, ISD, IS CT-3 a highly complex new military concept. *3 <u>PAUSE</u> Though it isn't exactly classified, very CT-3
SLIDE 4 —	few people know much about it. <u>PAUSE</u> You CT-2 might say, however, that it is somewhat related
SLIDE 5 —	to the PDQ and *4 or, the DMZ, while retain- ing many of the educational features of the UFO
SLIDE 6 —	Of course, on the other hand, *5 <u>PAUSE</u> it CT-2 operates to maximize symmetrical operational
SLIDE 7 —	correlations, through the utilization of a bilateral progression of behavioral *6 philosophies." (Fade First Voice under and out after "bilateral." <u>SECOND VOICE: Female, sexy</u> "I think ISD is cool; <u>PAUSE</u> it really turns me CT-3 on." *7 !

Figure 3-24. Slide script

Write a script using the form below and on the following pages using the storyboard presentation from Figure 3-21, pages 57 through 59.

AUDIOVISUAL SCRIPT	TITLE :
VIDEO	AUDIO

Page ____ of ____ pages

Figure 3-25. Practice for slide script

AUDIOVISUAL SCRIPT	TITLE :
VIDEO	AUDIO

Page ___ of ___ pages

Figure 3-25. Practice for slide script (continued)

AUDIOVISUAL SCRIPT	TITLE :
VIDEO	AUDIO

Page ____ of ____ pages

Figure 3-25. Practice for slide script (continued)

AUDIOVISUAL SCRIPT	TITLE :
VIDEO	AUDIO

Page ____ of ____ pages

Figure 3-25. Practice for slide script (continued)

AUDIOVISUAL SCRIPT	TITLE :
VIDEO	AUDIO

Page ___ of ___ pages

Figure 3-25. Practice for slide script (continued)

5. Summary. When writing a script for an educational visual information program, use the "building block" process and principles that we covered:

- a. Research the subject,
- b. Develop the outline,
- c. Write the treatment,
- d. Develop the storyboard, and
- e. Write the script.

6. We will never be able to overstress the fact that to be a good scriptwriter, you need more than the principles and exercises we covered in this subcourse. Your ability to be creative is essential; your "free-thinking" ideas and innovations are the elements that will enable you to become a good scriptwriter rather than "just" a scriptwriter. If you are in a position to use these principles, and practice them, then you are on your way to becoming a good scriptwriter. Remember, always write a script that uses the "personal" touch: "you should do", "we will;" and "Sergeant Jones received", etc. Good luck to YOU!

Lesson 3
PRACTICE EXERCISE

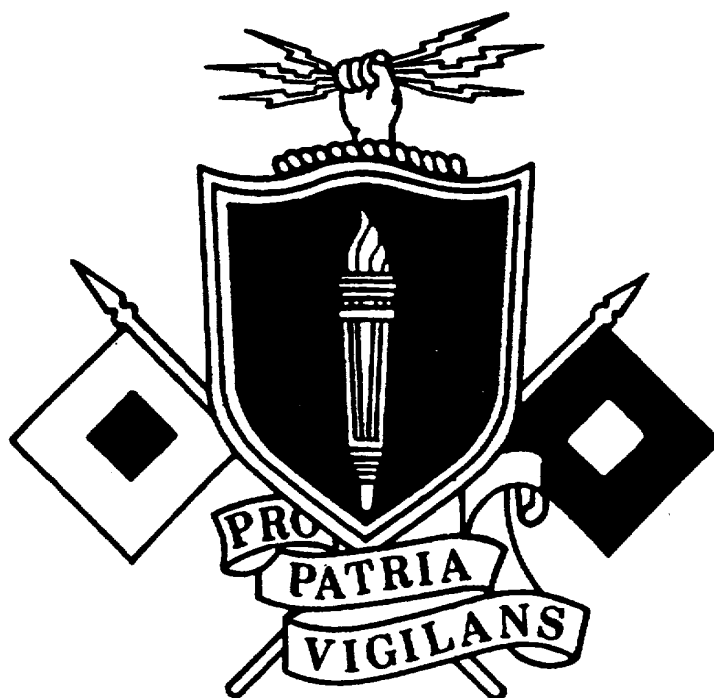
1. What elements make up the building block process of script writing?
 - a. Objectives, outline, treatment
 - b. Research, evaluation, summary
 - c. Alliteration, description, sound effect
 - d. Harmony, hardwork, and happiness
2. How is a storyboard card set up?
 - a. Audio on left, video on right, scene number centered upper left
 - b. Video on left, audio on right, scene number upper right
 - c. Audio on top half, video on bottom half, scene number lower left
 - d. Video on top half, audio on bottom half, scene centered on bottom
3. What is the necessary skill to develop as a writer when preparing a storyboard and a script?
 - a. Think in terms of descriptive words
 - b. Think in terms of pictures
 - c. Write for the ear
 - d. Write good, formal sentences
4. What is a final test of learning the principles of script writing for a visual presentation?
 - a. Pass a 50-question multiple-choice test
 - b. Write a 15-minute audio script with at least 5 cameras
 - c. Put the principles learned into actual practice
 - d. Write a funny, descriptive short story
5. What is the final product in the building block process of script writing?
 - a. The production
 - b. The critique
 - c. The script
 - d. The director
6. A script contains directions for picture taking, artwork, filming, and what other three elements?
 - a. Objectives, lessons, and summary
 - b. Names of actors, director, and writer
 - c. Time, place, and attitude
 - d. Camera angles, audio, and special effects

7. What are the two final steps after researching, outlining, and writing a treatment?
- a. Check with the producer, then the director
 - b. Do a storyboard, then write the script
 - c. Contact the public affairs officer and TRADOC
 - d. Select sound effects and music
8. In the final analysis, what is a key ingredient you need to be a good script writer?
- a. Know how to spell
 - b. Strive for perfection
 - c. Double- and triple-check everything you do
 - d. Be creative and a "free thinker"

ANSWERS TO PRACTICE EXERCISES

Test Question Number	Correct Response	(Learning Event	<u>Reference</u> Paragraph	Page)
Lesson 1				
1	b	1	2a,b	2
2	c	1	2b	2
3	c	2	1	2
4	b	2	2	2
5	d	3	1	6
6	c	3	1b	6
7	a	4	1	10
8	d	4	2, a,b, c	11
Lesson 2				
1	d	1	1	14
2	b	1	2	14
3	c	2	Fig 2-1a	17
4	b	2	Fig 2-1a	17
5	a	3	1b	24
6	c	3	2d	25
7	b	4	2a	27
8	c	4	2b and c	27
Lesson 3				
1	a	1	1	36
2	b	1	2, Fig 3-1	37
3	b	2	1	42
4	c	2	2	42
5	c	3	1	60
6	d	3	1	60
7	b	3	1	60
8	d	3	6	73

FILMING UNCONTROLLED ACTION
(DEVELOPMENTAL DATE: 30 JUNE 1987)



THE ARMY INSTITUTE FOR PROFESSIONAL DEVELOPMENT
ARMY CORRESPONDENCE COURSE PROGRAM

**A
I
P
D**

READINESS /
PROFESSIONALISM



THRU
GROWTH

US ARMY MOTION PICTURE SPECIALIST
MOS 84C SKILL LEVEL 1 COURSE

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FILMING UNCONTROLLED ACTION
(Developmental Date: 30 June 1987)

SUBCOURSE NO. SS0535-7

US Army Signal Center and Fort Gordon
Fort Gordon, Georgia

Three Credit Hours

GENERAL

This Filming Uncontrolled Action subcourse is designed to teach you the knowledge necessary to perform tasks relating to uncontrolled and semicontrolled action. Information in this subcourse is also available in the resident motion picture course taught in Advanced Individual Training (AIT) for MOS 84C. This subcourse is also intended to provide transition and merger training for soldiers holding MOS 84F, Audio, Television Production Specialist. This course is presented in two lessons, each lesson corresponding to a terminal objective listed below.

Lesson 1: PREPARATION

TASK: Prepare outline and equipment.

CONDITIONS: Given information and diagrams relating to preparing to film uncontrolled and semicontrolled action.

STANDARDS: Demonstrate competency of the task skill and knowledge by correctly responding to 85 percent of the multiple-choice test covering preparation.

(This task supports SM Task 113-578-2025, Prepare a Shooting Outline for Uncontrolled Action.)

Lesson 2: FILMING TECHNIQUES

TASK: Shooting uncontrolled action.

CONDITIONS: Given information and diagrams relating to uncontrolled and semicontrolled action.

STANDARDS: Demonstrate competency of the task skill and knowledge by correctly responding to 85 percent of the multiple-choice questions covering filming techniques.

(This objective supports SM Task 113-578-2044, Use Filming Techniques.)

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Whenever pronouns or other references denoting gender appear in this document, they are written to refer to either male or female unless otherwise noted.

*** IMPORTANT NOTICE ***

THE PASSING SCORE FOR ALL ACCP MATERIAL IS NOW 70%.
PLEASE DISREGARD ALL REFERENCES TO THE 75% REQUIREMENT.

INTRODUCTION TO FILMING UNCONTROLLED ACTION

These two lessons on filming uncontrolled action are designed to teach you the methods of filming uncontrolled action within your unit. The techniques are based on motion picture cameras. However, these lessons are equally adaptable to television camera usage. The television cameraperson can and should use these same techniques. Army Visual Information units are becoming more tactically oriented and will require efficient motion picture filming. Most of this motion picture filming will be performed in the field. Your ability to support the Army with usable motion picture or television documentation may well spell the difference between mission failure and mission accomplishment.

The term "visual information" has replaced "audiovisual" in the Army of Excellence.

LESSON 1 PREPARATION

TASK

Prepare outline and equipment

CONDITIONS

Given information and diagrams relating to preparing to film uncontrolled and semicontrolled action.

STANDARD

Demonstrate competency of the task skills and knowledge by correctly responding to 85 percent of the multiple-choice test covering preparation.

REFERENCES

FM 11-82

Learning Event 1: DOCUMENTING ACTION

1. Uncontrolled action is usually associated with combat, news, sports, and field training. Uncontrolled action is any action that you cannot control in any way. The opposite is controlled action. Controlled action is usually a production-type situation. Semicontrolled action is a situation where you have some, but not total control over the action. Before you can shoot uncontrolled documentation action, you must be well grounded in the mechanics of television and film making. This includes: basic sequence, reestablishing, use of cut-ins and cut aways, screen direction, and continuity. When you understand how a good film is made, then you can make a good documentation film or a television tape.

2. One of the most difficult assignments a cinematographer has to handle is uncontrolled action. You must not only be technically correct, but must also think ahead for the next shot. This can be very difficult. One method of making the job easier is to use the shooting outline.

a. Unlike a script, the outline is a rough sketch of what the cameraman wishes to film. Except for spot news, most filming is planned. This planning may take days or it may take hours. Nevertheless, there is some planning that can be done before a mission is filmed.

b. Documentary filming is a vital component in the overall assignment of keeping the commander informed. The sight-and-sound report of daily happenings is measured by a narrow strip of celluloid or tape that mirrors the events which affect the lives of all who are part of this modern world of shrinking distances.

c. Every assignment is a challenge. The cameraman is a documentor armed with a delicate precision instrument. He must be thoroughly schooled in techniques of motion picture photography.

d. The ability to film motion picture or television footage of technical excellence is not the sole criterion of a documentation cameraman. True, they must have the previously mentioned qualifications, but coupled with this, they must be resourceful and capable of thinking clearly and quickly.

e. One of the biggest problems new cameramen have is filming under stress. That is, when the action will occur only once and there is no time to get a repeat shot, or when there is a time limit to get the film completed.

3. Elements of news documentation.

a. It is not simple to formulate a definition of news. A formal definition might be "until now, unpublished reports of those activities of mankind calculated to interest, inform, and/or entertain the public." Such a definition might satisfy Webster, but to really understand what makes news requires a knowledge of which activities interest people. Just what is it that interests the public?

b. Let's look into the mind of a news editor. When an editor evaluates material for newsworthiness, what do they look for? Some of the elements of news which the news editor considers are immediacy, proximity, consequence, prominence, oddity, conflict, sex, emotion, and progress. Let's consider these elements one at a time.

(1) Immediacy, or timeliness, relates to news being news. People are interested in current events. An editor may change the content of the news for an important event that occurred in the last hour, but tomorrow the same film may not even be considered because it is already "old stuff."

(2) Proximity relates to events that happen close to home. People want to know what goes on around them. If a soldier at Fort Carson receives a commendation for saving another soldier's life, it might appear on Colorado Springs' television at 6 PM, possibly on Denver television at 10 PM, but probably not at all on Los Angeles television.

(3) Consequence appears when newsworthy events affect human relationships or present a change in the status quo. News that affects many persons, even in a small way, is usually widely read.

(4) Prominence simply refers to the greatness or importance of the subject. Editors will run, as news, insignificant events if they happen to someone of consequence, such as the president.

(5) Oddity in an event is that which causes it to deviate from the normal. Unusual events or occurrences are inherently newsworthy.

(6) Conflict implies physical contact. Exploits of a football or baseball team are tales of conflict. Films contain conflict when they show man pitted against man, or man against the elements, or describe battles, riots, etc.

(7) Sex receives a large play in the news reporting. As military cameramen, direct your thinking to that which interests the sexes. Male readers are usually interested in sports, finances, and those things that affect their work. Women, while also interested in these things, are also usually interested in fashions and social events.

(8) Emotion is an all-inclusive term that sums up all the feelings, curiosity, sympathy, and anger possessed by human beings. It ranges from satisfaction of purely animal instincts to the highest spiritual strivings. It includes innate desire for food, clothing, and shelter; the ebb and flow of ambition, hate, love, envy, generosity, humor; and many other instincts.

(9) Progress is news that shows a change for the better. Anything concerned with maintaining peace, atomic energy, a cure for cancer, or technical developments, contains a newsworthy element that not many editors will pass up.

4. Treatment of documentation.

a. The most important thing to do when filming or taping documentation is to orient yourself to the event or happening. Then lay out a mental or written shooting script. Film your key shots first. Think in terms of a one or two-minute edited story.

b. Provide as much pictorial continuity as the situation allows. Locate the scene. Show where the event is happening. This would be the establishing shot. Try to create interest through a good choice of angles. Show people whenever possible and avoid static scenes. If possible, stage action when the situation permits. Complete the story by filming any immediate consequence of the event.

c. Try to think ahead so as to anticipate the action. Try to find out as much as possible about the event before you start filming. Ask questions of people in charge. This could be the police, fire fighters, or public officials. When possible try to speak to the highest official available on the scene. Many times the person closest to the action is not aware of the overall event. Locate the best camera angles before the event whenever possible.

d. If possible, duplicate important scenes. The second scene may result in a better expression or action. Try to vary the angle, distance, or where necessary, the focal length. When the action moves from one area to another or lighting conditions change, it is important to maintain proper exposure.

e. Shoot a lot of cut-ins and cutaways. Cut-ins very often can be obtained before or after the event. About 1/3 of your footage should be devoted to cut-ins and cutaways. These are absolutely necessary for the editor to put together a film that will fit into the time available. The final thing to do is to submit detailed caption information. This subject will be discussed in the next lesson.

5. Problems with sports.

a. Photography of sports and action demands the utmost from the photographer. Shooting this type of assignment requires considerable mental and physical agility, and a great deal of emphasis is placed on mastery of equipment and anticipation of the action. If you are not ready at the right place and at the right time, you may as well have remained at home. Sports photography requires a little different approach from that needed for an action sequence. The difference is in preparing for the assignment.

b. The first step in a sports assignment is preparation. You must research the sport. Usually, the sports assignment goes to the cameraman with an interest and knowledge of the activity, and you may meet these requirements. But regardless of your knowledge of the sport, it pays off to refresh your knowledge by researching the players. Players are specialists in their field. Some break fast and move with deceptive speed. Others excel under the basket, or with a bat. Know the players and their characteristic specialties. If a ballplayer known for his base stealing prowess is on first base, you should be ready for the action at second base. Also, a scene showing players arguing with officials can add color to your coverage.

c. Being familiar with the playing field can help you select the best camera angles, best distances to action centers, and so forth. For example, some ball fields have a short left field that invites home runs or action on the third base line. Research the coaches or team managers. Their individual characteristics and personalities can provide vivid color for your report. Coordinate your desires with these individuals. Clear your way to get some shots during timeout, or in the locker room.

d. A major point to remember when shooting sports is that you cannot ask the player to go back and redo the play for you. You get only one chance for the big one. To be a competent sports cameraman, you must be physically alert, agile, and aggressive. You must always remain mentally alert to anticipate the action and be decisive when it occurs.

6. Understanding how to shoot uncontrolled action, whether it is documentation, sports, a field training exercise or a combat documentation, requires the same techniques. If you can shoot under one type of uncontrolled conditions, you can film or tape under all conditions.

Learning Event 2:

WRITE OUTLINE

1. Before you can shoot an uncontrolled action you must have a plan. The first part of planning is gathering the data necessary to prepare a plan.

a. Preplanning.

(1) Anything a person does in this world is only as good as the planning that goes into the effort. A great deal of time and money can be wasted if a person tries to complete a task without first planning how he or she will accomplish it. The more planning that is done before starting a task, the quicker and more efficient will be the final outcome.

(2) Your preplanning must include such things as assembling equipment, notifying team members, ordering transportation, contacting the Public Affairs office if necessary, coordinating with other agencies that may be involved with the mission, researching the subject and writing a shooting out line.

(3) As part of your preplanning you will want to find out if there are any special or abnormal situations that may cause problems with filming or taping. Weather and climatic extremes could pose technical problems if you were not aware of them. You may be stationed at a post where the temperature is 70° and the sun is shining; but where you are going the temperature is 10° and it is snowing. You must make sure you and your equipment are prepared for any climatic extremes at the area you will be working in.

b. Research.

(1) Once you are aware of what the mission is to be, you can start your researching. First of all, are you familiar with the subject matter? If not, researching is the first thing you should do. You may want to go to the library and look up the subject and find out how it works, how it is done, or how to operate it. The more you know about the subject, the more insight you will have in filming the subject. It would be difficult for you to effectively film a golf match if you did not understand how the game is played. It is the same with any assignment. You can be a more effective cameraman if you understand the subject. Researching a subject before going on a mission has saved more cameramen from doing a poor job than you can imagine.

(2) There are many sources for material on any given subject. If it is a military subject, you may be able to obtain the information you need in your unit publication files, technical orders, or regulations. You may have a unit on your base or post that does essentially the same job. You could get the basic facts about the job there. Do not forget about your post library. You would be surprised as to the wealth of information and facts that are available at your library.

2. After all the necessary data has been assembled, you are ready to write a shooting outline. The outline is not a script as you would use in a production. It is a plan of what scenes you want to shoot in order to document a complete story.

a. The shooting outline is one of the first steps in preparing to film a story. Let us say you receive notice that a high ranking dignitary will arrive on the post and you will be required to document his visit.

(1) Your first step is to contact the public affairs office and the protocol officer. These contacts will advise you as to date and time of arrival, place of arrival, number of people in the party, and length of stay. As soon as possible, obtain a copy of the itinerary so that you can plan your filming locations.

(2) Next, you will want to go to the various locations and spot your shooting positions. Some of the things to check are: location of sun (try to keep sun behind you), if indoors, is power available for lights or will portable sun guns be necessary, what areas would be best for filming, and what angles would be best. Also, if power is available, you need to know how many extension cords are necessary.

b. Let us take a hypothetical assignment. Your unit received the following orders: "The Chief of Staff of the Army and his party are expected to arrive at your post tomorrow. Command requires complete picture coverage of all official activities of the Chief of Staff and his party while on our post." Your assignment is to get the motion picture or television coverage.

c. After you check with the protocol and public affairs office in charge of this event, you find that the Chief of Staff and party are expected to arrive by aircraft at 1300 hours tomorrow. The party will consist of the Chief of Staff and three aids. The purpose of their visit is to inspect the post and to award several decorations. The Chief of Staff and party plan to depart by aircraft at 1700 hours on the same day.

3. Writing.

a. With this information, you can now write your shooting outline and estimate the number of people and the equipment you will need to accomplish your mission. In an event of this kind, you cannot expect to stage or control many shots. It is similar to a grab bag--you reach in and take what you can, when you can. The following shooting outline is representative of what you might come up with:

(1) Scene 1. A series of shots from different angles of the Chief of Staff's helicopter as it lands at the heliport.

(2) Scene 2. Various shots of the Chief of Staff and party as they disembark from the helicopter and are greeted by the Post Commander. One stationary and one hand-held camera.

(3) Scene 3. Various angles as the party inspects honor guard. Two hand-held cameras.

(4) Scene 4. Multiple angles of the Chief of Staff presenting awards. One stationary and two hand-held cameras.

(5) Scene 5. Chief of Staff making a short speech. One stationary and two hand-held cameras.

NOTE: The term "hand-held camera" is used interchangeably with camcorder or ENG camera.

(6) Scene 6. Series of shots showing party touring the post. Two hand-held cameras working in a leapfrog pattern.

(a) Dining hall 1st Brigade.

(b) Post gymnasium.

(c) Post library.

(d) Maintenance Battalion.

(7) Scene 7. Multiple shots as the Chief of Staff returns to the parking ramp, boards aircraft, and it takes off. Two stationary and two handheld cameras.

(8) Your shooting outline should look like Figure 1-1.

SHOOTING OUTLINE				
SUBJECT: Chief of Staff Visit & Inspection		WO No. 87-110	DATE AND TIME 1000 11 Apr 87	
LOCATION: Ft Carson 4th Inf Div (Mech)				
SCENE No.	PROBABLE ACTION	LOCATION	TYPE OF SHOT/LENS	CAMERA LOCATION/ANGLE/LIGHTING
1.	Arrival at heliport	Front of Div Hq	LS,MS. Circling, landing	1 stationary, 2 hand held
2.	Disembark	Heliport	LS,MS,CU C/S & party exit	1 stationary, 1 hand held
3.	Honor guard	Front of Div Hq	LS,MS,CU of C/S & Div Cdr and honor guard members. Get lots of CI & CA shots	2 hand held Get salute as pass flags
4.	Awards presentation	Front of Div Hq	LS,MS,CU of presentations, get CU of soldiers faces	1 stationary, 2 hand held
5.	C/S speech	Front of Div Hq	MS,CU of C/S speaking. Get CA of crowd and other spectators	1 stationary, 2 hand held
6.	Tour of Post	Dining hall bldg 112 Post Gym bldg 255 Post library bldg 14 4th Maint Bn-bldg 670	LS,MS,CU of tour. Leapfrog to each new site.	2 hand held
7.	Return to Heliport	Heliport, front of Div Hq	LS,MS,CU party boards helicopter takes off	1 Stationary, 2 hand held
8.	Fly away	Helicopter exits Ft Carson	LS of helicopter leaving	1 stationary. Use back light and have helicopter exit frame

Figure 1-1. Shooting outline

(9) It could also be a very simple list of shots. This would include the scene number and probable action columns from the more formal shooting outline. Wherever possible, use the more formal style of outline. Whichever you use, the outline is an important part of your planning.

b. In analyzing your shooting outline scene by scene, you know that you need one tripod-mounted 16mm sound or television camera with two personnel, one to shoot and one to operate sound. Also, you need two hand-held cameras and one operator for each camera. As for film and tape requirements, each powered camera should have at least three loaded 400-foot (121.92m) magazines of film available or three 20-minute TV tapes. The two hand-held cameras should have no less than 600 feet (182.88m) of film or three 20-minute TV tapes available for each camera. This amount of film or tape for the four cameras allows for proper coverage of any normal camera, film, tape, or magazine malfunction. Now, let's see how the cameras might be used.

(1) In scene 1, the stationary camera (tripod-mounted) could be placed in a high position for an establishing shot showing the entire parking ramp with troops standing in formation, and the Chief of Staff's helicopter arrives at its designated parking spot. At the same time, the second stationary camera can be shooting a closeup of the helicopter as it is taxiing toward the parking position. During this period the two hand held cameras should be moving about picking up additional shots of the troops at attention, closeups of the Post Commander and various base personnel as they are awaiting the arrival, shots of the spectators, and a few shots of the band playing. In other words, capture all possible color for the opening scene.

(2) In scene 2, if possible, a stationary camera should be used for a medium shot showing the Chief of Staff and party descending the stairs leading from the aircraft and being greeted by the Post Commander. At this time, a hand held camera should be used for extreme closeups of both the Chief of Staff and the Post Commander as they are greeting each other.

(3) In scene 3, the two hand-held cameras should cover the Chief of Staff and Commander as they walk between ranks and inspect the honor guard. You should shoot from different angles, high and low, to provide as much variety as possible. This is a good chance to get a lot of cut-ins and cutaways.

(4) In scene 4, a stationary camera should be used for a medium long shot to establish the scene. The hand-held cameras should be used for closeups of the Chief of Staff as he pins the decorations on and shakes hands with the recipients.

(5) In scene 5, the stationary camera can be used for a medium shot showing the Chief of Staff in the foreground as he makes a short speech to the troops. This angle should include the Chief of Staff with the official party shown in the background. The hand-held cameras can be used during this time to film the reaction of the troops while the Chief of Staff is speaking.

(6) For scene 6, the two hand-held cameras should be used. Having studied the schedule, you have picked the highlights of this tour and will

shoot them. Always be ready for the unexpected. Many times things that you had not planned on will happen. So be prepared to shoot these unexpected happenings.

(7) Scene 7, showing the departure of the Chief of Staff, is practically a reversal of the first scene. The stationary camera can be used again for a medium shot showing the farewell, also the Chief of Staff and his party boarding the plane. The two hand-held cameras should be used for the closeups during this time. As the helicopter starts up, the stationary camera should follow it until it is out of sight.

c. At this time you might ask, "Why so many different camera angles for each scene?" Remember, you are following the action, scene by scene, as it happens, and there are bound to be breaks in continuity. The reason for different camera angles, whether they be long, medium, or closeup scenes, is to give the film editor ample footage to provide overlapping or matching action between scenes. This creates more audience interest, particularly when you move from a long or medium shot to a closeup. The long shot allows the audience to gather the full scope of the proceedings, and in the closeups, it sees exactly what is taking place at the point of interest. The fact that you will shoot cut-ins and cutaways goes without saying.

d. You can see that the shooting outline not only serves as a program for planning the sequence of coverage, but it also provides a basis for determining equipment, supplies, and personnel requirements, as well as, planning camera placement, movement, and shot framing. It also provides the time and date and where to report.

4. Prepare equipment.

a. After you have written the outline, you must get your equipment together.

b. After analyzing your outline you realize that you will need more than one camera and cameraman. This is when you must go to your NCOIC and present your outline. The NCOIC may modify it to use less equipment or personnel, but if you prepared a good outline, it should be justification for this effort.

c. In addition to equipment, you will need film, or tape, batteries, and a few extra items for backup.

d. Depending on which position you will be assigned on the mission, you must select your camera and equipment.

(1) Will you be shooting from a stationary position with a tripod-mounted camera or be mobile with a hand-held camera? If tripod-mounted, you will need large magazine or tape capacity, a tripod, and extra loaded magazines or tape.

(2) Do you have sufficient spare parts and extra expendables for the mission? Extra batteries are always first on a list of "spare parts." Extra film reels and cables, spare light bulbs for lamps, extension cords, and filter. Something as simple as a broken takeup reel could completely stop a filming session for quite a long time. It is usually the little things that cause a mission to abort. A good cameraman usually has all the little things necessary to keep the mission going.

e. The last thing you want to happen is that you run out of film, or tape, or your batteries die. Select your equipment, test it, and make sure your film is of the right ISO and matches the other cameramen.

f. Make sure you have the correct conversion filters, whether you are filming or taping.

LESSON 1
PRACTICE EXERCISE

1. What is the most important thing to do when filming documentation?
 - a. Prepare equipment
 - b. Orient yourself
 - c. Load camera
 - d. Write script
2. If possible, when filming what should you do for important scenes?
 - a. Duplicate them
 - b. Shoot around them
 - c. Add cut-ins and cutaways
 - d. Provide pictorial continuity
3. To be a competent sports cameraman, what must you be?
 - a. On time
 - b. In the right spot at the right time
 - c. Properly equipped
 - d. Alert, agile, and aggressive
4. If the President of the United States makes a statement, what element of the news does it fall into?
 - a. Proximity
 - b. Progress
 - c. Prominence
 - d. Oddity
5. When filming a subject, what extra equipment should you carry for backup?
 - a. Tripods
 - b. Batteries
 - c. Cameras
 - d. Empty cases
6. When must you research a subject?
 - a. When outline is complete
 - b. During preplanning
 - c. After shooting
 - d. While preparing captions

LESSON 2
FILMING TECHNIQUES

TASK

Shooting uncontrolled action.

CONDITIONS

Given information and diagrams relating to uncontrolled and semicontrolled action.

STANDARDS

Demonstrate competency of the task skill and knowledge by correctly responding to 85 percent of the multiple-choice questions covering filming techniques.

REFERENCES

FM 11-82

Learning Event 1:
USE BASIC SEQUENCE

1. The foundation of good camera technique is referred to as the "basic sequence." This applies to both film and TV cameras. Do not be disturbed at the mention of "camera technique" or "basic sequence," and anticipate many complicated rules to be followed. They are a set of simple points used by professionals to achieve good footage. If you want to tell a story, you must put together a wide variety of shots so as to obtain a smooth, meaningful, visual flow of action. The basic sequence is the most important of all the camera techniques that you will learn in your motion picture or television course. In short, you must understand your medium as well as your camera; you must know pictorial continuity. Pictorial continuity is the framework of every well-constructed motion picture, whether it is a Hollywood epic, newsreel, documentary, or service training film.

a. In 1907 most films were still produced as though they were plays. Each scene began with the entrance of the actors and lasted, unbroken, until their exit. The players were always shown full size and at a fixed distance from the camera. The motion picture still looked to most people like a shadowy carbon of the living theatre. No one knew how to break away from the older medium.

b. The man who did break away, and brought to life a new art, was David W. Griffith. He made his first radical innovation in 1909 when he departed from the old "one scene--one shot" method by demanding a change of camera position in the middle of the scene. In moving the camera closer to the actors, he had invented the "full shot" in which only the upper half of the

player's body was shown. The studio managers were shocked and believed people would think the camera work amateurish and that this scene had been included in the film by mistake. But the audiences, pleased at being able to read the actor's thoughts in their expressions, unmistakably endorsed the new method. Despite studio opposition, Griffith moved his camera nearer and nearer to the players.

c. As Griffith began to take closeups not only of his actors' faces but also of objects and other details of the scene, he demonstrated that it was the "shot" and not the actor which was the basic unit of expression of the motion picture. When, to the full shot and the closeup, he added the extreme long shot in 1909, he had completed the "long shot--medium shot--closeup" combination which remains today the classic approach to the material in every motion picture scene. After he also added a method of assembly and composition of these lengths of film taken of action at varying distances, the basis of modern technique had been established.

2. Continuity in cinematography.

a. The main goal of a cinematographer is to present the scenes he films in such a manner that they convey a complete idea to the viewer. To accomplish this requires considerable thought and planning. Individual scenes, each presenting an idea or part of an idea, must be arranged in logical sequence. Related scenes should flow one into another so that there will be no gap in continuity. Unrelated scenes must be joined into the film with smooth transitions so that they are accepted by the viewer as part of the story continuity. A well-filmed sequence, like a good story, starts with an interest-exciting introduction, progresses smoothly through its story, builds up to a climax, and reaches a reasonable conclusion.

b. As a motion picture or television cameraman, you will contribute the most vital element to a film production. You will supply the footage of the action and also film the footage needed for transitions that allow the editor to maintain continuity. You will usually work from a script when shooting controlled action, and you will furnish the scenes called for. But, since much of your time is likely to be spent shooting uncontrolled action, you must be well-founded in the basic shot techniques so that you can apply them to your shooting.

c. In this learning event we will discuss the basic shot breakdown and some of the techniques involved in applying it. We want to emphasize that these techniques are not absolutely rigid rules. You must know that the difference between a passable production and an outstanding work is the skill and imagination you use with these various techniques. Almost any cameraman can perform adequately by paying reasonable attention to applying the basic techniques. But the outstanding cameraman is the one who uses these techniques to create an interesting and imaginative production.

3. Basic sequence.

a. Every motion picture or television story is made up of one sequence or more. A sequence is a series of related scenes photographed with the long

shot, medium shot, and closeup technique. Each sequence is a complete story within itself.

In recording activity, the need for sequences becomes even more apparent. It is important that sequences be photographed with the idea that they will portray a completely understandable story when they are put together and projected on the screen. In other words, the story must be developed in the long shot, medium shot, and closeup, and not be left to the imagination of your audience.

(1) A good cinematographer will employ the three basic sequence shots of scenes, the long shot (LS), medium shot (MS), and closeup (CU). Let's take the long shot first. As the name implies, this is a shot taken at some distance from the subject. In the case of a man standing, it would most likely be a full-figure shot and would probably include some sky and foreground area. Second, the medium shot of the same person would probably cover from the top of his head to just below his waist line. Third, the closeup would most likely be of the person's head and shoulders.

(2) In many cases the three basic sequence shots are expanded to include the extreme long shot (ELS) and the extreme closeup (ECU). An extreme long shot of our standing person would show him as being quite small in relation to the rest of the picture. As an example, you can visualize an extreme long shot of a boat on the shore of a lake with a small figure of a man approaching it. The LS, MS, and CU show him getting in the boat, taking his seat and preparing to start the motor. Then an extreme closeup of his hands on the motor starter.

(3) When shooting the basic sequence, you should bear in mind that the size of the subject in relation to the full picture area is purely relative. The camera-to-subject distance will vary for any particular long shot, depending on the size of the original subject being photographed. For example, the distance required for a long shot of a humming bird would be an extreme closeup of a man's face. The main point to remember is that the size of the subject, in relation to the area it occupies on the screen, determines whether it is a long shot, medium shot, or closeup. You may find it hard to differentiate between these shots. Where does a long shot end before it becomes a medium shot? There is no hard-and-fast rule governing it. Your own good judgement and opinion is the only answer.

(4) At this point you are probably wondering where all these shots are used. Actually, it is a rather simple procedure and closely corresponds to the way the written story can be broken down to a basic structure of words, sentences, paragraphs, and chapters.

(5) A typical example of events in their logical sequence might be to place a camera in the position of a soldier when he walks into an orderly room to pick up his leave papers. His first impression is a broad general view of the room and the people in it; this is the long shot. Next, he walks closer to the first sergeant who is talking to the company clerk. The soldier approaches the group and the usual greetings are exchanged. That is your

medium shot. Finally, the soldier walks up close to the first sergeant to pick up his leave papers and directs his conversation exclusively to him. At this point you see only the first sergeant's head and shoulders. Now you have your closeup. If this series of events were to be filmed, the camera lens would take the place of the soldier's eyes and normally would record the same sequence of events.

(6) To impress this concept firmly in your mind, let us repeat the entire sequence once more, only this time see Figure 2-1 as a guide.

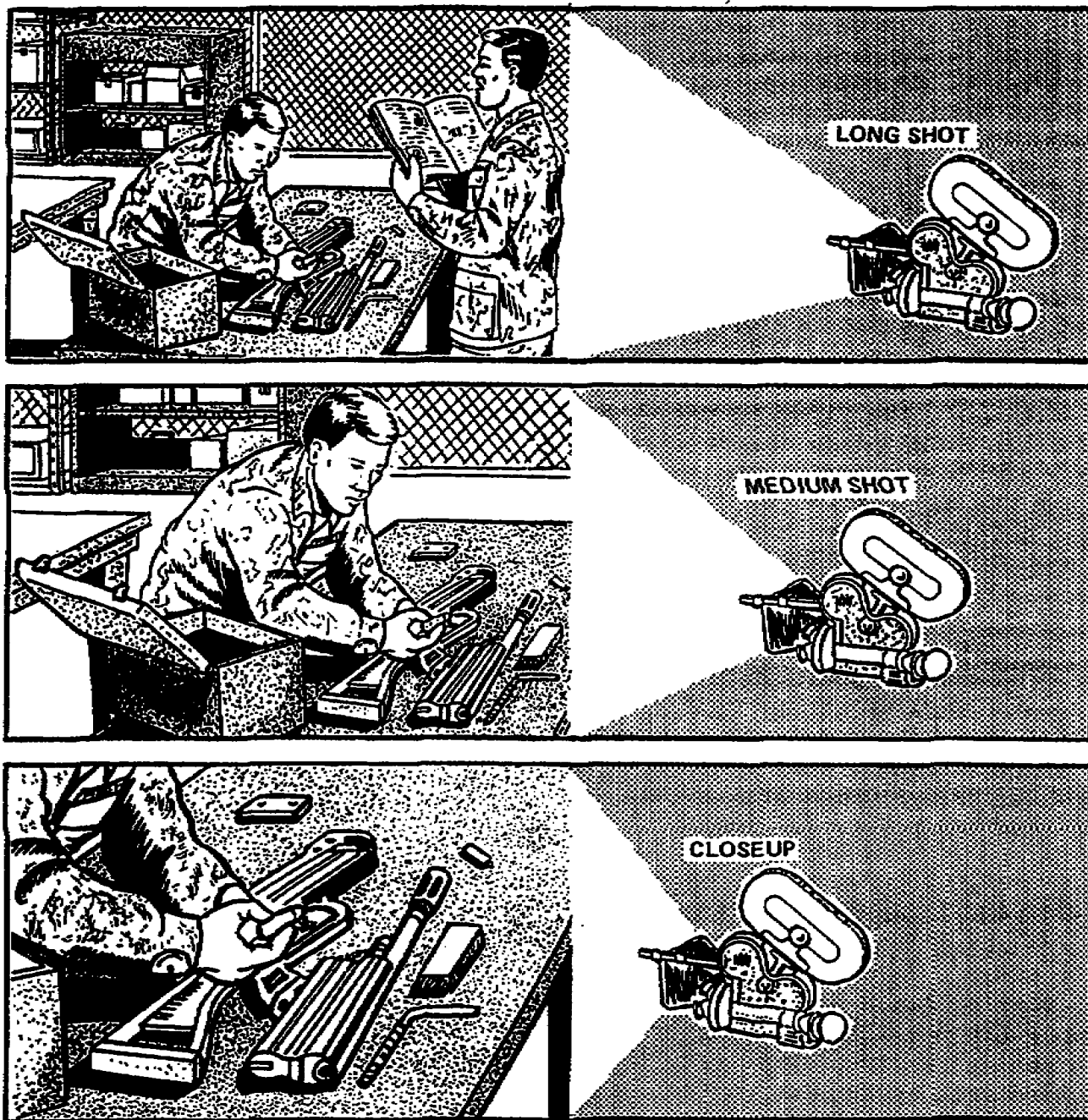


Figure 2-1. The three basic shots

Notice that this scene shows a soldier field-stripping a rifle. This is basically what the long shot shows--the man is leaning over the table with the rifle parts spread out. If you're interested in this action, you would move in for a closer look and, as you approach, at one point you would get an intermediate view of the action which is pictorially represented by the medium shot. Then, when you finally arrive at the scene of the action, you see it represented by the closeup. Each shot shows the action in more detail until, in the closeup, you can see every bit of the action. In Figure 2-1, this would be the soldier taking the weapon apart under the guidance of his squad leader.

(7) The shot breakdown, long shot, medium shot, and closeup, is a transition intended to take the viewer from a distant point to the place where the action is taking place and to do it in reasonable, believable steps. There are other means of accomplishing this and they will be mentioned later.

(8) At this point you may be wondering if changes to the LS, MS, and CU sequences can be made. Can you start with the CU? Yes, you can! After you have gained some experience, you might use such a technique. To illustrate, say you are shooting a training sequence for the military police. The first shot in the sequence might show a closeup of a gun lying on the floor. Then the camera might back up and a medium shot would show an overturned lamp and table. Immediately the viewer knows that some act of violence has occurred. Where has this taken place? Up to this point, until he sees the long shot, the viewer doesn't know. The LS establishes the fact that the action has taken place in, say, the library of an old home, and perhaps the police are just entering the room. Notice how the 1, 2, and 3 pattern (LS, MS, and CU) has changed to a 3, 2, 1 (CU, MS, LS) pattern. One word of caution: before you try this reversal technique, be sure you are familiar with the normal pattern. The reversal technique is generally used to obtain a special effect only; it should not be overdone.

(9) You may wonder if you can use a 3, 1, 2 order. The answer is that it generally produces an incoherent sequence and tends to confuse the audience. This is not to imply that it cannot be done. Almost anything can be done to the basic sequence, but any variation of technique is dependent on the story. Be sure that there is a logical reason when you deviate from the normal pattern. Remember, in most cases, the audience wants to see the action as if they were actually there.

(10) There is one approach to cinematography that you must consider at all times. Anytime you are taking motion pictures, you should feel that you are actually seeing for your audience. The simple fact is that if you don't shoot a scene, your audience won't see it. As soon as you stop shooting, your audience stops seeing; and if there are gaps in the continuity, your viewers can not fill them simply by looking around. The audience will see only what is on the screen. In the above mentioned mystery story, the culprit may have left by an open window, but the viewer won't know this unless you show the window on film. If the open window is important to the story, you must show it. Otherwise, a vital part of the story will be lost. Rather than risk forgetting the first important point in shooting successful motion

pictures or television, let's briefly review the important reasons for including all three of the basic shots.

b. The long shot. This normally is the first shot of the sequence, and it establishes the locality of the area the audience is viewing; hence this shot is sometimes called an establishing shot. It also gives the audience some background knowledge to prepare them for the scenes that follow. Without the long shot your audience may wonder where they are, and where the action is taking place. The locale must be set for every sequence, and the long shot is the technique used to accomplish this purpose.

c. The medium shot. While the long shot sets the scene, the medium shot introduces the action and the audience becomes aware of who, or what, the center of interest is. In addition, the medium shot allows for smooth transition from the long shot to the closeup. Remember in our earlier orderly room scene, the long shot showed the first sergeant and the company clerk. The MS then led the viewer's attention away from the room as a whole to a group of three people. The MS also provided smooth transition to a closeup of the main actors. A smooth transition from LS to CU is most necessary. Can you imagine the confused faces of the audience if you went from a LS of the whole room to a CU of the first sergeant's face?

d. The closeup.

(1) The closeup takes the viewer right to the action. Everything is eliminated from the scene except the particular thing you are bringing to the viewer's attention. The CU can create a feeling of intimacy and warmth. The next time you are talking to someone, notice how you are constantly looking at his face and picking out various details. Certainly you don't back off about 20 feet while talking with him. The same thing applies when shooting your film.

(2) The closeup is the most important shot of a sequence. It shows detail of the action thereby holding the audience's interest. You might consider it the climax of the sequence for just as a story has its introduction, build-up, and climax, each sequence has its LS, MS, and CU, with the CU being the most dramatic of them all.

(3) But there are other applications of the closeup. In training films, the closeup shows the viewer what he is supposed to learn. Through the closeup, the actual performance of a task can be demonstrated in such a way that the viewer has little difficulty understanding it, and complex operations can be made comparatively simple. Situations of this sort usually call for a series of closeups, perhaps three or four. After that, it is necessary to reestablish the scene to remind the viewer of the action as a whole.

4. There is, in the art of cinematography, what is known as the Absolute Rule. This rule states, "Whenever the camera is stopped, change the angle and/or image size before you resume filming." Sometimes it is preferable to change both. This rule must be followed at all times when shooting action of any type. About the only time it is not used is when you are filming animation or inanimate objects.

a. With the filming of sequences comes the problem of visual retention versus closeups. The average person viewing a film or tape on the screen ordinarily will retain only one or two scenes immediately preceding the scene being projected. With so much of the surroundings being eliminated in closeups, the audience occasionally must be reoriented in relation to those surroundings. Closeups without reorientation will tend to confuse, and may even completely "lose" the spectator; especially where several closeups appear consecutively. This reorientation is accomplished by making what is generally termed the reestablishing shot. This will be explained in the next learning event.

b. When we speak of the extended sequence we mean the basic sequence, that is, long, medium, and closeup with the addition of extreme long shots and extreme closeups.

c. Finally, the entire sequence can be reversed. Start with a closeup and move back to the long shot.

Learning Event 2:

SHOOT REESTABLISHING SHOTS

1. Reestablishing.

a. An audience usually has difficulty remembering more than one scene back. The experienced cameraman reorients his audience from time to time by furnishing scenes for this purpose. These scenes are called reestablishing shots.

(1) A series of related shots make a sequence and sequences joined together make a story. Sequences should be joined together with a reestablishing shot. This makes the story clear, unbroken, and results in a smooth flow of action.

(2) The reestablishing shot (RS) usually is a medium or long shot. It usually follows a closeup and is used to reestablish the general scene. In other words, it reminds the audience where they are.

(3) The RS is used to tie sequences together and to keep the audience from getting confused or lost. The audience can rarely keep in mind more than one scene at a time and the RS will help keep them oriented. Also it is a good idea to remind audiences how a small scene fits into the larger scene that includes it.

b. Reestablish the scene when the subject is moved from an old to a new location. Use the RS to end a sequence.

(1) In the reestablishing shot, the camera is moved back from the closeup position and a scene is made in which the spectators once again will see where the closeups were taking place in relation to the surroundings. Usually a medium or medium-close shot will serve very well for reestablishing, after which it is perfectly permissible to move in again for more closeups.

Not only does the reestablishment shot keep the audience oriented at all time, but it lends variety in camera positions which is always a desirable factor.

(2) Instead of ending a sequence with a closeup, use a reestablishing shot. This leaves the spectator with the satisfied feeling that he has seen all the important details as the sequence ends, and is not left "hanging in midair" on a closeup while expecting a continuation of the action.

(3) Reestablishing is also used to tie two sequences together. One way of accomplishing this is to reestablish at the end of one sequence and have the person walk out of the scene. Now, by showing the person entering in the establishing scene of the second sequence, a definite relationship has been achieved between the two separate actions even though there may be some distance between the locations of the two sequences; the audience accepting the fact that the story has continued uninterrupted up to this point. This technique is called "moving out and in the frame."

(4) Two sequences also can be tied together by making the reestablishing shot and then panning with the person as he moves from the location of the first sequence, using the pan shot as the opening scene of the second sequence, and continuing the second sequence with medium and closeup shots.

(5) Where two sequences take place near each other, a reestablishing shot can be made in which both locations can be seen. When sequence number 1 is finished, move the camera back to include the location of both number 1 and 2, thus establishing the second location in relation to the first location. The camera can then be moved in for the story taking place at location number 2. This conveys to the spectator the exact distance between the two locations.

c. Methods of reestablishing.

(1) There are three methods of reestablishing a scene. The first is by pulling back; we pull or move the camera back away from the subject. In other words, we go from a closeup to a medium or long shot. We could possibly go from a medium to a long shot. The second method is pulling back and panning. This method is used to follow a subject from one location to another. This is normally used for covering short distances only. The third method is shooting a reverse angle. This is done turning the camera around 180° from the preceding shot. It is usually used to show a subject changing location over a great distance.

(2) Transitional devices are sometimes used to reestablish action. These devices are: gesture or implication; in and out of frame; clean exit and entry, and optical effects.

(3) The gesture or implication is used to show that something is about to happen and the audience knows by the gesture or implication what is to happen next.

(4) Several in and out of frame scenes with clean exits and entries will carry the subject to a very long distance.

(5) Clean exit and entrance used once will carry a subject to a nearby location.

(6) Optical effects are mechanical methods done in the laboratory to reestablish action and make transitions between sequences. The most common opticals are fade-in and fade-out; wipes; dissolves; and swish pans. The swish pan is a panning shot in which the camera moves so fast that the action is blurred and unrecognizable. These effects can be made with a television editing system when shooting TV tape.

d. These techniques are all part of filming a production. That is, you control all the action. Understanding what makes a good documentary will also help you provide good footage when shooting uncontrolled or semicontrolled action. You must first understand what makes a good film. Once you have mastered the techniques, then you will find it rather simple to make good documentation films or tapes.

2. Camera angles.

a. Although the subject of camera angles is different from that of the basic sequence breakdown, the two are very closely tied together. Refer to Figure 2-1 and examine the soldier field-stripping a rifle. If these three scenes had been shot a little differently, the quality of the sequence could have been greatly improved. A simple way to build interest at this point is to change the camera angle between each of the scenes. When you bring the camera closer for each scene, change its angle at the same time, as shown in Figure 2-2.

b. It should be apparent that there is a definite improvement in the sequence when you change not only the camera angle but also the subject distance. If you merely change distance, the only variation between the scenes of the sequence is the change of subject size. Moreover, slight differences in action will be more noticeable on the screen and a change of camera angle will minimize this. Another advantage of changing the camera angle is that it provides variety in your scenes and makes the overall production much more interesting.

c. When changing camera angles, be careful that you do not suddenly reverse or change the camera position to an excessive degree between any two scenes. If the reversal or change is too abrupt, the scene may look as if an entirely different subject is used. By the time viewers realize what has happened, they may have lost the plot. A good rule to follow is never change angle more than 45° between shots.

(1) While you are changing the angle between scenes during the basic sequence breakdown, another variation possibility exists--you can also vary the height of the camera. For example, both the LS and MS are shot at eye level and, then when you are coming in for the CU, you lower the camera to almost ground level. Any type of variation would be suitable here, depending

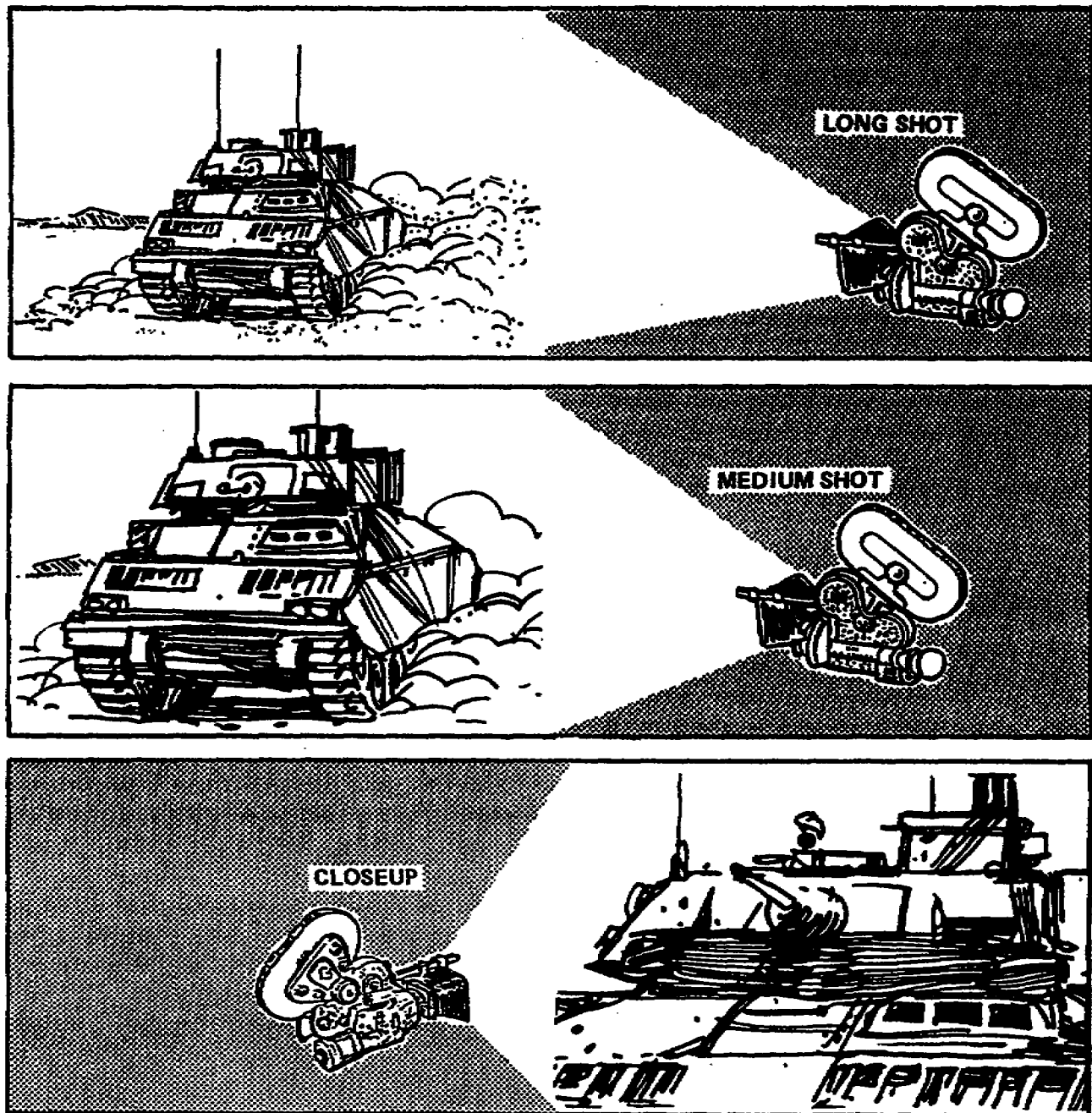


Figure 2-2. Angle and distance variation

on the circumstances of the sequence and the mood you are trying to convey. You will find that a low camera angle tends to make the subject higher and seem more important, while a high viewpoint tends to reduce both the size and apparent importance of the subject. Here again a too-abrupt change of angle can cause audience confusion. Unless you are after a special effect, 45° should be the maximum.

(2) Very often mechanical features of the terrain force you to make a change in camera angle. Using Figure 2-1 as an example, it is possible that an object such as a cabinet might be in the way, causing you to shoot from the rear of the table instead of the side. Each separate scene will vary as to shooting possibilities, and it is impossible to make definite rules; or if they were made, they would be impossible to follow. Here again, your judgement, and eventually your experience, plays a large part. By combining the three different techniques--varying subject distance, changing camera angle, and changing camera height--you reach the ultimate in getting the most interest and variation from the basic sequence. This is not to say that you must use all the variations at all times. It may be that a change in camera angle will not help the scene, or it may be impossible to vary the camera height. So once again your judgement and experience, coupled with the story and combined with the many other consideration, will determine your approach.

(3) By regulating the angle at which the action passes across the axis of the lens, angle shots can serve to speedup or slowdown action. Objects moving at right angles to axis of the lens appear to be the fastest, while objects approaching the lens directly, or going straight away from it, are the slowest. Any degree of apparent speed can be obtained by selecting some angle between these two extremes.

d. The mood of a scene and its psychological effect on an audience can be molded by a proper choice of angle. For example, in some of the horror movies you have seen, the villain is usually shot from a low angle to make him seem huge and menacing, while the heroine would be seen from a high angle to emphasize her helplessness. The scene now gives you the feeling that the villain is all-powerful and cannot be overcome. But when our hero comes to the rescue, he is given the low angle treatment making him the strong personality.

e. The one important thing you should remember when using angle shots is to be careful that your angles are not obvious. Your audience should be aware only of the action and the mental impression being conveyed. If they admire the terrific angles in your sequence, the main objective--telling the story--is lost.

3. Sequence development.

a. The basic-sequence technique is the fundamental step in producing good storytelling documentation. Remember that your job is to tell a story. The basic sequence breakdown, camera angles, and overlapping action all play an important part in maintaining continuity of the story. In a motion picture, continuity is the continuous and coherent flow of the action and story. In the various camera angles that carry a sequence of scenes from a long shot to a closeup, each shot must match the other so closely that anyone viewing the picture on the screen will feel as though he had actually stepped closer to the person or object shown. If you shoot the proper amount of overlapping action, the transition from one scene to the next is unnoticeable, thus contributing to a smooth flow. All of these things play a large part in the production of a good documentary. However, this isn't the entire offering of a good story. Many other factors must still be considered.

b. Maintaining audience interest is the main consideration of a good motion picture or television story. The picture is a failure and is not doing the job it was designed to do if the interest of the audience is lacking. In the case of an instructional or research film, the result is more than just a loss in entertainment value. A new rifle can look good, it can be sturdily constructed, and it can have the latest features; but, if it won't shoot, it's like a movie that can't keep the audience interested -- it just isn't doing the job it was designed to do.

Learning Event 3:
USE CUT-INS AND CUTAWAYS

1. Accepting the premise that the motion picture or television audience has difficulty in recalling more than one scene immediately preceding that which is currently being screened (a fact which the reader may personally check) the cameraman may insert a special scene (or even entire sequences), between two scenes which otherwise, following in rapid succession, would interrupt story continuity. These scenes of slight, yet important, differences intended to divert audience attention are classified as either "cut-ins" or "cutaways."

2. Cut-ins.

a. A technique for maintaining continuity and bridging gaps in action is that of shooting a cut-in. As the name implies, the cut-in cuts into the action taking place and is usually a closeup or extreme closeup.

b. In a sequence showing two people meeting, a closeup of their handshake is a cut-in. If your subject is packing for a vacation, and you wish to show how well-traveled he is, an extreme closeup of hotel labels on his bag constitutes a cut-in.

(1) To illustrate, suppose you are filming a golf tournament. The highlights of the action in a golf game are the drives, the various approach shots, and, of course, the putts. Then, there is a great deal of walking in between these bits of action. The walking is part of the game, but it would be ridiculous to try to show it all. In the first place, you would be bored. Here's where the cut-in technique can make an interesting sequence out of one that would otherwise be unbearable. Your cut-in could be the shot shown in Figure 2-3.

(2) The next scene of the series most likely would be another long shot showing a continuation of the action. The golfer might approach the ball, stop, and sight the cup before making his putt. Another variation of the same technique could be a cut-in filmed in slow motion of the club hitting the ball. Or, you could use a closeup of the golfer's grip on the handle of the club. Any number of variations of the cut-in are possible.

(3) Use your imagination, but do not overdo a good effect. Remember one point, however, a cut-in does just that, it cuts into the action and must be established in the previous scene.



Figure 2-3. The cut-in

3. Cutaways.

a. An opposite, but also effective, technique from the cut-in is the cutaway. In a cutaway, the camera is directed away from the main action to show some parallel action that is taking place at the same time. For example, while filming a troop review, a shot of the audience is a cutaway. It is related to the main action, although not part of it, it is a part of the story and must be shown. The cutaway smoothes out the continuity by bridging gaps and is used to cover up major jumps in action.

b. The cutaway is also used to build atmosphere and stimulate the interest or the imagination of the audience. For instance, while filming a missile launching, cutaways of the block house and the strained faces of the engineers might transmit the feeling of excitement to the audience. Or, suppose you are covering boxing matches. Most of the action is exciting but there are lull periods. These can be filled with cutaways of the time keeper, of the referee, and the spectators. The drama and suspense of the fight might be heightened by extreme closeups of the moving second hand on the timekeeper's stopwatch, and by a shot of the clapper striking the bell at the start or end of a round.

c. During a long story, the cutaway also helps to reorient the audience in essential parts of the plot that are not being shown at the moment. A cutaway of action taking place at widely separated locations can be included if it is part of the story. Thus, the audience is able to follow the plot and even though the story shifts from one area to another, the transition is smooth and acceptable. A simple illustration of the effective use of the cutaway is shown in Figure 2-4. Variety and interest in a golf game are increased by a cutaway to the caddy showing him removing the flag from the cup.

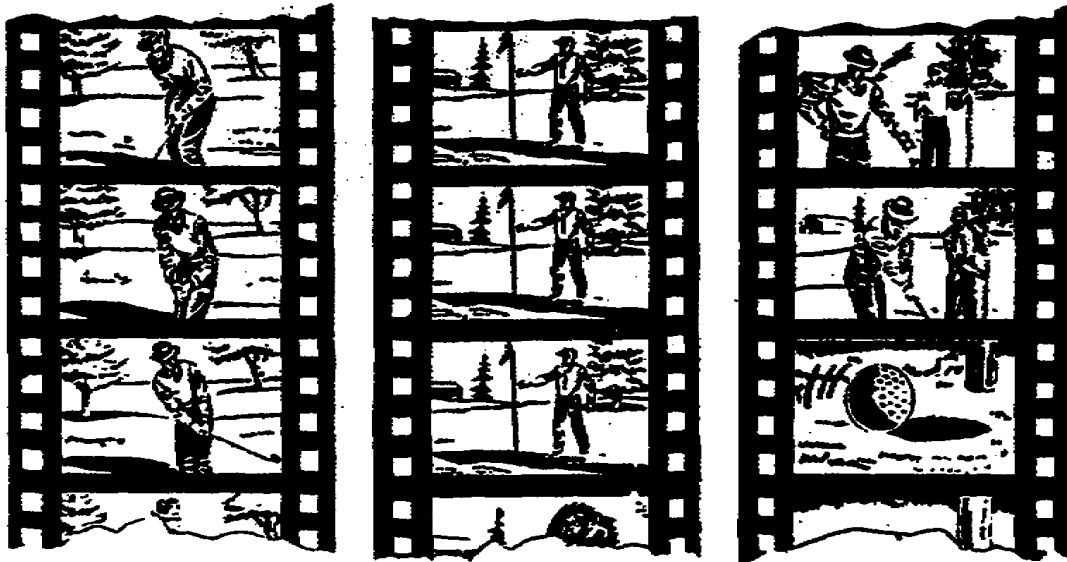


Figure 2-4. The cutaway

4. Requirements and limitations.

a. In order for scenes to be considered suitable for use as cut-ins or cutaways, they must meet certain requirements. These limitations are threefold:

(1) They must change audience attention from what otherwise would be a loss of continuity in order to prevent audience distraction. Losses of continuity can be prevented by footage which includes jumps in action, changes of screen direction or allowance for time passage.

(2) They must be part of the immediate action (a cut-in) or pertain to the story (a cutaway). Footage which does not contribute to the story is not suitable for use. Rather than aid in keeping the audience oriented as to what is occurring, such footage would only serve to confuse the viewers and contribute to the loss of continuity.

(3) If the cut-in or cutaway is to be useful in maintaining audience orientation, it must be clearly established in the audience's mind. The two methods by which this may be accomplished are by either visual awareness on the part of the audience or by suggestion resulting from reasoning or expectation of the audience. For example, a long shot of the street where the tenement fire was taking place, would show the spectators which would normally be expected at the site of a catastrophe. Later, scenes of one or more of these bystanders could be used as cutaways. The audience had previously been made aware of these people by actually seeing them. Should the cameraman have failed to film these onlookers, he could still use shots of these people as cutaways. The audience would assume that these shots were of people watching the fire.

b. Because a cut-in must have been clearly brought to the attention of the audience, as well as having appeared in the immediately preceding scene, the cameraman cannot be satisfied with merely having the cut-in material included in the first scene. The camera angle, image size, and action must be such that where the cut-in is screened, the audience will immediately recognize and understand it. Being part of the immediate action and having been included in the preceding scene, the cut-in is usually a medium shot or closeup.

c. Cutaways, not part of the immediate action, but pertaining to the story, do not necessarily appear in the preceding scene, but must have been established, either visually or by suggestion at any earlier point in the story. Therefore, a cutaway may be anything from an extreme long shot to an extreme closeup.

Learning Event 4:
MAINTAIN SCREEN DIRECTION

1. Screen direction.

a. In motion pictures, your subject spends considerable time moving about. When the subject is seen on the screen going from one place to another, the direction it takes is known as screen direction. It seems obvious that once your subject establishes the direction he is going to take, the audience should see him move in that direction until there is some logical reason for him going in another direction. The audience should then be made aware that the subject is changing direction.

b. To illustrate, suppose you are covering an Armed Forces Day parade and your camera is set up as shown in Figure 2-5. The troops are moving from left to right in front of your camera and will move from left to right across the screen. If you cross the street and pick up the same subjects (fig 2-6), you reverse their screen direction. Even though the parade is still going in the same direction down the street, it is crossing in front of the camera from right to left, and will take that same screen direction. To the viewer, it will look as though the parade is returning to its starting point. He may be completely confused. Thus, you owe it to your viewer to keep him oriented.

c. It is not difficult to maintain screen direction when you are shooting controlled action or uncontrolled action that behaves in a predictable manner. A simple method for establishing and maintaining screen direction is by using an imaginary line drawn through the direction of travel. In the case of the parade (fig 2-7) from the rear through the front of the car, or left to right. If all your shooting is done from the same side of the imaginary line there is no problem. All of your shots will have left to right screen direction. When you are shooting from a script (controlled action), screen direction is easily controlled. However, when you are filming an uncontrolled subject, it helps to note the subject's direction at the end of each scene and refer to it before shooting the next scene.

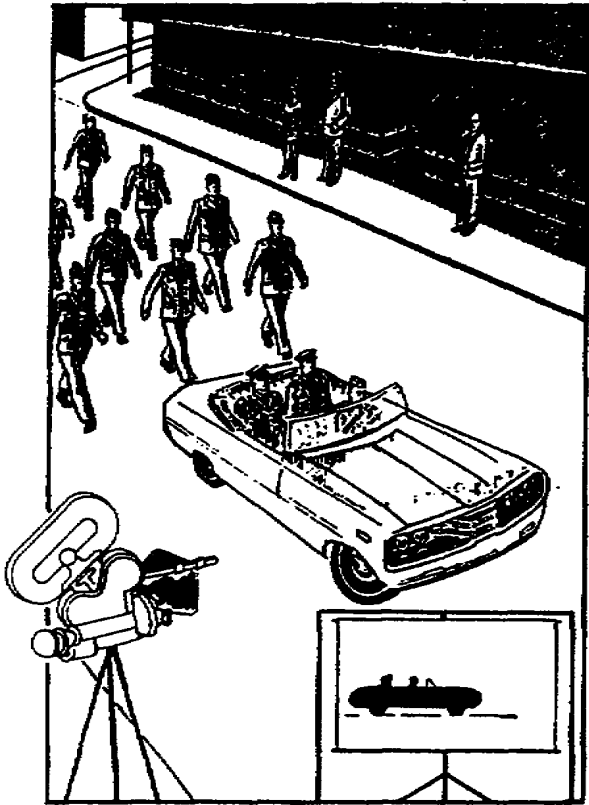


Figure 2-5. Screen direction

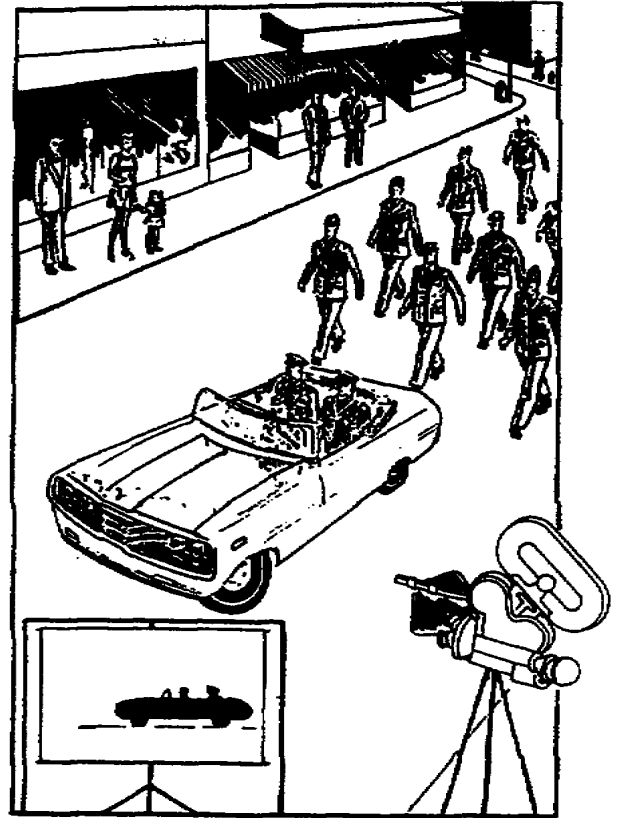


Figure 2-6. Screen direction reversed

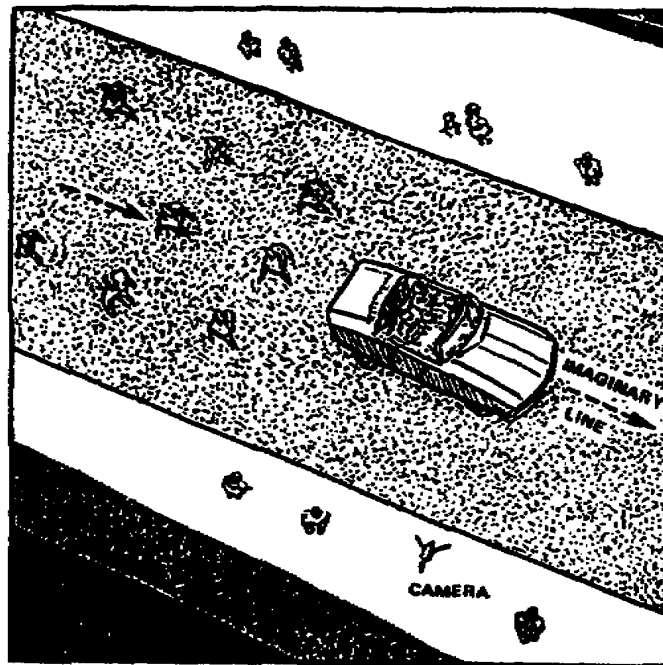


Figure 2-7. The imaginary line

d. Sometimes it is necessary to take up a camera position on the opposite side of the action. And sometimes it is necessary to have your subject change direction. In either case, you must let your audience know that the change is taking place. Some of the ways that you can show or mask changes in screen direction are:

(1) Have your subject actually change direction and show the change on the screen. If you film a sequence showing a sentry walking his post, show him moving in one direction; then pick him up as he is doing an about face and show him moving in the opposite direction.

(2) Gradually film around your subject and include a neutral shot. In the parade scene mentioned previously, if you film from the other side of the street you could have worked around the vehicle. This of course will change screen direction. Before crossing the street you would have to move out in front for a "head-on" shot, or behind for a "tail away" shot, either shot is neutral in direction. Now you can pick up the action from the opposite side of the street. The screen direction is reversed, but the audience knows how it came about. Remember not to change your angle too abruptly or it will cause a shock to the audience. Gradually working around the subject is the key to this technique.

(3) Introduce a scene (cutaway) to divert your audience. The attention of the audience can be diverted from the screen direction of the subject by the use of a cutaway. Again using our parade scene as an example, to conceal the change in screen direction, a cutaway shot of a person watching the parade will serve to divert the audience awareness in the change of screen direction. It is always better to use two or more cutaway scenes in this situation thereby utilizing the audience's inability to remember more than two scenes back.

(4) Use of a prominent object to orient the audience to the movement of your subject. Use a reference point that the audience can recognize. If, for example, our subjects in the parade should be passing toward a prominent statue. One cameraman filmed the scene from one side and another camera filmed the action from the other side. These two scenes edited together would have contrasting screen direction. By seeing the statue in both scenes the audience will accept the fact that the subject is still going in the same direction.

(5) Contrasting screen direction. Abrupt changes in screen direction are sometimes used to create special effects. For example, scene 1 is a sports car speeding from left to right across the screen. Scene 2 is a fast passenger train crossing the screen from right to left. Scene 3 cuts back to the car, and scene 4 shows the train again. The audience begins to realize the car and the train are coming together and a crash is imminent. But, the car's direction must always be from left to right, and the direction of the train must always be from right to left. The whole effect will be lost should the car or train change direction.

(6) Dynamic screen direction is shown as moving bodies either from left to right or right to left and neutral is moving away from or towards the camera. A static direction is that of a body at rest. Remember that even the static body-must show screen direction. Remember also the imaginary line. Crossing improperly will change screen direction and cause confusion. Contrasting screen direction creates suspense and in travel sequences remember your map consciousness. Finally, clean entrances and exits are important when introducing or eliminating different elements, whenever a series of moving shots are filmed against different backgrounds, or when a subject moves from one room to another.

2. You can now establish a few rules to help you maintain screen direction.

a. Remember the direction your subject is moving at the end of a scene. Maintain that direction in the following scene. Use the imaginary line.

b. Show the subject making changes in direction, whenever possible.

c. Visually explain the change to your audience so that they can maintain continuity.

LESSON 2
PRACTICE EXERCISE

1. What is included in an extended sequence that is NOT in the basic sequence?
 - a. Long shot
 - b. Closeup
 - c. Reestablishing shot
 - d. Extreme closeup
2. What is the foundation of good camera technique?
 - a. Shoot everything
 - b. Basic sequence
 - c. Different angles
 - d. Various shooting speeds
3. What is the main goal of a cinematographer?
 - a. Cover scenes
 - b. Expose total film
 - c. Shoot basic sequences
 - d. Convey a complete idea
4. What shot is used to reorient the audience?
 - a. Change in angle
 - b. Extreme closeups
 - c. Cut-ins or cutaway
 - d. Reestablishing shots
5. You want to show a person as powerful and tall. What technique can you use?
 - a. Closeups
 - b. Medium shots
 - c. Shoot from the left
 - d. Shoot from a low angle
6. In the final analysis of a motion picture, what is the main consideration?
 - a. Good exposure
 - b. Complete basic sequence
 - c. Maintaining audience interest
 - d. Total use of cut-ins and cutaways

7. You want to divert the audiences attention. What technique can you use?
 - a. Distractive scenes
 - b. Cut-ins or cutaways
 - c. Extreme long shots
 - d. Extreme closeups
8. What is one purpose of the cutaway?
 - a. Show specific action
 - b. Cover major jumps in action
 - c. Complete a basic sequence
 - d. Maintain screen direction
9. How can you show or mask changes in screen direction?
 - a. Film around your subject
 - b. Shoot an extreme long shot
 - c. Shoot an extreme closeup
 - d. Shoot a reverse angle
10. You want to show an imminent disaster. What filming technique can you use?
 - a. Rapid basic sequence
 - b. A series of cut-ins
 - c. Long shots and closeups
 - d. Contrasting screen direction
11. When should you use contrasting screen direction?
 - a. To show distraction
 - b. To cover jumps in action
 - c. To create suspense
 - d. Confuse the audience

ANSWERS TO PRACTICE EXERCISES

LESSON 1

1. b Learning Event 1, para 4a
2. a Learning Event 1, para 4d
3. d Learning Event 1, para 5d
4. c Learning Event 1, para 3b(4)
5. b Learning Event 2, para 4c
6. b learning Event 2, para 1a(2)

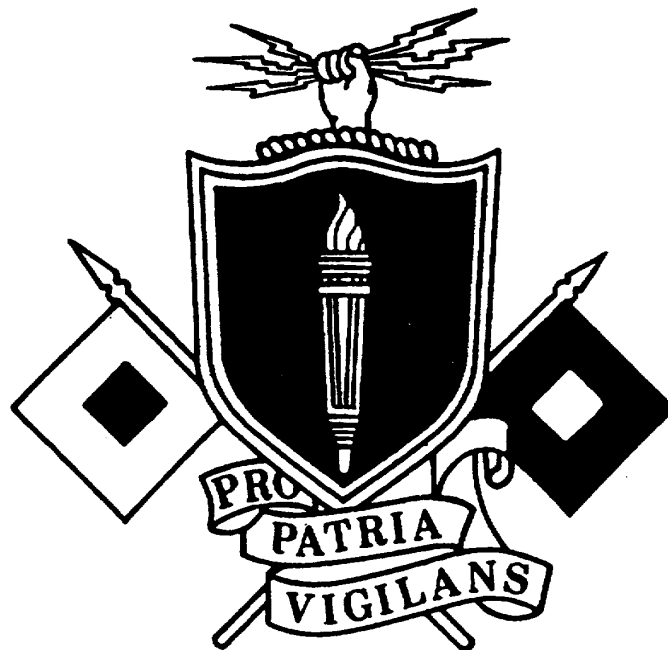
LESSON 2

1. d Learning Event 1, para 4b
2. b Learning Event 1, para 1
3. d Learning Event 1, para 2a
4. d Learning Event 2, para 1a
5. d Learning Event 2, para 2d
6. c Learning Event 2, para 3b
7. b Learning Event 3, para 1
8. b Learning Event 3, para 3a
9. a Learning Event 4, para 1d(2)
10. d Learning Event 4, para 1d(5)
11. c Learning Event 4, para 1d(6)

**SUBCOURSE
SS0536**

**EDITION
B**

DOCUMENTATION CINEMATOGRAPHY



**THE ARMY INSTITUTE FOR PROFESSIONAL DEVELOPMENT
ARMY CORRESPONDENCE COURSE PROGRAM**

**A
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**READINESS /
PROFESSIONALISM!**



**THRU
GROWTH**

US ARMY MOTION PICTURE SPECIALIST
MOS 25P SKILL LEVEL 1 COURSE

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DOCUMENTATION CINEMATOGRAPHY

SUBCOURSE NO. SS 0536-B
(Developmental Date: 19 October 1990)

US Army Signal Center and Fort Gordon
Fort Gordon, Georgia

Four Credit Hours

GENERAL

This Documentation Cinematography subcourse is designed to teach you the knowledge necessary to perform tasks relating to documentation of subjects in both tactical and nontactical situations. It provides information on various filming techniques, team coverage, captions, and slating. This course is presented in three lessons, each lesson corresponding to a terminal objective listed below. The techniques are also applicable to television cameramen.

Lesson 1: FILMING TECHNIQUES

TASK: Describe the various techniques of filming subjects for Army documentation purposes.

CONDITIONS: Given information and diagrams describing various techniques of filming subjects for Army documentation purposes.

STANDARDS: Demonstrate competency of the task skills and knowledge by correctly responding to 80 percent of the multiple-choice test covering filming techniques.

(This objective supports SM Tasks 113-577-5010, Perform Aerial Motion Media Photography; and 113-577-4040, Perform Motion Picture Filming Techniques for Television.)

Lesson 2: PERFORM TEAM COVERAGE

TASK: Describe the various methods of conducting team coverage.

CONDITIONS: Given information and diagrams about team coverage.

STANDARDS: Demonstrate competency of the task skills and knowledge by correctly responding to 80 percent of the multiple-choice test covering team coverage.

(This objective supports SM Task 113-577-2036, Document Military Operations with Motion Media.)

Lesson 3: PREPARE MOTION PICTURE SLATES AND CAPTIONS

TASK: Describe various types of slates and captions.

CONDITIONS: Given information and diagrams about slates and captions.

STANDARDS: Demonstrate competency of the task skills and knowledge by correctly responding to 80 percent of the multiple-choice test covering slates and captions.

(This objective supports SM Task 113-577-5007, Film with Double System Sound.)

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***** IMPORTANT NOTICE *****

THE PASSING SCORE FOR ALL ACCP MATERIAL IS NOW 70%.
PLEASE DISREGARD ALL REFERENCES TO THE 75% REQUIREMENT.

Whenever pronouns or other references denoting gender appear in this document, they are written to refer to either male or female unless otherwise indicated.

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INTRODUCTION TO DOCUMENTATION CINEMATOGRAPHY

These three lessons on documentation cinematography are designed to teach you the methods of using cinematography to document subjects for your unit. Army Visual Information units are becoming more tactically oriented and will require efficient documentation. Most of this camera work will be performed in the field. The techniques in this subcourse are designed for both motion picture and television specialists. The methods are suitable for motion picture and television cameras. Your ability to support the Army with usable motion picture footage may well spell the difference between mission failure and mission accomplishment.

The term "visual information" has replaced "audiovisual" in the Army of excellence.

LESSON 1

FILMING TECHNIQUES

TASK

Describe the various techniques of filming subjects for Army documentation purposes.

CONDITIONS

Given information and diagrams describing various techniques.

STANDARDS

Demonstrate competency of the task skills and knowledge by correctly responding to 80 percent of the multiple-choice test covering filming techniques.

REFERENCES

FM 11-82 and FM 11-40

Learning Event 1:

DESCRIBE DOCUMENTATION PHOTOGRAPHY

1. Army documentation still photography has been in existence since the camera was first invented. All military actions and functions have been documented over the years since the motion picture camera was invented. Documentation of the Army is a continuing function of Visual Information (VI) units in times of peace and war. Motion picture and television are becoming interoperable and the term motion media represents both types of equipment and techniques. Of course, in the Civil War, only still photo cameras were used.

a. Peacetime documentation includes documentation of training, medical research and development, public affairs, and historical subjects. It is used to tell the Army story and to record its missions.

b. Combat documentation (COMDOC) consists of the above and also includes coverage of combat (C), combat support (CS), and combat service support (CSS) unit missions. Visual Information (VI) COMDOC activities support command and Army missions, and US national objectives.

c. VI Combat documentation support teams will be engaged in motion media operations on day one of any battle. In some cases the documentation may start 24 hours before hostilities begin.

2. Combat (tactical) documentation covers the following:

a. Battlefield documentation, which extends from the forward line of troops (FLOT) to Corps, consists of the following types of media coverage:

(1) Military operations from day one of the battle and information of immediate value to commanders and their staffs for use in planning, conducting and evaluating combat, combat support, and combat service support effectiveness.

(2) Friendly positions before, during, and after the battle. This includes providing front and reverse panoramics, camouflage discipline, and fields of fire.

(3) Opposing forces (OPFOR) positions should also be documented, if possible, to detect camouflage and possible avenues of approach.

(4) On the scene close-in terrain analysis documentation for operational traffic supportability planning, barrier location and identification.

(5) Aerial spot imagery which provides motion media of friendly and OPFOR positions to augment intelligence photography.

(6) Military operations to furnish HQDA staff, training developers, and military historians with combat and doctrinal material for evaluation and development of effective counter measures.

(7) Battlefield damage of friendly force equipment to provide operational tacticians and logisticians immediate information to develop effective counter measures.

(8) Battlefield damage to indigenous property for use by Civil Affairs in adjudicating claims.

(9) Battlefield damage of OPFOR equipment to provide operational tacticians and logisticians immediate information on effectiveness of friendly weapons and tactics and to provide information for long-range research and development activities.

(10) Field medical procedures as required by the field medical commander, to furnish visual and audio information of immediate intelligence and operations value.

(11) Initial battle engagements of new weapons and support systems and revised tactics to provide HQDA staff and commanders and their staffs at all levels, and Combat, doctrinal, material and training developers, information for validation of new equipment doctrine.

(12) Visual documentation of captured OPFOR supplies, material, equipment, personnel and documents for commanders and their staffs at all levels for use in planning, conducting and evaluating combat, combat support and combat service support activities. This material may be of

immediate importance to the Intelligence, Psychological Operations (PSYOPs), Military Police and Public Affairs communities and will be ultimately used by military historians.

(13) This coverage is usually conducted in the division area of responsibility.

b. Combat documentation of the Corps consists of, but is not limited to, the following:

(1) Support PSYOPs by providing documentation of prisoners of war (PW); morale, welfare, and condition of clothing and equipment; and the affect of battle on the civil population.

(2) Support military police by providing documentation of PW identification and enclosure construction, PW morale and welfare, adequacy of control procedures, and visual information support for investigation as required.

(3) Document plans and procedures for rear area protection which includes camouflage discipline, fields of fire, and reverse panoramics.

(4) Support military intelligence with documentation of captured material and damaged OPFOR or friendly equipment.

(5) This coverage is usually acquired in the corps area behind division lines.

c. Tactical documentation in Echelons Above Corps (EAC) which include Theater Army, consists of, but is not limited to, the following:

(1) Support PSYOPs operations when required (same as Corps).

(2) Support military police operations when required (same as Corps).

(3) Support military intelligence operations when required (same as Corps).

(4) Support Public Affairs News Media Centers and assists Public Affairs Units when required.

(5) Augment Corps mission requirements.

(6) Cover the deep battle.

(7) Cover the rear battle.

3. Equipment.

a. VI COMDOC support organizations are equipped with state-of-the-art motion picture and videotape, and equipment as required.

b. Organic vehicles, tentage, and other related equipment will be authorized on the VI detachment TOE. VI COMDOC team members are self-sufficient and capable of operating in the field with a 15-day basic load of supply. VI COMDOC support teams are attached to a subordinate unit with a complete basic load. Processing support is provided by Corps or Theater VI units.

Learning Event 2:
DESCRIBE MOTION PICTURE TECHNIQUES

1. Camera techniques for uncontrolled action must be mastered in order to film combat or tactical training documentation. The same basic style applies to both training and actual wartime documentation. All the techniques used to film in peacetime are also used in wartime or tactical conditions. Composition, depth of field, cut-ins, cut aways, screen direction, basic sequence and exposure are still required when shooting COMDOC. The main difference is that the surroundings are hostile and you may not always be able to shoot exactly as you wish due to battlefield situations.

a. Composition is an important part of documentation photography. All the techniques you know concerning framing, arranging, and elements of the scene are required when possible. There are times when this is not possible. Keep in mind the following points on composition.

(1) Four lines of composition include; horizontal, which indicates peace and quiet; vertical that indicates strength and power; diagonal which indicates force and action; and curved which indicates grace and charm (fig 1-1).

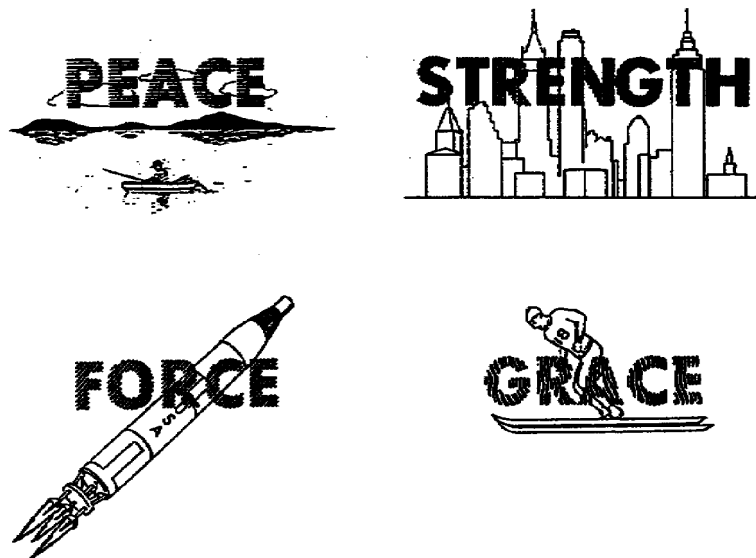


Figure 1-1. Meaning of lines

(2) Depth puts the viewer in the picture. Remember, your pictures or scenes are in two dimensions. You must create the feeling of depth. Depth adds direction and atmosphere to a scene.

(3) Camera angles add to a scene. Shooting from a low angle adds apparent height to a subject. A shot looking down decreases the apparent height of a subject. Shooting from the right or left of a subject can add depth and provides a look at the front and side of the subject.

b. Depth of field is an important factor when filming action. All uncontrolled action requires a complete understanding of depth of field which also includes understanding hyperfocal distance (HFD).

(1) Depth of field is the distance from the nearest to the farthest point in a scene that is in focus. It may or may not include infinity. Hyperfocal distance (HFD) is the distance from the lens to the nearest point in acceptable sharpness when the lens is focused at infinity. If you focus your lens on the HFD, everything from one half the HFD to infinity will be in focus. This gives you the greatest depth of field and always include infinity (fig 1-2).

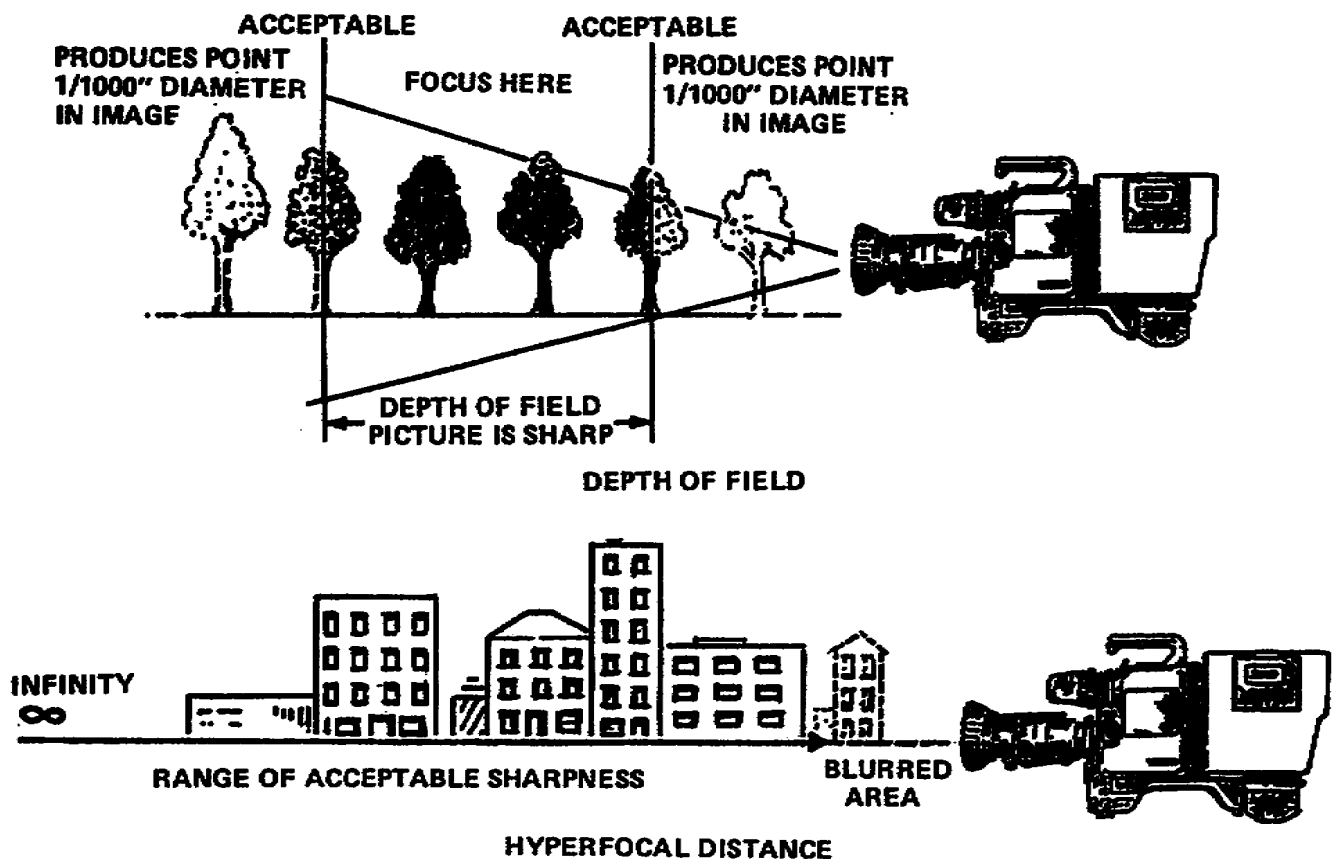


Figure 1-2. Depth of field and hyperfocal distance

(2) The formula for HPD is:

$$H = \frac{F^2 \times CC}{12 \times f}$$

- (a) Where H = Hyperfocal distance in feet
 F = Focal length of lens in inches
 cc = Circle of confusion (1/1000" for 16mm cameras)
 f = Aperture (f/stop)

(b) If you have a 25mm lens on a 16mm camera, the HPD for f/5.6 is 10 feet, 2 inches. Therefore, if you focus your lens on 10 feet, 2 inches, (the HFD), your depth of field will extend from 5 feet, 1 inch (half the HPD) to infinity.

(c) All of these formulas can also be figured in meters and millimeters. Keep in mind that focal lengths, distance and cc must all then be in meters. Do not mix inches and millimeters in the formula.

(3) Using the HFD will allow you to shoot at different distances and not have to take the time to focus. Time and stress can be your worst enemy when filming. Under combat conditions, taking time to focus each shot could cause you to miss a shot or expose yourself to unnecessary danger.

(4) The following examples in Table 1-1 are representative of HFD and depth of field. They can be used for tactical documentation purposes. For more critical purposes use the chart that comes with your lens or the formula for HFD.

DEPTH-OF-FIELD AND HYPERFOCAL DISTANCE FOR 25mm LENS								
HYPERFOCAL DIST.	40'	27'	20'	14'	10'	7'	5'	4'
	f/2	f/2.8	f/4	f/5.6	f/8	f/11	f/16	f/22
LENS FOCUS (FEET)	NEAR FAR	NEAR FAR	NEAR FAR	NEAR FAR	NEAR FAR	NEAR FAR	NEAR FAR	NEAR FAR
50	22' INF.	18' INF.	14' INF.	11' INF.	8' INF.	6' INF.	4' INF.	3' INF.
25	15' 66'	13' 18'	11' INF.	9' INF.	7' INF.	5' INF.	4' INF.	3' INF.
15	11' 24'	10' 31'	8' 56'	7' INF.	6' INF.	5' INF.	3' INF.	3' INF.
10	8' 13'	7' 15'	6' 19'	6' 31'	5' 39'	4' INF.	3' INF.	2' INF.
8	6' 10'	6' 11'	5' 13'	5' 17'	4' 36'	3' INF.	3' INF.	2' INF.
6	5' 7'	5' 7'	4' 8'	4' 10'	3' 14'	3' 29'	2' INF.	2' INF.
5	4' 6'	4' 6'	4' 6'	4' 7'	3' 9'	3' 14'	2' 122'	2' INF.

DEPTH-OF-FIELD AND HYPERFOCAL DISTANCE FOR 50mm LENS								
HYPERFOCAL DIST.	161'	115'	81'	58'	40'	29'	20'	15'
	f/2	f/2.8	f/4	f/5.6	f/8	f/11	f/16	f/22
LENS FOCUS (FEET)	NEAR FAR	NEAR FAR	NEAR FAR	NEAR FAR	NEAR FAR	NEAR FAR	NEAR FAR	NEAR FAR
50	38' 72'	35' 88'	31' 130'	26' 361'	22' INF.	18' INF.	14' INF.	11' INF.
25	21' 29'	20' 31'	18' 36'	17' 43'	15' 64'	13' 157'	11' INF.	9' INF.
15	13' 16'	13' 17'	12' 16'	12' 20'	11' 23'	10' 30'	8' 55'	7' INF.
10	9' 10'	9' 10'	8' 11'	8' 12'	8' 13'	7' 15'	6' 19'	5' 29'
8	7' 8'	7' 8'	7' 8'	7' 9'	6' 10'	6' 11'	5' 13'	5' 17'
7	6' 7'	6' 7'	6' 7'	6' 7'	6' 8'	5' 9'	5' 10'	4' 13'
6	5' 6'	5' 6'	5' 6'	5' 6'	5' 7'	5' 7'	4' 8'	4' 10'

DEPTH-OF-FIELD AND HYPERFOCAL DISTANCE FOR 100mm LENS								
HYPERFOCAL DIST.	646'	461'	323'	231'	162'	117'	81'	58'
	f/2	f/2.8	f/4	f/5.6	f/8	f/11	f/16	f/22
LENS FOCUS (FEET)	NEAR FAR	NEAR FAR	NEAR FAR	NEAR FAR	NEAR FAR	NEAR FAR	NEAR FAR	NEAR FAR
100	86' 118'	82' 127'	76' 144'	70' 176'	62' 260'	54' 651'	44' INF.	37' INF.
50	46' 54'	45' 56'	43' 59'	41' 63'	38' 72'	35' 88'	31' 129'	27' 315'
25	24' 26'	23' 26'	23' 27'	22' 28'	21' 29'	20' 31'	19' 36'	17' 43'
15	14' 15'	14' 15'	14' 15'	14' 16'	13' 16'	13' 17'	12' 18'	12' 20'
10	9' 10'	9' 10'	9' 10'	9' 10'	9' 10'	9' 10'	9' 11'	8' 12'
8	7' 8'	7' 8'	7' 8'	7' 8'	7' 8'	7' 8'	7' 8'	7' 8'
7	6' 7'	6' 7'	6' 7'	6' 7'	6' 7'	6' 7'	6' 7'	6' 8'

Table 1-1. Representative lens charts

c. Cut-ins and cutaways are always required to maintain scene continuity. In many cases they may not be shot during the filming of a specific sequence. You will probably have to shoot them after the main action has terminated. However, you must provide cut-ins and cutaways when filming under any conditions.

(1) A cut-in is a technique for maintaining continuity and for bridging gaps in action. It is usually a closeup or extreme closeup, e.g., a sequence shows two people meeting and shaking hands in a long or medium shot. The handshake is a closeup "cut-in."

(2) A cut-away directs the camera (audience) from the main action to show some parallel action that is taking place at the same time. While filming a troop review, cut away to the crowd watching, or to the reviewing stand for the expression of the general, then back to the troops marching.

d. Screen direction must be maintained whenever possible. In most cases on the battlefield, you will not be able to do this. Remember that the cut-in and cutaway can be used to cover a change in direction. In addition you can use a prominent object to orient the audience to the movement of the subject, and film around the subject to show a change in direction.

e. Basic sequence is the most important technique in filming. A motion picture or television documentation is lost without good basic sequence. The basic sequence consists of long shots (LS), medium shots (MS), closeups (CU), extreme long shots (ELS), and extreme closeups (ECU). All these shots, used in a certain sequence, will make a motion media presentation more understandable to the audience.

(1) The usual arrangement of a basic sequence is the opening shot which is a LS or ELS showing the overall local or subject. This is followed by a MS which narrows down the subject to a specific area or unit. This is followed by a CU that focuses the audience attention to the specific thought you are trying to record. After this normally comes a reestablishing shot (RS) that reminds the audience where they are.

(2) From this point on, the scenes can move from LS, to MS, to CU, back to MS, and back to CU or ECU. Remember to reestablish after a few scenes. This technique may not be possible on the battlefield but you should attempt to use the basic sequence as much as possible.

(3) The basic sequence can be used when documenting nonbattle subjects such as captured equipment, medical procedures, camouflage discipline, enemy prisoners of war (EPW) and other rear area subjects.

f. Exposure remains a critical factor in motion picture documentation. Unless your film is properly exposed, your efforts could be for nothing. Basic exposure and the use of light meters do not change on the battlefield. What does change is the surrounding events. You must understand how to use basic exposure and use it almost without thinking (fig 1-3).

BASIC EXPOSURE GUIDE							
To determine the BASIC EXPOSURE for various black and white and color films use the chart below. The chart is based on an average shutter speed for motion picture camera of 1/50 second (24 fps) and average subjects in bright sunlight (frontlighted).							
DAYLIGHT FILM SPEED (ISO Index)	10	25	50	100	200	400	
ENGLISH SYSTEM f/stops	5.6	8	11	16	22	32	45
TO USE BASIC EXPOSURE:							
1. Determine the BASIC EXPOSURE from the above chart by two simple steps:							
a. Obtain the daylight film speed index for the film you are using							
b. The correct f/stop can be found directly below the number value of the ISO index							
2. This is your basic f/stop setting for average subjects in bright sunlight (frontlighted)							
3. Adjust the BASIC EXPOSURE whenever there is a change in:							
a. Lighting conditions (side or backlighting, open shade, hazy sun, etc.)							
b. Subject brightness (lighter than normal or darker than normal)							

Figure 1-3. Basic exposure guide

(1) Remember that your exposure will be determined by the film speed, now shown as ISO, and lighting conditions. Most battlefields are dull and smokey. Fast films are a must.

(2) Most of your filming will be done at the standard rate of 24 frames per second (FPS). Figure 1-4 is an exposure guide for film with an ISO of 100.

TYPICAL OUTDOOR EXPOSURE GUIDE	
<u>Exposure Index 100</u>	Frames per second = 24 at 1/50th of a second shutter speed
<u>Lighting conditions</u>	<u>f/stop</u>
Bright sun	f/22
Hazy sun	f/16
Cloudy bright	f/11
Cloudy or open shade	f/8
Deep shade	f/5.6
*These conditions based on average subject with front lighting	
For lighter-than-average subjects: close down	1/2 stop
For darker-than-average subjects: open up	1/2 stop
For side lighting: open up	1 stop
For back lighting, subject fills frame-open up	2 stops

Figure 1-4. Outdoor exposure guide

2. The use of filming techniques must be used whenever possible both in training situations and on the battlefield. Some of the techniques will be impossible to use when you are under fire. But you can provide clear, sharp, well-exposed film for your commander if you follow the principles of motion picture filming techniques you use every day.

3. When filming a subject for intelligence, or other than public affairs purposes, place a scale alongside the subject to show size. If it is a radio, weapon, vehicle or other relatively small object, use a ruler or other form of scale. If the subject is large, such as a building, place a vehicle or other object of known size alongside the building. This will act as a scale.

a. All buildings should be filmed to show all sides, three-quarter views, entrances, windows, any special feature, and should always have a scale of some type showing.

b. Equipment must also show all four sides plus three-quarter views along with CU of any handles, knobs, nameplates, or special features (cut-ins or cutaways).

c. As an example, you are documenting a captured building containing weapons. The following set of shots should be taken.

(1) A LS showing the location of the building to include surrounding areas.

(2) A MS showing the outside of the building. This shot should have a scale of some sort. Note that the scale must be alongside the building so that its size can be measured.

(3) More MS of all sides of the building.

(4) A series of CU showing doors, windows, nameplates, address plates, and other identifying features. Each CU should be preceded by a MS or LS showing its relation to the building. Again a scale should be in the scene.

(5) After the outside of the building is documented, you must get shots inside showing what the building contains.

(6) If weapons are stored in cases, get a LS of the cases in relation to the building; e.g., are the cases in only one corner, or is the building full of cases?

(7) Next a MS showing one or two cases of weapons. Try to show any identifying marks on the cases.

(8) This is followed by a CU or ECU of the identifying marks and special features of the case.

(9) Next comes a RS showing the pile of cases.

(10) Now a MS showing a case being opened. Make sure that the case with its markings visible is the same case opened in this scene.

(11) Using the same pattern, show the weapons, special features and markings with CU and ECU shots. Again, use a scale for these shots. Have someone operate (dry fire) the weapon (if possible) while you film.

(12) Finally, back out of the room with RS and MS until you finish with a LS of the overall building and area.

4. Documentation of subjects must follow the basic techniques of filming but must include certain scenes that may not make for a "good" movie. When documenting you are mainly interested in showing the commander what happened and why it happened. If you have good exposure and camera handling techniques along with following the principle of basic sequence, you should obtain good usable documentation footage.

Learning Event 3:
FILMING FOR TELEVISION

1. A majority of all film documentation will be used on television. This includes but is not limited to field training and evaluation, combat actualities, medical, psychological operations, military police, public construction affairs events, and other military operations in peacetime and during hostilities.

2. There are special camera techniques which are used when filming for television presentation. These techniques should be followed when practical. You may not be able to follow them under combat conditions.

a. Sets and backgrounds.

(1) Wherever possible, avoid pure whites and pure blacks in your scene. TV receivers are not capable of reproducing extreme contrasts, be they color or black and white. Stay away from high and low key in the same scene.

(2) The maximum contrast ratio for TV is 20 to 1. Try to avoid broad areas of the same tonal value. Bold patterns are better than intricate detail. Avoid cutting back and forth between angles where the background is alternately light and dark. Finally, avoid large areas with bright color.

b. Lighting.

(1) The ratio of key-to-fill light should be a maximum of 2 to 1 for color and 3 to 1 for black and white. A somewhat high key with strong backlighting gives the best results. The general intensity of illumination from scene to scene should remain relatively constant. Under tactical conditions, lights and reflections cannot, nor should they, be used. The only exception would be indoors where the light cannot be seen outside. For example, if a key light is 400 foot candles, a back light should be 200 foot candles for color, or about 150 for black and white.

(2) Television has a built-in method of adding contrast to all films shown. For this reason, it is necessary to hold the contrast down when making films for TV. Although films can be printed with less contrast, it is best to film with less contrast from the beginning. Remember, the maximum contrast that TV is capable of presenting is 20 to 1. Most stations want to keep the ratio below 10 to 1. Basically, contrast ratio means that the lightest part of a picture is 30 times brighter than the darkest part, or 10 times brighter in a 10 to 1 ratio.

c. Color temperature and colored light. As with filming for theater projection, avoid mixing light sources within one scene. This is particularly true when filming in color. Mixing light sources of different color temperatures will ruin the color quality and make the film unusable. As a documentation cinematographer, you want to keep the subject as close to its natural color as possible.

d. Camera techniques.

(1) Do not use extreme long shots (ELS) when filming for TV. This is true if any detail in the shot shows. Most TV receivers are not capable of presenting detail in an ELS. For this same reason, keep long shots (LS) to a minimum. Use more medium shots (MS) and closeups (CU) than in normal filming.

(2) Composition. When filming for TV, it is necessary to frame less tightly. You must leave more room at the edge of your frame than you normally would. The first problem is curvature of the TV tube. Also, the tube aperture, that is, the frame that supports the picture tube, cuts off a portion of the edges of the film area. This is called television image cut-off. In other words, what you shoot is not what you will see on the TV screen. For this reason, we use what is known as the safe action area.

e. Safe action area.

(1) Safe action area is shown in figure 1-5. The Arriflex camera has a safe action frame built into the viewfinder. Cameras that do not have this frame built in must be used with this frame in mind. When filming for TV without a special frame in your viewfinder, leave 10 percent around the frame to allow for TV image cut-off. This is especially true when filming CUs.

(2) The safe title area (used when filming titles for TV) is even smaller. You must leave 15 percent around the frame when filming titles for TV.

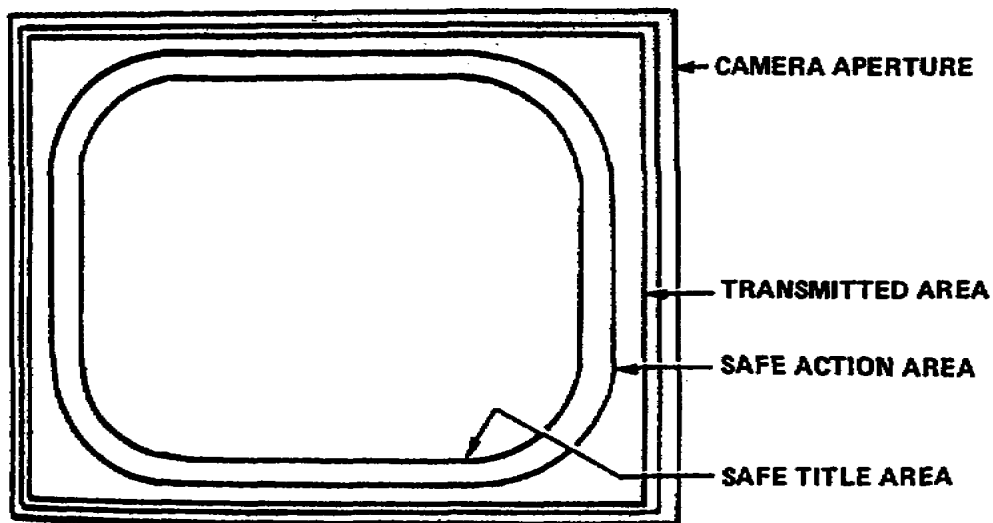


Figure 1-5. Television film apertures and safe areas

f. Camera movement. The same principles apply to moving your camera for TV and theater projection. The main thing to remember is that all dolly

and zoom shots (filming with a varifocal length lens) must be extremely smooth and rather slow when filming for TV.

g. Handholding.

(1) Handholding a camera for television is no different than for any other type of filming. The camera must be rock steady. It is not easy to do. Any type of support that can be used to help in supporting your camera should be used. The body brace or shoulder pod is probably your best choice when a tripod cannot be used.

(2) Even when using a body brace or shoulder pod, you should use your body as a steady support. Make sure the weight of the camera is distributed evenly on both legs. Keep your feet apart and do not twist your body without moving your feet.

(3) When you are handholding a camera, many things must be considered -- proper exposure, framing, camera steadiness, and the weight of the camera. For these reasons you may forget about safe action area. Whenever filming for television, you must frame within the safe action area. If not, your picture will spill out and be lost on the sides of the TV screen.

Learning Event 4:
AERIAL TECHNIQUES

1. Motion picture aerial documentation photography is accomplished by Army cameramen normally flying in helicopters. Some work can be done in fixed wing aircraft. Any documentation of ground subjects is best accomplished in a helicopter. Most Army fixed wing aircraft are "low wing" and therefore unsuitable for filming ground subjects. Almost all Air Force transport aircraft are suitable due to the large doors which give an unhampered view of the ground.

2. Army aerial photography is not a substitute for Air Force high altitude reconnaissance or Army tactical and intelligence imaging such as that done by the OV-10 Mohawk aircraft. Visual information documentation from the air is interested primarily in spot imagery of selected targets from very low altitudes.

3. Aerial cinematography.

a. Pilot authority and responsibility. The pilot is the aircraft commander. He is responsible for the mission and crew. The success of the mission is of prime importance, but in no instance will the safety of the aircraft or crew be jeopardized for the sake of a film. The pilot is responsible for the issuance of instructions governing all phases of flight operation. In addition to his regular function, the pilot performs the necessary mission preparation as follows:

(1) Attends general briefings.

(2) Coordinates with other crewmembers on route, charts, targets, and items pertinent to individual crew procedures. He also supervises the completion of required forms.

(3) Attends specialized briefings for the mission.

(4) Compiles latest information relative to flight and briefs the crew.

(5) Conducts a specialized crew and emergency procedures briefings.

b. Cameraman's responsibility. As an aerial cameraman, your prime responsibility is obtaining the mission photography, you are nevertheless a member of an aircraft crew. As a crewmember, you must be familiar with crew coordination, bailout procedures, crew safety procedures, and, if the need should arise, survival procedures. The specifics of these procedures will be given to you by the aircraft commander.

(1) Remember, the pilot is the aircraft commander. He is responsible for the aircraft. However, you are responsible for obtaining the photographs. In order to accomplish this, you must let the pilot know exactly what you need. This includes, but is not limited to, the following:

(a) Altitude desired.

(b) Direction of approach.

(c) Direction of circling target.

(d) Attitude of aircraft.

(2) Keep in mind that there may be operational reasons that the pilot cannot comply with your request. Again, remember that the pilot is the commander of the aircraft and crew.

c. Safety. While flying in an aircraft, there are a number of things that you must be aware of.

(1) Keep all film, filters, and other equipment not being used in your pocket or other such place where it will not fly around in the aircraft.

(2) Do not set your camera down at any time. Keep control of it or it may fall out of the aircraft or hit some part, or control, of the aircraft causing damage to the aircraft.

(3) Do not carry any unnecessary articles of clothing or possessions. They are just more items you will have to control.

(4) Do not smoke while flying. A burning cigarette in your lap or ashes in your camera could terminate the mission.

4. Camera techniques and controls.

a. In aerial motion picture photography, three things that differ from ground photography are; choice of focal length, frames per second (fps), and shutter opening (with adjustable shutter). To some extent, the lens size is governed by aircraft altitude and the size of the image you want. The normal lens is usually suitable.

b. When shooting from a moving platform, you should use a faster shutter speed. Usually 32 to 64 fps is best. The lower the altitude or the longer the focal length lens used, the faster the shutter speed selected. Also, the faster the platform is moving, the faster the shutter speed should be. If you are filming another aircraft (air-to-air filming), or are on the ground filming an aircraft (ground-to-air filming), the normal 24 fps can be used. This does not mean that faster fps cannot be used; only that normally it is not necessary.

c. A problem you will encounter while flying in any aircraft is vibration. If you have ever filmed scenes from a moving vehicle, such as an automobile or train, you realize that vibrational motion exists. All aircraft, especially helicopters, have comparable vibrations. One of the basic rules for aerial photography is: "Make sure that the camera is well insulated from aircraft vibration."

d. When using small handheld cameras, hold them in such a way that your body insulates the camera from the aircraft. Do not allow the camera to touch the aircraft. This will transmit any vibrations to the camera.

e. It is important to remember that when shooting from a moving platform, i.e., airplane or helicopter, that the camera is moving as fast as the platform. As a result, you must not use a small-angle shutter opening if your camera has an adjustable shutter. The degree of shutter opening (DSO) must be at least 100° or more. A small DSO will give you choppy footage. This is due to the fact that the shutter is closed most of the time. As a result, the camera has moved (in relation to the ground) a great distance. If you keep your DSO greater than 100°, there will be no problem.

5. Exposure.

a. Exposure control is no different than when shooting on the ground. The use of an exposure meter is suggested. A word of caution: DO NOT take a reading that includes the sky. This is a problem encountered by all cameramen when first shooting from the air. Make sure your meter is aimed toward the ground. You may also use a gray card. Make sure the sunlight (if any) is falling on the card.

b. When setting your exposure, make sure you compensate for any change in DSO, shutter speed, and filter. The cost of sending a cameraman on an aerial mission is high. You must plan and adjust your camera with great care.

6. Lenses.

a. In most cases, you will be using a normal lens. On occasion it may be required that you use a long focal length lens. If this is necessary, you must take certain precautions. As you know, it is more difficult to hold a long lens steady. Add this to the fact that an aerial platform is very unstable and you have the makings of the most unsteady and shaky footage you will ever see.

b. If it becomes necessary to use a long focal length lens, then the following steps should be taken to keep the footage as steady as possible.

(1) Use a fast shutter speed (64 fps or faster).

(2) Ask the pilot to try and maintain a slow and vibrationless attitude.

(3) Hold the camera as steady as possible and touch the aircraft with as few points of your body as possible. Focus should always be set on infinity. To maintain this focus, tape the lens setting so it does not move.

7. Filters for black and white film.

a. One of the biggest problems the aerial cameraman has to contend with is haze. Aerial haze is the blue of the sky resulting from light reflected off the moisture in the air. At short distances, the amount of haze is too small to have any effect on film; at long distances (which most aerial filming is), the haze may be too heavy to photograph through.

b. Whenever shooting aerials, always use a filter. The heavier the haze or the higher the altitude, the darker the filter must be. Up to 1000 feet (304.7m) use a No. 8 filter (K-2, yellow). From 1000 feet (304.7m) up to 5000 feet (1523m) use a No. 15 filter (G, deep yellow). Above 5000 feet (1523m) use a No. 25 filter (A, red). In some cases, it may be necessary to use deeper filters than those recommended here. For the highest penetration of haze, the use of the infrared film and an infrared filter is recommended.

c. An important point to remember is that not all haze can be penetrated. Haze caused by fog, dust, smoke, or other solid (opaque) particles, cannot be penetrated by any combination of film and filter.

8. Filters for color film. When filming in color, it is not possible to use the same filters to cut through haze as recommended for black and white film. We can, however, use ultraviolet and polarized filters.

a. Aerial haze affects color film to an even greater degree than it does black and white film. In addition to fuzzy images, the film takes on a blue cast. Aerial filters, such as the 1A or UV 15, are used when daylight conditions cause an excess of blue to register in color film. Scenes filmed on hazy or cloudy days require the use of a haze filter. It is best to use this type of filter for all aerial shooting in color.

b. Polarized neutral gray filters can also be used with color films. This filter will darken a blue sky without affecting the color balance of the film. This filter is normally used to subdue or eliminate oblique reflections and glare from nonmetallic surfaces, thus increasing color saturation. Nevertheless, it is also used to reduce or partially clear distant haze. Remember that the polarizing filter requires a 4X (two-stop) increase in exposure.

9. Conversion filters.

a. Conversion filters are required whenever an emulsion balanced for tungsten illumination is used in daylight or an emulsion balanced for daylight is used with tungsten illumination.

b. Inferior color will result if daylight film is used with tungsten lighting, even with the recommended filter.

c. If top color balance is desired, select the film recommended for the light source and avoid the use of filters. If one film must be selected for both tungsten and daylight, use a tungsten film to photograph the scenes illuminated under tungsten light. Add a No. 85B filter when filming under daylight illumination.

10. Aerial color films.

a. There are numerous films that can be used for filming aerial footage. The film most commonly used in the military are listed in Table 1-2. Daylight color films are balanced at 5500°K.

FILM	D/T	BALANCED FOR	FILTER FOR DAYLIGHT
EKTACHROME COMMERCIAL 7252*	16/25	3200°K	85
EKTACHROME EF 7242*	80/125	3200°K	85B
EKTACHROME EF 7241*	160/	Daylight**	None

* Reversal film.

** 5500°-6000°K. (Daylight is the combination of sunlight, 5500°K, and skylight, which usually exceeds 6000°K.)

Table 1-2. Color balance of films

b. If tungsten film must be used, Ektachrome EF 7242 is a good selection. When used with a Kodak Wratten No. 85B filter, it gives excellent results under daylight conditions.

11. Types of aerial shots.

a. Horizontals. A horizontal shot is taken of such things as the side of a mountain, dam, bridge, or tall building.. It is best not to shoot at right angles to the line of flight. The apparently greater rate of travel will cause the subject to flash across the screen so rapidly that the audience will not clearly see the object filmed. This is similar to shooting fast-moving objects in ground photography (fig 1-6a). A shooting angle more in line with the line of flight will minimize this effect. Where possible, shoot at a 45-degree angle from the line of flight. Either forward or toward the rear of the aircraft is suitable. This will minimize choppy or jumpy film.

b. Verticals. Vertical motion pictures are almost never taken. However, if it is necessary to take a vertical photograph, the camera must be pointed straight down (fig 1-6b).

c. Obliques. There are two types of oblique photographs, low and high. Low obliques do not show the horizon. They are usually about 50 degrees from the vertical (fig 1-6c). High obliques show the horizon and are about 60 degrees from the vertical (fig 1-6d). These numbers are approximate and should not be considered binding. The best angle for motion pictures is a low oblique with the camera tilted about 45 degrees from the vertical.

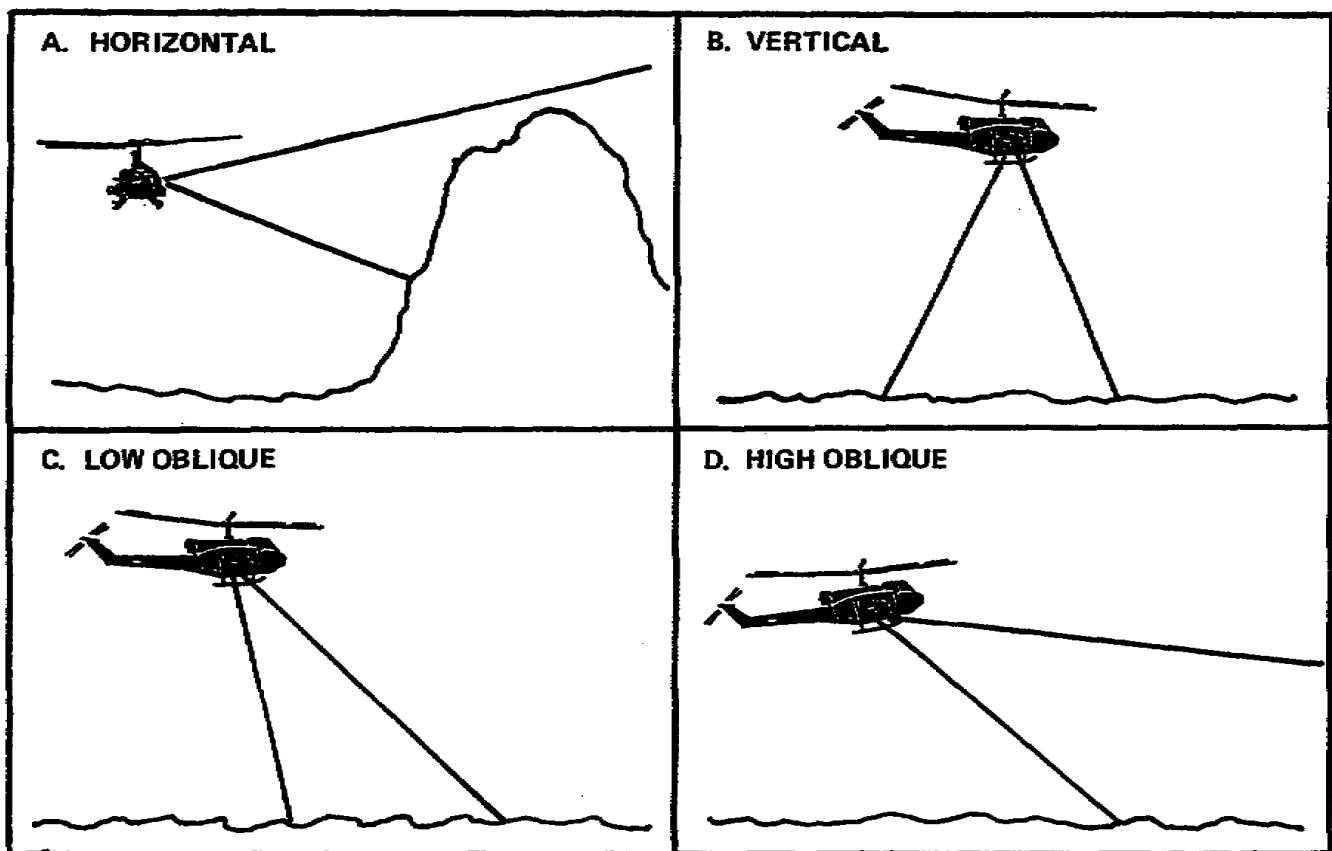


Figure 1-6. Aerial angles

d. Light direction. Cross lighting is the best type of lighting for aerial work. Shadows falling to the side of objects give contrast, depth, and visual measurement to the scene. A combination of middle oblique angle, 45° line-of-flight angle, and side or cross lighting will result in the best type of motion picture aerial scene coverage.

12. Framing.

a. The main subject should be centered in the frame. On occasions, a small portion of the aircraft (wing tip, strut, skid, etc) will add depth to the scene. However, this technique must not be overdone. Remember that the lens should remain focused on infinity.

b. When using a camera that does not have through-the-lens viewing, you must be careful not to have parts of the plane in the lens viewing area. Watch out for window edges, air ports, and curved glass. When shooting through glass windows and doors (plexiglass), keep the lens as close to the glass as possible to minimize distortion. Whenever possible, open the window or door before filming.

13. Using basic sequences.

a. Just as in ground photography, so also in aerial photography it the basic sequence used. The long shot (LS), medium shot (MS), and closeup (CU) are used to show the target. Your establishing shot can be made as you approach the target. LS, MS, and CU may be made at various altitudes as the aircraft circles the target.

b. As an example, the LS can be made at 1500 feet (457m), and the MS at 1000 feet (304.7m), and the CU at 500 feet (152.3m). Altitudes will, of course, vary depending on the situation. Shooting as the aircraft circles the target will furnish the requisite changes of angles.

c. When shooting a target, especially from a low altitude, keep in mind the direction of the sun. Avoid having the sun behind the target. This will avoid the flare caused by the sun shining directly into the lens.

Learning Event 5: SHOOTING UNDER STRESS

1. Photography is photography under any circumstances. The only thing that changes is the location and conditions under which you must film.

a. When you are given a script and told to shoot a story, you are usually not rushed. However, when you are shooting a COMDOC subject in wartime or peacetime, the action is fast and furious. There usually is no time for advance planning. All your thinking must be done on the run and immediately. You cannot ask the subject to "hold it" while you reshoot the scene. You get one chance and one chance only. This type of situation separates the amateur from the professional.

b. If you have mastered the technique of proper exposure, focus, and framing, then you can do these almost automatically. This leaves you free to think about the next shot. You must plan ahead. You must ask yourself, where will the action move to from here? Good cameramen seem to have a sixth sense about these things. Have you heard the term "being at the right place at the right time"? It always seems that the great cameramen are there and at the right time.

c. In order to overcome the stress of shooting under a time limit, and the violence at the battlefield, it is necessary to be a master of the basics of cinematography. Proper exposure, sharp focus, and correct framing are the basics. If these can be done automatically, then you are free to concentrate on the action at hand. The first time you have to stop to think about exposure, focus, or framing, is the time you will miss the most important action.

d. If you must think about what your f/stop should be for a certain shot, or what lens to use, then you cannot concentrate on your filming. A good cameraman is so proficient that he does the mechanical portions of his job automatically. This leaves him free to be both creative and news conscious.

2. Holding the camera.

a. We have stressed that you should use a tripod whenever possible in motion picture photography. However, if you are shooting a sequence from halfway up the mast of a radio antenna, or from over the railing of a bridge, a tripod may be a handicap rather than a help. Also, working on the ground among crowds at a parade might require you to handhold the camera. There is also a possibility that on some occasion, when you could use a tripod, you may not have one with you. You can probably imagine many more instances when you will have to hold the camera to cover the action and you should be able to do it well. To become proficient, you should practice.

b. The technique for COMDOC handheld operation is basically the same for all cameras. Size and weight are the main differences between them. Generally, sound equipment is too heavy for handheld operation. This is not to say that sound cameras cannot ever be used in this manner because there is always an exception to the rule. If it means getting or not getting the shot, you will probably find some way to support even the heaviest of cameras. Our discussion here, however, applies only to practical use of handheld cameras.

c. Success or failure in handheld camera operation depends primarily on the proper stance.

(1) First, you must stand with your feet about 18 inches (45.72 cm) apart for good support and to help prevent body sway.

(2) Next, hold the camera with both hands and use any aids, such as leather straps, etc, that the manufacturer may provide on the camera. Many cameras are made to rest naturally against your forehead as you look through the viewfinder, thus providing another point of support.

(3) Finally, pull in your elbows and, if you can, press them firmly against your sides while filming the scene.

d. Practice the proper stance while holding a camera and see just how steady you can be. It will also help if you can hold your breath while shooting -- provided the scene isn't too long. This eliminates the rise and fall of your chest. And when you assume the stance, try to relax. Being tense can actually cause your muscles to jerk and vibrate, producing the very movement you are trying to eliminate.

e. Another technique vital to good handheld scenes is the ability to shoot a smooth pan or follow shot. The method is to hold the camera the same way you would for any other handheld shot, except that in this case you face your body toward the direction in which the action will be going as you finish the scene. Then, keep your feet in place but turn your body towards the subject. This is much like winding a spring but you wind your body instead. Start filming the subject as it approaches and turn your body as the pan is taking place. As the object is passing by, your body gradually unwinds and you are in a comfortable position as the scene ends.

f. A good point to remember in handholding any camera is to take advantage of any stationary support you can find available. A telephone pole, tree, truck hood, or even another person will assist in steadying your camera. The main thing to remember is that whenever possible, use a tripod. However, when this is impossible, then use anything you can to support your camera. It is very difficult to handhold a camera properly. Any help you can get in the way of a support should be used.

3. Body braces. There are a number of items available to assist you in handholding a camera. These supports attach to the tripod socket of a camera. Most have a half circle brace that fits over your shoulder. Another extension rests on the abdomen. This distributes the weight of the camera over a large part of your body. Another type is similar to a rifle stock with an open half circle that fits around the shoulder. The main purpose of the brace is to relieve your arms of the weight of the camera, making it easier to handhold a camera.

4. Shoulder pods. Almost all newer motion picture and television cameras have shoulder pods and are designed to be placed on the shoulder. This makes carrying and holding very simple. The camera is placed on your shoulder and one hand supports the camera body or lens enclosure. The other hand is free to focus or make other adjustments.

a. You must be aware of dangerous terrain or equipment at your filming location. You could fall over obstacles in your path, or back into a moving truck, tank, or other machinery. All cinematographers must always be aware of their location in relation to the surroundings.

5. Shooting under stress is an everyday occurrence for most cinematographers. It can be overcome if you understand what causes it. For the most part, it is the fear of not getting the shot. Everyone is scared on the battlefield. If you are a master of your craft, you will have one less thing to be scared of. Remember that shooting under tactical conditions still requires all the same camera techniques used when shooting a production in the studio.

LESSON 1
PRACTICE EXERCISE

1. What must you NOT do while performing aerial documentation?
 - a. Hold your camera tightly
 - b. Stand up in the aircraft
 - c. Smoke
 - d. Talk
2. You are documenting a subject from a helicopter. What can you do to add depth to the scene?
 - a. Use a wide-angle lens
 - b. Use a telephoto lens
 - c. Show part of the aircraft
 - d. Shoot from various altitudes
3. You are filming an aerial mission. What frames-per-second should you use?
 - a. 8
 - b. 16
 - c. 24
 - d. 32
4. What must be included in a documentation film used for intelligence purposes?
 - a. Dated slate
 - b. Exposure
 - c. A scale
 - d. Name of intelligence unit
5. You are documenting a subject that you know will be on television. What is the maximum contrast ratio you should use in the scenes?
 - a. 2 to 1
 - b. 5 to 1
 - c. 10 to 1
 - d. 20 to 1

LESSON 2

PERFORM TEAM COVERAGE

TASK

Describe the various methods of conducting team coverage.

CONDITIONS

Given information and diagrams about team coverage.

STANDARDS

Demonstrate competency of the task skills and knowledge by correctly responding to 80 percent of the multiple-choice test covering team coverage.

REFERENCES

FM 11-40

Learning Event 1: TYPES OF COVERAGE

1. Coverage of some types of missions requires more than one cameramen. However, the fact that you have a group of cameramen on a mission does not guarantee that the mission will be covered properly. There are many reasons for missing footage even when more than one cameraman is working. Winding the camera, refocusing, setting the f/stop, changing the camera viewpoint, loading or unloading, and any number of unpredictable events could keep you from filming all the action. Team coverage is two or more cooperating cameramen in a coordinated effort to cover one mission. It is important that each cameraman cooperate. If not, they may both be loading cameras at the same time. When this happens, footage is lost.

2. Types of coverage.

a. Semipermanent. In this type of coverage, you will have one or more fixed and one or more mobile cameras. This type of coverage is suitable for missions where most of the action will pass or occur at a known point. A parade is one example. The fixed camera(s) is placed in such a manner that the main action can be observed, Long shots (LS) and medium shots (MS), and in some cases closeups (CU), can be obtained by use of different focal length lenses or a varifocal lens. One or more mobile cameras are used for the cut-ins (CI) and cutaways (CA). The mobile cameras can also provide the varying angles necessary for an interesting film.

b. Leapfrog. This method uses two cameramen alternating in getting into position. While one camera is running, the other is moving into position. When the second camera starts running, the first stops and the cameraman "leapfrogs" the second cameraman and gets into position. This type of coverage is useful when covering "key" action. An example would be a VIP tour where each stop must be covered.

c. Constant shooting. Constant shooting coverage is a technique used when the entire action from start to finish must be covered. To accomplish this, you must have two cameras and two cameramen. The first cameraman starts shooting just before the action starts and continues shooting until he runs out of film. Approximately one minute before the first cameraman runs out of film, the second cameraman starts filming the action with the second camera. He continues filming until he runs out of film. In the meantime, the first cameraman has reloaded his camera and again starts filming just before the second camera runs out of film. This procedure is followed until the required action is completely filmed. An example of this would be a very important person (VIP) making a speech that lasts 40 minutes and the maximum film load for your cameras are 400 feet (121.02m). To film the entire speech without any breaks, each cameraman would reload his camera one time. On this type of coverage an additional cameraman is normally used to shoot cut-ins and cut-aways of crowd reaction which the editor can use to make the film more interesting.

d. Sectional. Each cameraman is assigned a specific part of an action as his mission. An example would be a race. One cameraman covers the start, one the turns, and one the pits. More than one race or event can be covered in this manner.

3. Coordination of effort.

a. The first step in coordination is proper preparation. All members of a team must be aware of what the mission is and what kind and method of coverage is desired.

b. Coordination is necessary to obtain proper overlap, avoid duplication of effort, keep out of each other's field of view, obtain sufficient variety of scenes and angles, and most important, maintain screen direction.

4. Aggressive methods.

a. When we say, use aggressive methods to obtain coverage, we don't mean swing a heavy bat and clear a path to your assignment. What we mean is that you cannot be timid. You may have to film a subject in the rain. You should do all you can to keep your camera dry but it does not mean to not get your feet wet. Cameramen by the very nature of their work must get wet, cold, come close to heat stroke and get into some very scary situations.

b. We do not say that you should risk your life every time you go out on a mission. Cameramen should take advantage of every safety device and precaution that is available. However, you may have to elbow your way past a group of 6-foot-4, 250-pound cameramen that are trying to get the

same picture you are. A cameraman has to have a certain amount of aggressiveness in order to accomplish the mission. This does not mean that you have to be obnoxious.

c. You may be filming a sequence that calls for the subject to do a task that he does not feel like doing at that time. In order to control the action according to your shooting outline, you are going to have to convince that person that the task must be done. Again you must be aggressive but not obnoxious.

Learning Event 2: TEAM FILMING

1. Before a team of cameramen can go out and film an FTX, or the real thing, they must have a plan for shooting. Human nature being what it is, every team member wants to get that great shot. Team coverage does not work this way. The very title "team coverage" gives you an idea of what is required. Let's set up a scenario for team coverage.

a. The mission calls for four cameramen to cover a brigade in the attack during an FTX. The attack will include artillery, tanks, and mechanized infantry.

b. Your team leader assigns one person to initially cover the artillery, one the tanks, and two the infantry. After the battle starts, each person will have another subject to cover.

(1) The person covering the artillery will want to get shots of the movement, sitting, laying of the guns, preparing ammunition, and the fire direction center, as well as the actual firing of the guns. After this is covered, and there are no new artillery subjects to cover, this cameraman can be sent to cover other rear area action. This could be medical, mess, supply, repair, maintenance, or other Combat Support (CS) and Combat Service Support (CSS) activities.

(2) The person covering the tank action would obtain the same type of scenes of the tanks as the artillery cameraman. This includes but is not limited to; uploading equipment, assembly, moving out, convoy, moving into positions, actual firing, and maneuver. As time and the situation permits, this cameraman can then cover resupply, medical, maintenance, and various other functions.

(3) The cameramen with the infantry will cover the same types of scenes as above, plus tactical operations center (TOC) activities. After the initial coverage is complete, rear area coverage may be covered.

c. At this point the team members can be moved to any location that requires coverage. The main thing to remember is that the team should not duplicate its coverage unless it is required for specific coverage.

The team leader will provide you with guidance to reassemble at some point during the battle to adjust the coverage as necessary.

2. As a team member you must plan your shooting so as not to miss an important event and also not to saturate one subject with coverage.

3. Planning coverage. There is a saying that two minutes after the battle begins, all the plans can be thrown away and new ones made. This may be true, however, if there is no plan to begin with, how can you change it? Planning is an important requirement to visual information coverage. When you are working as a team, it is even more important.

a. Your team chief will provide the overall plan of action; location, time to report, if you will be in a separate location from each other, or together with a specific unit. Planning and coordination is more important if the team will remain with one unit. In this case you do not want to "trip" over each other getting the coverage.

b. When a small unit or area is to be filmed, each cameraman must have an assigned spot to work from. If you are assigned to film one squad or fire team, then stay with that unit and do not leave it. Your team chief may want to move you at a later time and he must be able to find you.

c. Communications are a problem on the battlefield. You will most likely not have any radio communications with the team leader. You will not be able to use the unit radio as it will be needed for tactical purposes. If you are in a rear area, and the battle is not around you, a radio or telephone may be available. Your team chief or detachment commander will make arrangements for communications when required.

4. Part of all planning is equipment. When you go into a tactical situation, you must be completely equipped both to survive and to obtain footage.

a. As a cameraman and as part of a team, you must arrive at the unit you are covering with everything you need. This includes:

(1) Camera equipment, film, charged batteries, filters, and spares (the spares being batteries, filters and film).

(2) You must also make sure you have your complete TA 50 equipment. You cannot expect to have the unit you are covering supply you with a helmet, canteen or weapon. You must make sure you have all the things necessary to survive.

(3) Visual information doctrine calls for all cinematographers to also carry a basic load into a tactical situation. This includes: rations, ammunition, and fuel for vehicles. If you will be assigned to a unit for an extended period of time, the unit you are attached to will provide resupply for food, water, and fuel.

(4) Make sure your equipment, photographic and military, is properly maintained. Keep your camera clean and all batteries fully charged at all times. Do not wait until "tomorrow" to perform maintenance.

b. Never arrive at a unit asking for help or support. You must be self-sufficient when you arrive. No well-trained unit will accept you into their "territory" if you appear untrained, ill-equipped, or out of place. You must appear professional when arriving at a unit. Training and practice will provide this professionalism. Remember, you are a soldier first and a cameraman second.

5. Proper preparation, coordination of effort, and good maintenance of your equipment are musts for any cameraman. When team coverage is concerned, it is even more important.

LESSON 2
PRACTICE EXERCISE

1. You are filming a parade, what type of coverage is recommended?
 - a. Close-up and cutaways
 - b. Cut-ins and cutaway
 - c. Semipermanent coverage
 - d. Follow the main action
2. When using semipermanent coverage, how can a long, medium, and close-up shot be obtained?
 - a. By using a mobile camera
 - b. By using a field camera
 - c. By refocusing the camera
 - d. By use of different focal length lenses
3. What type of coverage is best for shooting key action?
 - a. Sectional
 - b. Constant shoot
 - c. Leapfrogging
 - d. Aggressive methods
4. You are using two motion picture cameras. How many times do you have to reload each camera to film a 40-minute speech with a 400-foot film magazine?
 - a. Once
 - b. Two times
 - c. Three times
 - d. One magazine is enough

LESSON 3
PREPARE MOTION PICTURE SLATES AND CAPTIONS

TASK

Describe various types of slates and captions.

CONDITIONS

Given information and diagrams about slates and captions.

STANDARDS

Demonstrate competency of the task skills and knowledge by correctly responding to 80 percent of the multiple-choice test covering slates and captions.

REFERENCES

AR 25-1
DA Pam 25-91
FM 11-40
FM 11-82

Learning Event 1:
DOCUMENTATION SLATES

1. Motion picture slates are a very important part of filming. The slate used to identify motion picture scenes may take any one of several forms. In emergencies, cameramen on news assignments have written scene identification on a scrap of paper and photographed it before shooting the scene. In most instances, however, the slates used are more formal. They may be made up to show whatever information is considered necessary, such as the title or project number of the film, the name of the cameraman, and the number of the scene and the take. Some slates also identify the camera, the lens used, and the exposure. The date and even the time of day are sometimes shown. If you are part of a large organization employing a number of crews, the unit number or the name of the director or supervisor of the crew might be included. In short, the slate should contain all the information required for proper identification of a scene.

a. In all cases the following information should be included: name of cameraman, visual information facility or unit, subject, date of exposure, locations, film roll number, special symbols or markings, project number, if applicable, and camera and its identification number, if applicable.

b. The slate may actually be a plain piece of slate with the data lettered on it in white chalk. It may also be ruled into blocks in which essential information is inserted. For shooting sound sequences, the slate includes a clap stick which is closed sharply at the end of the filming of the slate. For shooting silent sequences, a simple slate is all that is needed.

c. When using a slate, place it in front of the camera and run off approximately 5 feet (1.52m). Remember that you must focus on the slate. Usually the focusing distance can be estimated but if you are in doubt, measure the distance to the slate, and then set the focus. The slate should be photographed so that it fills the complete frame. If the slate is too far away from the lens, the lettering will be so small that the editor will have difficulty in reading it. Then, after photographing the slate, don't forget to refocus on the scene to be photographed.

d. A typical slate is shown in Figure 3-1. This slate is a good field slate for documentation work. It is a combination information slate and color control patch. This slate is valuable to the film processing laboratory to determine color balance.

e. When you are photographing from a script, slate each scene. If you are filming without a script, use a slate only at the beginning of the roll. If, for any reason, you don't have time to photograph the slate at the beginning of roll, photograph it at the end of the roll. This is known as "end slating."

f. All documentation footage must have a slate. This applies to both film and television. Many TV cameramen will only "audio slate," that is, record the slate over the microphone. This provides no visual slate. If for any reason the sound is lost, the slate is lost. Always use a slate which is visible on the screen. Figure 3-2 shows a typical sound slate as used in motion picture filming. This type of slate is only required for double system sound.

2. Although you, the cameraman, do not derive any particular value from the slate, the film editor will be hampered, if not completely lost, when slates are not used. This is particularly true when your scenes are not shot in the same order as written in the script. In the field under tactical conditions, the slate is just as important except for different reasons. A roll of motion picture film or TV tape with no slate may very well be worthless to the commander. If he doesn't know what the roll relates to, he cannot make a decision. Always slate your film or TV tape.

GRAY SCALE										SERIES
C	Red-Filter Negative Cyan Printer			M	Green-Filter Negative Magenta Printer			Y	Blue-Filter Negative Yellow Printer	
.00	.10	.20	.30	.50	.70	1.00	1.30	1.60	1.90	
VI UNIT			PROJECT NUMBER				DATE			
69TH VI CO			SPX-129-87				3/4/87			
CAMERAMAN			CAMERA & NO.				FILM TYPE			
WALLER			A'FLEX-14				EMS-7256			
SUBJECT:		OPERATION "SHOE BOX"						ROLL NO.		
LOCATION:		W. BERLIN, W. GERMANY						8		
black	3-color	white	cyan	violet	magenta	primary red	yellow	green		
COLOR CONTROL PATCHES <small>These colors have been selected as representative of those inks commonly used in photomechanical reproduction</small>										

Figure 3-1. Typical slate



Figure 3-2. Sound slate

Learning Event 2:
CAPTIONS FOR DOCUMENTATION

1. Captions are as important to film and television documentation as good exposure. Keep in mind that when you are in the field, you may not see your footage until it is in a completed production. For this reason, both your photographer's captions and motion picture captions must be complete and contain all the information necessary to allow the laboratory to assemble your film into a complete story.

a. Without captions, your footage or tape cannot be used. Consider the following: production laboratory may service many cameramen that are scattered all over a continent. On any given day the laboratory could receive footage from each cameraman. This film, after processing, is viewed and prepared for use in various news, documentary, or training films. While viewing the films the captions are read to get some idea what is happening and where. Suddenly a sequence of 200 feet (60.96 meters) is viewed and there are no captions. This film cannot be used.

b. Films without captions are worthless. Never submit a roll of film without a complete caption. Every caption must have the basic information necessary for identification. In addition to your name, unit, date, and subject, the summary should include the who, what, where, why, when and how.

c. Information may be lumped together in an essay-type description of the coverage or broken into outline form with individual subheadings, as shown below. Either method is acceptable as long as all pertinent items are included.

(1) Who. Give names of persons prominently shown in your film. When a group is shown, such as a team, squad, platoon, etc, captions need not include each person. Just identify the group and perhaps single out the leader for listing by name, hometown, etc. Be sure to have correct spelling. If in the military, include hometown and occupational specialty as well as a brief summary of subject's background. Be sure to include any noteworthy happening in the life of your subject(s).

(2) What. You must identify and provide pertinent nomenclature and facts concerning equipment, machinery, materials, structures, bridges, installations, and prominent landmarks or other terrain features. These items are captioned whether they are part of the main action or just incidentally appear in the background of your scenes.

(3) Where. Give the location of your story or assignment. If the location is a prominent or well-known place, just name the town or city and the state or country in which it is located. If the location is not well known, be more specific. Give the name of the town and its approximate distance and direction from one or two well-known cities, or from any prominent terrain features or landmark.

(4) Why. In many captions the "why" may not exist. Why pertains primarily to particular operational procedures in which an explanation of why this thing is being done in this particular way is a vital part of the story being told.

(5) When. The date is already given in the caption heading, but here you may add the time of day. Include time belt or whether standard or daylight saving time. The time may be particularly important on aerial coverage and in some types of intelligence coverage.

(6) Show. This item also may not apply in some film stories. However, if a film story is supposed to show how something is made or how some process is done, then it would be advisable to supplement the footage with a step-by-step description of how the entire operation, or any specifically vague portion of the operation, is accomplished. This is particularly important when the film scenes, in themselves, do not fully explain the "how."

d. If your captions are handwritten, be sure to print all names, whether persons, cities, or towns. Additional material such as maps, freehand sketches, bulletins, brochures, etc, may be attached to your captions.

2. The motion picture photographer makes notes on a photographer's caption book (Form 3315, fig 3-3) at the time the film is exposed. These captions are cross-referenced to external marks on rolls of exposed film.

Later, the photographer prepares a motion picture caption (DD Form 2537 fig 3-4 front, and fig 3-5 back.) Motion media caption sheets must be filled out as completely as possible, because they serve as the source of information for the commentary that is usually written at a later time.

a. The final caption will be made in five copies based on field caption data. The original and two copies of the DD Form 2537 are shipped in the TV/film canister, or with the media material package. One copy remains at the camera person's unit, and one copy is sent to the higher headquarters of the unit that performed the shooting.

b. The heading of DD Form 2537 is self-explanatory. The classification assigned at the office of origin will be placed in the block "Original Security Classification." If it is unclassified, it is so stated. In blocks of the heading that do not apply, enter "NA."

c. Block 14, VIRIN, must have the unit's Defense Visual Information Activity Number (DVIAN), then the type of media work performed, and the year, then other information as determined by the local activity. For example, SPC Woodrow W. Wilson shot a Video Tape Original (VTO) for the 332nd time in 1989. The VIRIN block would contain the following data: A2306 (DVIAN NUMBER)-VTO-89-WW(HIS INITIALS)-322-U.

3. Motion picture caption preparation.

a. DA Pam 25-91, Visual Information Procedures, is the guiding document concerning captions. It says that motion pictures will be captioned as follows:

(1) DD Form 2537 (Visual Information Caption Sheet) will be used for the final caption. (Figures 3-4 and 3-5 are illustrations of the front and back of the new DD Form 2537.)

(2) The heading of DD Form 2537 is self-explanatory. "NA" will be entered in blocks of the heading that do not apply.

(3) Put the summary or master caption data in block 15 (Fig 3-4).

(4) A complete description will be given for each roll of film/recording. The rolls will be numbered sequentially. All persons, locations, organizations, weapons, and equipment will be fully identified.

(5) Enter reel time and scene description in block 19 (Fig 3-5).

b. Master caption of summary.

(1) When filming a story that consists of more than one roll of film, you will find it necessary to write a cover story. This is where your background material comes into play. The cover story is in addition to the

individual roll captions. The cover story is a narrative which describes the locate, subject, and overall object of the film. It is sometimes called a master caption. You may film a sequence covering a large area or installation over a period of two or more days. It is not practical to repeat the same basic information in all your roll captions.

(2) A cover story is written to explain the overall mission. It includes a description of the filming area or organization. It contains names of commanders, a description of the mission of the unit, if applicable, and any pertinent information that will be repeated in individual captions. The cover story gives an overall picture of the story being filmed. The individual roll captions can concentrate on the details of that particular roll. The summary of Army captions, if written in sufficient detail, is a cover story.

4. The following is a list of the media type abbreviations used in the VIRIN section (block 14), such as "VTO" as used in the product identifying sequence: A2306-VTO-89-WW322-U.

- ARD - audio record disc
- ATC - audio tape cassette
- ATR - audio tape reel
- BDA - board art
- CDA - compact disc audio
- CDV - compact disc video
- IVD - interactive video disc
- LVD - linear video disc
- MCN - motion picture negative, color
- MCP - motion picture positive, color
- MGM - miscellaneous graphic media
- MPN - motion picture negative, B&W
- MPP - motion picture positive, B&W
- MMM - multimedia
- OTT - overhead transparency
- SCN - still photo negative, color
- SLT - slide/tape
- SPN - still photo negative, B&W
- SPT - still photo transparency
- SSS - slide set
- VSP - video still
- VTC - videotape cassette
- VTR - videotape reel

PHOTOGRAPHER'S CAPTION (AR 108-2)			DATE AND TIME 15 Dec 1988 1130 - 1415
PHOTOGRAPHER'S NAME Sgt. B. Brokers			PHOTO UNIT 22 nd V.I. Co.
PURPOSE FOR COVERAGE Army Information			FILM TYPE Ektar E.F. (Tung)
PROJECT OR JOB NUMBER SPX 88-83			COMPLETE <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
LOCATION OF PHOTO COVERAGE Bang-Phi, Vicinity Tailbar			
SUBJECT Convoy to Bang-Phi			
ROLL	FEET	SCENE	DESCRIPTION OF EVENT
PACK	FRAME		
1	1-10		SLATE
	10-20	1	LS Convoy rolling to
			Bang-Phi
	20-30	2	MS Leading Convey Vehicle
			approaching road junction
	30-35	3	CU Truck wheels churning
			in mud
	35-45	4	CU Soldiers peering out
			of Vehicles
	45-55	5	LS MP directing traffic
	55-75	6	MS MP Signals convoy
			to stop - walks over to
			lead vehicle.
	75-100	7	CU MP Points to map
			shows convoy leader
			danger area

DA FORM 3315
1 MAR 77

U.S. GOVERNMENT PRINTING OFFICE: 1979 O-280-114

Figure 3-3. DA Form 3315, Photographer's Caption

VISUAL INFORMATION CAPTION SHEET <small>(Read Instructions on reverse before completion)</small>				
1. PROJECT/EXERCISE NAME OR NUMBER SDP 89-12 EXERCISE WINSTON BASSETT 89		2. PROJECT/EXERCISE LOCATION Ft. Atterberry KS		3. DATE RECORDED (YYMMDD) 890718-890725
4. CAMERAPERSON/PHOTOGRAPHER				
a. NAME (Last, First, Middle Initial) Wilson, Woodrow W.		b. RANK SPC	c. SERVICE NUMBER 818-22-2996	d. ORGANIZATION USACPD Team 8
5. REQUESTING ORGANIZATION USAISC (DAIS-PSD-B) Ft. Huachuca, AZ 85613-5000		6. MEDIA TYPE (X all that apply)		
		a. STILL PHOTOGRAPHY	d. MOTION FILM	g. ANIMATION
		b. STILL VIDEO	X e. MOTION VIDEO	h. OTHER/SPECIALIZED (Explain in item 19)
		c. COMPUTER GRAPHICS	f. ARTWORK	
7. ORIGINAL MEDIA (X all that apply)		8. FILM SIZE	9. FILM TYPE	10. VIDEO RECORDING MEDIA Betacam SP
a. STILL PHOTO				
b. STILL VIDEO		X c. MOTION FILM		
d. MOTION VIDEO				
11. VIDEO PLAYBACK FORMAT (If not NTSC, specify) NTSC			12. ORIGINAL SECURITY CLASSIFICATION UNCLASSIFIED	
13. IMAGERY RECORD SENT				
a. NATURE (If not original, specify) ORIGINAL		b. IF ORIGINAL WAS NOT SENT, EXPLAIN WHY		
14. VIRIN NUMBER(S) (If not listed next to individual scene or photograph descriptions) A2306-VTO-89-[WW322-U]				
NOTE: REFER TO PARA 15b (1), (a), (b), (c), and (d) IN THE TRAINING INFORMATION OUTLINE, TASK 113- 577- 5007.				
15. DESCRIPTION OF PROJECT, EXERCISE, ACTIVITY OR EVENT BEING RECORDED MASTER CAPTION: Alpha Company, 47th Engineer Battalion, prepares defensive tank positions for the 85th Armor Battalion during the delaying action portion of the exercise. The company used M9 Armored Combat Earthmover to dig a successive series of positions for M1 tanks in the area of Kiowa Valley. SUMMARY: Exercise WINSTON BASSETT was a ten-day a division maneuver exercise conducted on the training areas of Fort Attaberry from 12-19 July 1989. All First Division maneuver and support units participate during the three phases of the exercise: defense, consolidation, and counterattack.				
16. ORGANIZATIONAL UNIT SHOWN IN PROJECT, EXERCISE, ACTIVITY OR EVENT Alpha Company, 47th Engineer Battalion, DISCOM.				
17. MAJOR EQUIPMENT OR WEAPON SYSTEM SHOWN IN THE PROJECT, EXERCISE, ACTIVITY OR EVENT M9 Armored Combat Earthmover (ACE)				
18. NAMES OF KEY PERSONS SHOWN IN THE PROJECT, EXERCISE, ACTIVITY OR EVENT PFC Mario Santiago, combat engineer, (Hometown: Evergreen, CO)				

DD Form 2537, MAR 89

442079

Figure 3-4. DD Form 2537, Visual Information Caption Sheet (Front)

19. CAPTION DESCRIPTION OF PHOTOGRAPH(S) OR SCENE(S) <i>(List who, what, when, where, why and how)</i> Reel Time 00:30:22 Slate. 00:30:45 LS Kiowa valley as three M9s move L to R toward the positions they will dig. 00:31:12 MS M9 moving L to R, 3/4 view, approaching camera. 00:31:30 MS M9, stopped, lowers the front blade. 00:31:46 MS M9 driver (PFC Santiago) operating controls. 00:32:10 CU front blade of M9 pushing dirt L to R. 00:32:43 MLS head-on shot as M9, blade down, pushes dirt toward camera. 00:33:02 CU head-on shot of driver operating controls. 00:33:30 RS M9 finishing nearly completed fighting position.						
20. COPYRIGHT OR OTHER RIGHTS IDENTIFICATION <i>(if applicable)</i> 						
INSTRUCTIONS						
<p>Items not listed are self-explanatory.</p> <table style="width: 100%; border: none;"> <thead> <tr> <th style="text-align: left; width: 50%; border-bottom: 1px solid black;">ITEM</th> <th style="text-align: left; width: 50%; border-bottom: 1px solid black;">ITEM</th> </tr> </thead> <tbody> <tr> <td style="vertical-align: top; border-right: 1px solid black; padding-right: 10px;"> 2 Enter the location where the photographs / film / video described on this caption sheet were taken. 5 Enter the organization which requested the imagery. 6 Describe media being forwarded to VI Records Center by entering an "X" in the appropriate box or boxes. If 6.h is marked, explain in Item 19. 7 Describe medium in which imagery was originally recorded. 8 Enter specific film size, e.g. 16mm, 35mm, 4x5, etc. 9 Enter specific film type, e.g. Kodachrome 64, Ektachrome 200, Plus-X, etc. 10 Specify whether 1", 3/4", VHS, Betacam, M-II, 8mm, etc. 11 Specify if PAL, SECAM, HDTV, etc. </td> <td style="vertical-align: top; padding-left: 10px;"> 13 If not original imagery, list specific type such as copy negative, duplicate negative, video dub, etc. 15 This is the cover story. Give a complete description of the project, exercise, activity, or event being recorded. Provide as much detail as possible. 16 Provide the unit designation and its home location. 17 Describe the major equipment items or weapon system shown. For example, if there is a photograph or video segment showing A-10s flying over M-1 tanks, enter "A-10 aircraft and M-1 tanks" in this item. 18 Include the full name, rank, and position of each person pictured unless all of the above information is included elsewhere on the form and it is indicated which descriptions apply to which scenes or photographs. </td> </tr> </tbody> </table>			ITEM	ITEM	2 Enter the location where the photographs / film / video described on this caption sheet were taken. 5 Enter the organization which requested the imagery. 6 Describe media being forwarded to VI Records Center by entering an "X" in the appropriate box or boxes. If 6.h is marked, explain in Item 19. 7 Describe medium in which imagery was originally recorded. 8 Enter specific film size, e.g. 16mm, 35mm, 4x5, etc. 9 Enter specific film type, e.g. Kodachrome 64, Ektachrome 200, Plus-X, etc. 10 Specify whether 1", 3/4", VHS, Betacam, M-II, 8mm, etc. 11 Specify if PAL, SECAM, HDTV, etc.	13 If not original imagery, list specific type such as copy negative, duplicate negative, video dub, etc. 15 This is the cover story. Give a complete description of the project, exercise, activity, or event being recorded. Provide as much detail as possible. 16 Provide the unit designation and its home location. 17 Describe the major equipment items or weapon system shown. For example, if there is a photograph or video segment showing A-10s flying over M-1 tanks, enter "A-10 aircraft and M-1 tanks" in this item. 18 Include the full name, rank, and position of each person pictured unless all of the above information is included elsewhere on the form and it is indicated which descriptions apply to which scenes or photographs.
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21. FOR USE BY RECORDS CENTER						
a. RECORD ACCESSION DATE (YYMMDD)	b. PRESENT SECURITY CLASSIFICATION <i>(if different from original)</i>	c. FINDING AID KEYWORDS <i>(Using revised DAVIS Thesaurus)</i>				

DD Form 2537 Reverse, MAR 89

Figure 3-5. DD Form 2537, Visual Information Caption Sheet (Back)

LESSON 3
PRACTICE EXERCISE

1. What information below best represents a complete caption?
 - a. Name
 - b. Unit, date
 - c. Identifies equipment
 - d. Name, unit, date, subject, and summary
2. You have just finished the slate, what is important to remember?
 - a. To readjust your f/stop
 - b. To reset your counter
 - c. Refocus on the scene to be filmed
 - d. Measure the distance to the slate
3. What happens to the film when there's no caption provided?
 - a. Use in another film
 - b. The director will use it anyway
 - c. The caption is not that important
 - d. This film cannot be used
4. How much film should be exposed while filming the slate?
 - a. 2 feet
 - b. 3 feet
 - c. 5 feet
 - d. 6 feet

ANSWERS TO PRACTICE EXERCISES

Lesson 1

1.	c	LE 4	para 30 (4)	pg 15
2.	c	LE 4	para 12a	pg 20
3.	d	LE 4	para 4b	pg 16
4.	c	LE 2	para 3	pg 10
5.	d	LE 3	para 2a (2)	pg 12

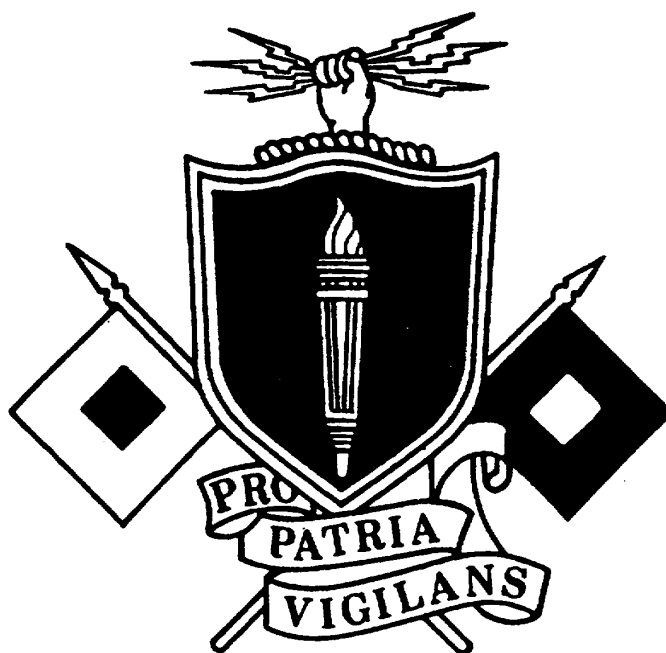
Lesson 2

1.	c	LE 1	para 2a	pg 25
2.	d	LE 1	para 2a	pg 25
3.	c	LE 1	para 2b	pg 26
4.	a	LE 1	para 2c	pg 26

Lesson 3

1.	d	LE 2	para 1b	pg 32
2.	c	LE 1	para 1c	pg 32
3.	d	LE 2	para 1a	pg 31
4.	c	LE 1	para 1c	pg 32

FIELD, TELEVISION PRODUCTION



**THE ARMY INSTITUTE FOR PROFESSIONAL DEVELOPMENT
ARMY CORRESPONDENCE COURSE PROGRAM**

**A
I
P
D**

**READINESS /
PROFESSIONALISM!**



**THRU
GROWTH**

U.S. ARMY AUDIO/TELEVISION OPERATOR
MOS 84F, SKILL LEVELS 1, 2, and 3

AUTHORSHIP RESPONSIBILITY:

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FIELD TELEVISION PRODUCTION

SUBCOURSE NO. SS0547-6
(Developmental Date: 30 Jun 86)

U.S. Army Signal School
Fort Gordon, Georgia

Two Credit Hours

GENERAL

The Field Television Production subcourse, part of the Audiovisual Documentation Specialist, MOS 84F Skill Level 1 course, is designed to teach the knowledge necessary for performing tasks related to production techniques in the field. Information is provided on several tasks which are performed at increasing levels of difficulty at Skill Levels, 1, 2, and 3. The subcourse is presented in four lessons, each lesson corresponding to a terminal objective as indicated below.

Lesson 1: DEFINE FIELD TELEVISION PRODUCTION

TASK: Define field television production, describe components, functions, uses, and limitations of the Electronic News Gathering/Electronic Field Production System (ENG/EFP).

CONDITIONS: Given information and illustrations relating to field television productions.

STANDARDS: Demonstrate competency of the task skills and knowledge by correctly responding to 85 percent of multiple-choice test covering television production; components, functions, uses and limitations of the ENG/EFP System.

(This objective supports STP tasks listed at the end of this section.)

Lesson 2: DEFINE PREPRODUCTION RESPONSIBILITIES FOR FIELD TELEVISION PRODUCTION

TASK: Describe preproduction activities, responsibilities, and preplanning tools.

CONDITIONS: Given information and illustrations relating to the production and preplanning tools of field production.

STANDARDS: Demonstrate competency of the task skills and knowledge by correctly responding to 85 percent of multiple-choice test covering preproduction responsibilities and preplanning tools of field television production.

(This objective supports STP tasks listed at the end of this section.)

Lesson 3: DESCRIBE PRODUCTION TECHNIQUES FOR A FIELD TELEVISION PRODUCTION

TASK: Describe aesthetics of camera composition, skills of the cameraman, lighting on location, the role of audio, operator's maintenance, and safety requirements during a field television production.

CONDITIONS: Given information and illustrations relating to field television production techniques.

STANDARDS: Demonstrate competency of the task skills and knowledge by correctly responding to 85 percent of multiple-choice test covering production techniques of a field television production.

(This objective supports STP tasks listed at the end of this section.)

Lesson 4: DESCRIBE LIGHTING TECHNIQUES FOR A FIELD TELEVISION PRODUCTION

TASK: Describe aesthetics of lighting techniques on location, and safety requirements during a field television production.

CONDITIONS: Given information relating to lighting techniques during a field television production.

STANDARDS: Demonstrate competency of the task skills and knowledge by correctly responding to 85 percent of multiple-choice test covering aesthetics of lighting techniques on location and safety requirements for lighting of a field television production.

(This objective supports STP tasks listed at the end of this section.)

Lesson 5: DEFINE THE POSTPRODUCTION PHASE OF A FIELD TELEVISION PRODUCTION

TASK: Describe postproduction activities, viewing raw footage, editing, aesthetics, operator's maintenance, and preparing a postproduction package.

CONDITIONS: Given information and illustrations relating to postproduction.

STANDARDS: Demonstrate competency of the task skills and knowledge by correctly responding to 80 percent of multiple-choice test covering postproduction activities.

(This objective supports STP tasks listed at the end of this section.)

THE OBJECTIVES FOR THIS SUBCOURSE SUPPORT STP TASKS:

113-577-1050	Operate Electronic News Gathering System/Electronic Field Production Components (ENG/EFP)
113-577-2033	Frame and Compose Pictures for Television
113-577-4029	Operate Videotape Cassette Recorder/Reproducer
113-577-1047	Establish Lighting Requirements for a Television Production
113-577-1053	Establish Audio Requirements for Audio or Television Production
113-577-1057	Establish Personnel Requirements for a Television Production
113-577-2035	Direct a Television Production
214-177-1421	Write News/Sports Copy
214-177-1422	Write Broadcast Feature Copy

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Whenever pronouns or other references denoting gender appear in this document, they are written to refer to either male or female unless otherwise indicated.

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INTRODUCTION TO FIELD TELEVISION PRODUCTION TECHNIQUES

Field production work is demanding. Not all rules of studio television apply to field television production. Portable equipment can be used entirely for field production work. An Audio/Television Specialist requires knowledge in the use of portable television systems and associated capabilities to operate these units in the field. Personnel, lighting, power, and audio requirements in the field can differ from those in the studio. The soldier should be flexible in applying techniques to the production at hand.

LESSON 1
DEFINE FIELD TELEVISION PRODUCTION

TASK

Define field television production, define components, functions, uses, and limitations of the Electronic News Gathering/Electronic Field Production System (ENG/EFP) system.

CONDITIONS

Given information and illustrations about terms relating to field television productions.

STANDARDS

Demonstrate competency of the task skills and knowledge by correctly responding to 85 percent of multiple-choice test covering television production, components, functions, uses, and limitations of the ENG/EFP system.

REFERENCES

None

Learning Event 1:

DEFINE TV FIELD PRODUCTION, THE PORTABLE EQUIPMENT AVAILABLE, ON-THE-JOB PRESSURES AND VARIOUS MISSIONS.

1. Field productions can be demanding, tough and challenging. It takes a special kind of person to work in remote, dangerous or unusual places. Field productions are on-site television productions. They can be produced outdoors, at a remote or a nearby location, or indoors, but not in a studio. A soldier may be on the road half a year or more shooting various assignments. Or a soldier could be assigned to a COMDOC team (Combat Documentation), aptly described as photography with bullets flying.



Figure 1-1. An outdoor field television production



Figure 1-2. A combat pictorial detachment team member "on the road"

2. Maintaining audience interest is a challenge. Convey your dry material with a fresh and new approach, and capitalize on your unusual or exceptional

material. Remember, the production is not for the crew to watch but for the audience.

a. A field production is as truly a production as one in a studio, requiring high standards and professional attitude. The director is totally dependent on the cameraman in field productions for all-around footage. There are no retakes during spontaneous uncontrolled action. If his cameraman misses a shot in the studio, the director may switch to another camera, but this is not possible in the field.

b. Documentation teams in the military gather information quickly and efficiently. These videotapes may be used for training, briefings, or for medical or military operations. Documentation allows a commander to observe the strengths and weaknesses of his troops which may be helpful for future battlefield assessment. Medical personnel can view medical videotapes of procedures in the field. Recruiters use videotapes to brief individuals on different Army MOS and their respective schools. Some of the uses of documentations are:

(1) Videotaping field medical procedures to furnish visual and audio information of immediate value.

(2) Military police documentation for audiovisual support for investigations, and POW identification.

(3) Military operations documentation may be of value to commanders for use in generating ideas, conducting and evaluating combat or combat support, and is useful for staff studies.

(4) Technical intelligence documentation consists of coverage of items of material and equipment of intelligence value.

(5) Psychological operations audiovisual support provides suitable material essential to PSYOPS.

(6) Audiovisual combat support teams provide aerial documentation for commanders to plan and verify deployments.

(7) Training support is a primary mission in peacetime, necessary to maintain readiness.

(8) Remote equipment can be used in surveillance, recording terrain and other features or documenting a hazardous area.

(9) Briefings give personnel a rapid presentation of a particular situation. A videotape can replay pertinent data to the performance of a particular mission.

(10) Military events and ceremonies require documentation, with operation of portable equipment on location for parades, awards, retirements and special events.



Figure 1-3. Electronic Field Production

3. Technical advances have resulted in a unique market of quality portable equipment. The director has a large choice from which to choose for his field production. There are remote vans, camcorders, ENG/EFP systems, microwave links, low light level cameras and mobile units such as small vans, lightweight trucks or station wagons. Portable TV equipment is lightweight, flexible, and easily transported. It is becoming smaller and lighter. Today, the wristwatch television is a reality.

a. Sometimes it is out of the question to simulate outdoor action in a studio. Imagine recording a 30-minute documentary on white water rafting in a TV studio. Hollywood has facilities and a budget for such events. Military television facilities, however, do not have a "Hollywood" budget. As a rule, uncontrolled action is recorded outside the studio.

b. The remote van is a compact system used in outdoor productions. A small, but effective, control room has been erected inside the van (fig 1-4). Essentially a remote van is a full-broadcast facility with cameras on wheels.

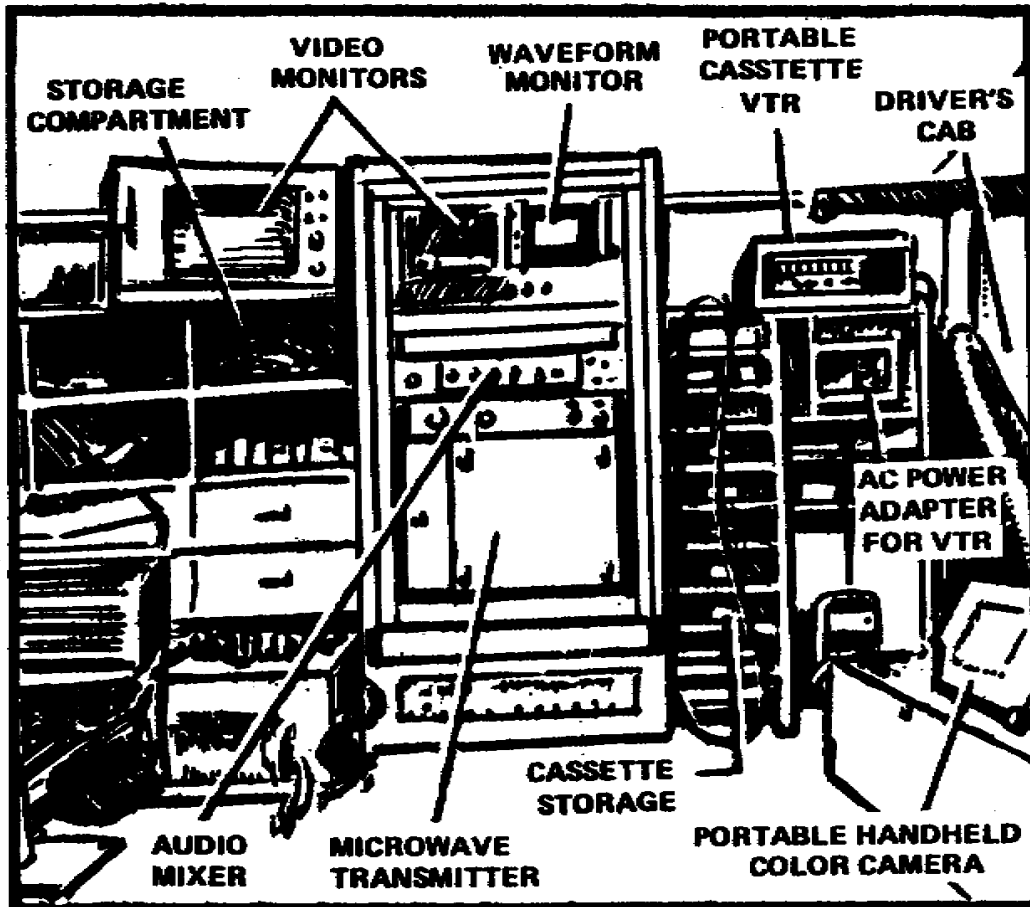


Figure 1-4. Interior of EFP mobile unit

c. The medium-sized van (fig 1-5) is easy to drive and to park. The microwave antenna atop the truck is folded for travel. Interior of the unit contains microwave transmitter, production equipment and supplies.

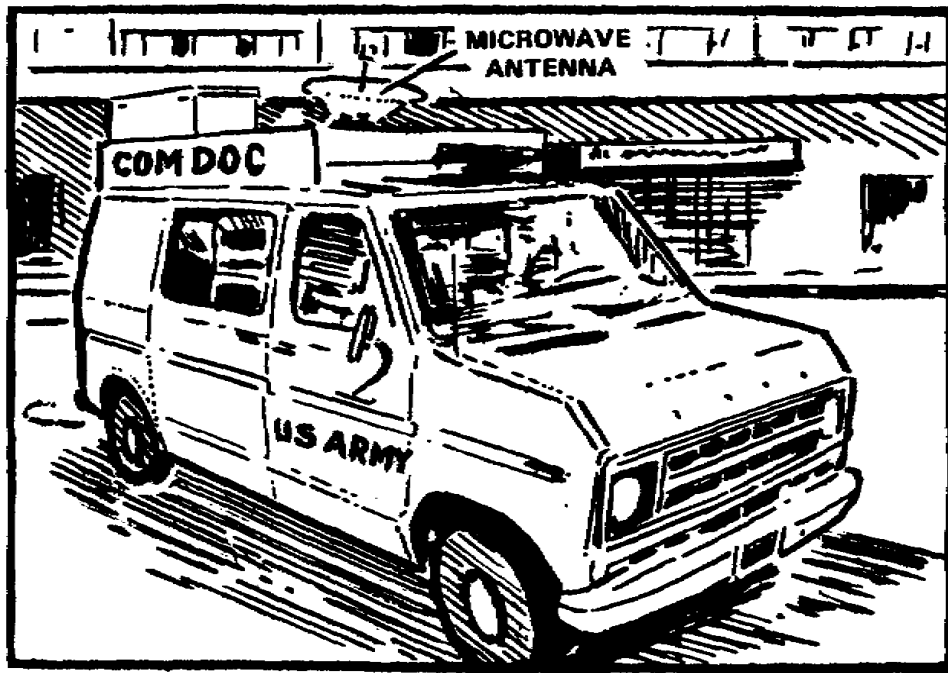


Figure 1-5. Exterior of EFP mobile unit

d. The biggest systems for remotes can be mounted in large trucks or trailers. These units provide a full broadcast standard production facility. Microwave links relay program material.

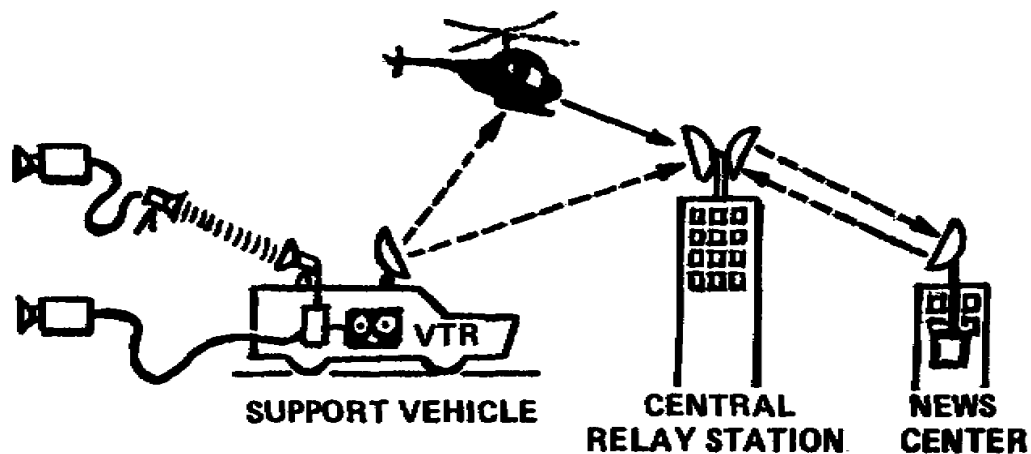


Figure 1-6. Microwave links relaying program material

e. Small van units, lightweight trucks and station wagons are an alternative to the remote van. Versatile designs often include arrangements for roof-mounted cameras. These do not have full broadcast capabilities.

f. ENG/EFP means Electronic News Gathering/Electronic Field Production. The basic ENG system consists of two components, a portable camera and a recorder, with either a side case (fig 1-7) or a back pack (fig 1-8). Field productions originate outside the studio. They are called on-site, on-location, or remote productions.

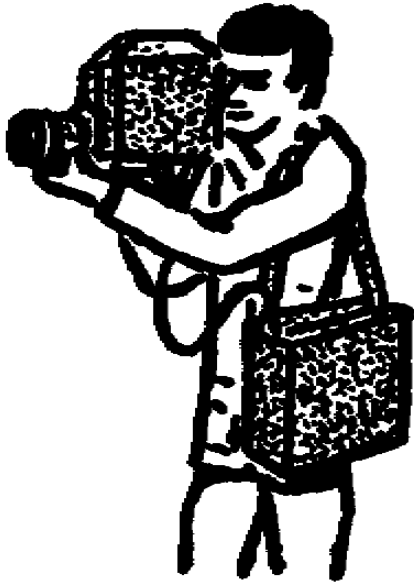


Figure 1-7. EFP system with sidecase



Figure 1-8. EFP system with backpack

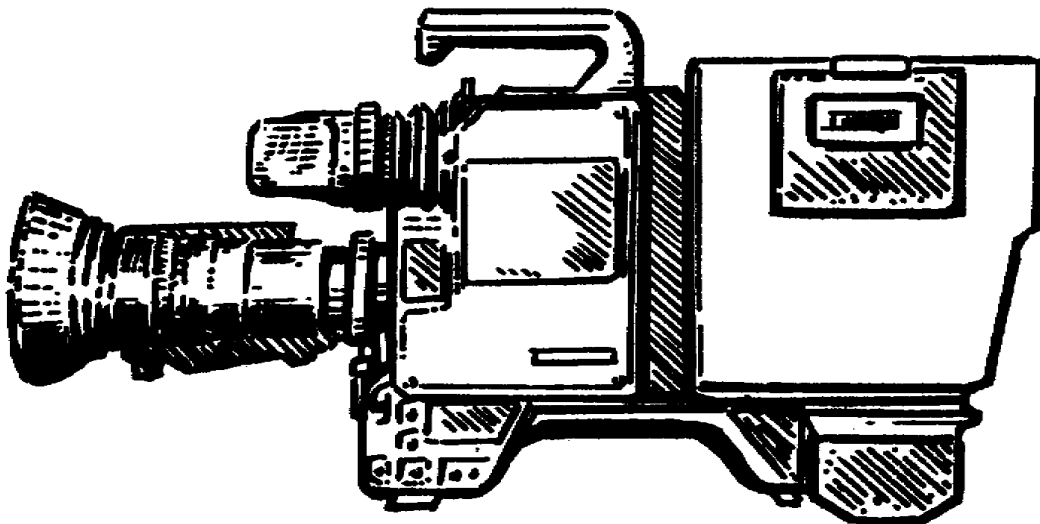


Figure 1-9. A combination camera/recorder

g. Technology has fashioned a combination camera/recorder (fig 1-9). One person can carry this one-unit, lightweight camcorder.

(1) Some of the new television applications in military training are training, briefing, and surveillance. Portable TV equipment can be an effective tool for commanders to train troops. You may be tasked to videotape training "on location."

(2) A majority of education and training situations in the military use the demonstration or "show and tell" method of instruction. For example, portable equipment can reduce the need to move troops from one part of a post to another, preventing costly maneuvers and in some cases, saving time by releasing troops quickly to perform their missions.

(3) A briefing is intended to give personnel a rapid presentation of a particular situation. For example, in a tactical situation, remote television equipment can record all pertinent data to the performance of a particular mission or task and be played back at another location with a speed and versatility that is not otherwise possible.

(4) Remote equipment can be easily adapted for surveillance in tactical situations. Remote television equipment will record terrain and other features of a given area that can be used to support troop maneuvers.

h. The Electronic News Gathering (ENG) assignment is a challenge. Civilian crews record news, e.g., the crisis, the surprise, the emergency or natural disaster. The ENG operator, on the job, tapes an eyewitness account of newsworthy events. The cameraman is like an objective reporter. Shooting uncontrolled action requires quick reflexes because the action occurs only once. Pressure is intense. Time, or lack of it, causes difficulty by increasing the psychological pressure. The need to get shots in some sequence, at the moment the action occurs, and maintaining objectivity, can generate stress.

(1) Solo, you without help must shoot the scenes in order, taking great care to obtain all key shots, necessary background shots and extra footage for editing purposes. You, alone, must quickly record or document all required footage. There are no retakes shooting uncontrolled or spontaneous action. You may shoot uncontrolled action on foot, in the air, or on water. In other words, one cameraman is doing the work of two or three individuals.

(2) ENG camera coverage usually conveys real life events. Generally, there is more emphasis on the picture or video, than the audio. How can you write a script for an explosion three days in advance? There may be just enough time to grab your camera and head for the site. ENG scripts are often written after the fact. These scripts have a straight reporting style and should be objective. The director may not have a basic storyline but may insert portions of video to complete a whole production. ENG coverage may contribute only a fragment of the entire production.

i. On the other hand, Electronic Field Productions (EFP) usually have more structure or plot than the ENG production. These include documentaries, instructional programs, documentation of medical techniques, and even enter-

tainment. Due to time constraints, production standards, in general, are higher for EFP and lower for ENG. Even though EFP productions do not require immediacy, there are time constraints.

(1) Since the EFP production is more structured, the crew is larger. The EFP crew, in the military, is generally a two or three-man team (fig 1-10).



Figure 1-10. An EFP crew

(2) Lightweight and hand-held camera equipment is usually battery powered from a rechargeable battery belt containing silver-zinc nickel-cadmium cells with options for the use of an onboard generator, an inverter supplied by the vehicle generator, a battery system, or powerlines (main supply).

(3) Videocassettes and cartridges have flooded the market, some with quad features and others using the helical format. The newest addition to the family of VTRs is the much heralded videocassette or cartridge. Born out of speculations in the education and home entertainment markets, the videocassette (cartridge) is off to a roaring success. It is a self-contained cassette or cartridge, somewhat larger than the common audio cassette which when inserted in the appropriate machine, records or plays back hours of color programming and sound through any conventional television system.

NOTE: Be sure to insert the record button or "little red button" into the videocassette top. Without the little red button, you cannot record.

(4) The main purpose of a tripod (fig 1-11) is to hold the camera steady at the height that gives the camera a good angle or view of the scene. For this purpose alone almost any tripod will do, from the cheapest 35mm still camera tripods sold in the photo shops, and the rather overpriced tripods sold by some of the large video equipment manufacturers like Sony, to the expensive tripods you can buy from movie and TV supply houses. As a general rule, the more sturdy and expensive the tripod, the easier it is to operate. There are two important parts of any tripod, the legs, and the head, or top portion, on which the camera is mounted. Several hundred pounds of camera can be supported on substantial tripod legs, but you may be more interested in how much weight they will add if you're planning to lug the tripod around. The tripod should let you move the camera to follow or concentrate on the action in a scene. This is where the quality of the tripod head comes in. If you want to tilt the camera mounted on the tripod up or down or to the left or right, while the camera is in use, you need to make the transition smoothly. The quality and style of the head are very important in order for you to achieve smooth transition.

(5) Camera clamps. The panning head may be clamped to a firm tubular-rail structure at a vantage point (fig 1-12).

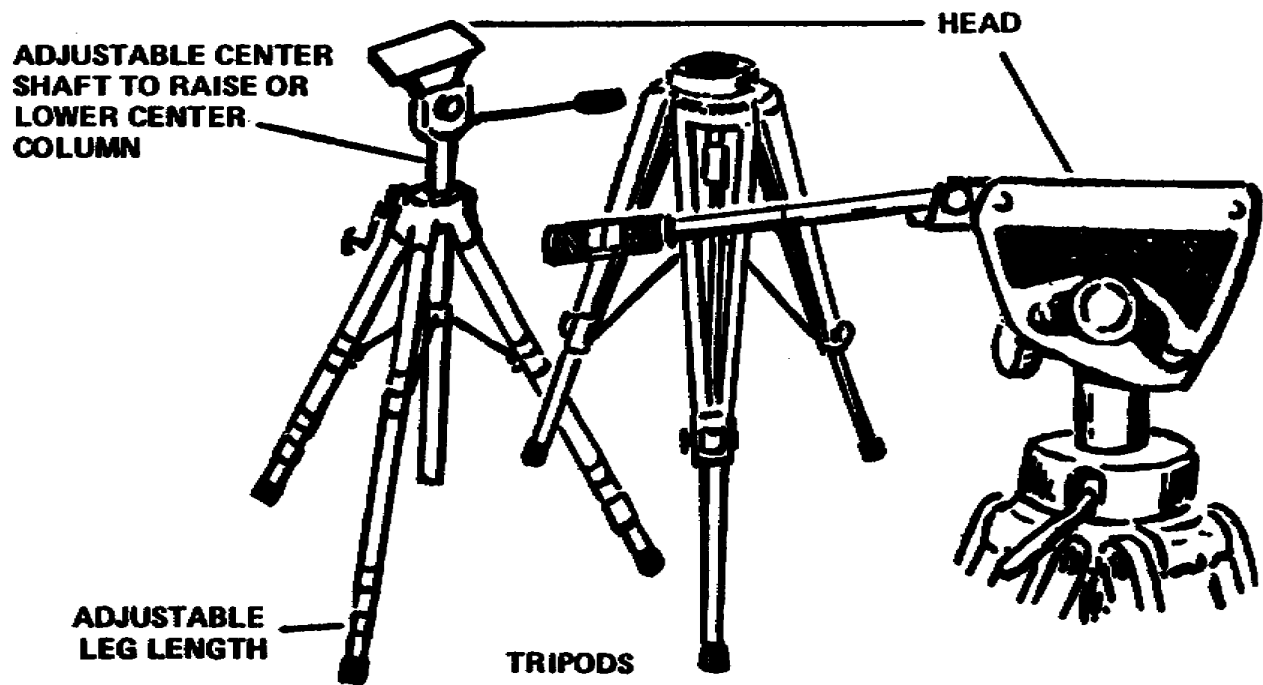


Figure 1-11. Tripods

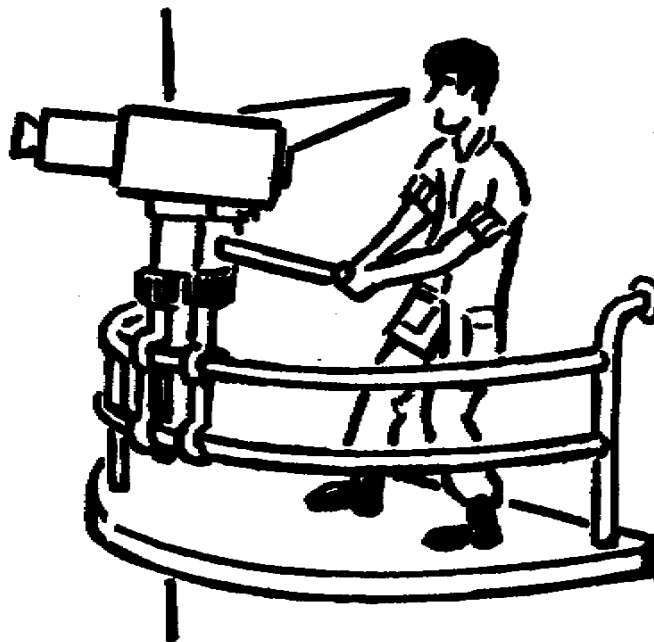


Figure 1-12. Camera clamps

Lesson 1
PRACTICE EXERCISE

1. What does ENG/EFP mean?
 - a. Electrical News Guide/Electrical Frequency Presentation
 - b. Electronic Newscast Graphics/Electronic Fieldgrade Performance
 - c. Electronic News Gathering/Electronic Field Production
 - d. Eyewitness News Group/Eyewitness Field Presentation
2. What are the two basic components of the ENG/EFP system?
 - a. Camera and tripod
 - b. Camera and viewfinder
 - c. Video cassette and camera
 - d. VTR and camera
3. What is the main role of the ENG operator?
 - a. Talent
 - b. Objective reporter
 - c. Artist
 - d. Still photographer
4. What is a term for the combination VCR camera and recorder?
 - a. Camera/recorder
 - b. Camcorder
 - c. Recam
 - d. Recordcam
5. How many chances do you have to shoot uncontrolled action?
 - a. Two
 - b. One
 - c. As many as required by the director
 - d. As many as your supply of tape allows
6. What type of events do ENG cameras usually cover?
 - a. Real life
 - b. Fiction
 - c. Studio productions
 - d. Combat footage

7. What generally powers the portable camera in field productions?
 - a. VTR escutcheon
 - b. RF amplifiers
 - c. Nickel cadmium batteries
 - d. Electromagnets
8. What is the purpose of the little red button?
 - a. To protect the photoelectric surface
 - b. To act as a stop button
 - c. To aid in scan conversion transfer
 - d. To act as a safety device and aid in recording
9. What is the purpose of the tripod?
 - a. To help the operator focus the zoom lens
 - b. To hold the camera steady at a height that gives the camera a good angle of view of the scene
 - c. To tilt and pan
 - d. To dolly and truck
10. Why should you try to convey "dry" material with fresh approach?
 - a. Because protocol requires this
 - b. Because it's implied in audiovisual regulations
 - c. Because you need to reinforce objectivity
 - d. Because boring productions will not hold audience attention
11. What are some of the equipment choices for a field production?
 - a. Dimmer boards, tripods, dollies and microphones
 - b. Mobile units such as small vans, lightweight trucks and ENG/EFP system
 - c. Time base correctors, pedestals and AC power adaptors
 - d. TV monitors, video tape players, and slide projectors
12. In terms of equipment, what is essential for video taping in a disaster area?
 - a. High profile, low mobility
 - b. Low profile, high mobility
 - c. Fast and accurate
 - d. Quick and clean
13. What are the applications of television in military training?
 - a. Training only
 - b. Maneuvers
 - c. Furnish video and audio information
 - d. Education, surveillance, and briefings

14. Which of the following elements are used in field television equipment?
- a. Backpack, ENG/ENP system, remote dolly, rechargeable battery
 - b. Lightweight coaxial cable, pistol-grip, large-scale remote VTR
 - c. Microwave links, ENG/EFP system, remote vans, mobile units
 - d. Videocassette camera, moving vehicle, vidicon tripod
15. What allows an ENG mobile unit to relay video information?
- a. Broadcast-quality closed circuit
 - b. Waveform monitor
 - c. Time base corrector
 - d. Microwave transmitter
16. Which of the following are terms for field productions?
- a. Portable productions, hand-held
 - b. Mobile unit photography, generic video
 - c. Remote productions, on-site
 - d. Divisional photography, vicinity video
17. Why is a bodybrace used?
- a. Safety
 - b. To increase stability of portable cameras
 - c. To prevent damage to the equipment
 - d. To give the director a better shot
18. Which of the following have made changes in the ENG/EFP industry possible?
- a. Portable vans and videocassettes
 - b. Portable cameras and backpacks
 - c. Modern circuitry and miniaturization of TV pickup tubes
 - d. Minicams and instacams

Lesson 1
ANSWERS TO PRACTICE EXERCISE

1. c, Electronic News Gathering/Electronic Field Production
2. d, VTR and camera
3. b, objective reporter
4. b, camcorder
5. b, one
6. a, real life
7. c, nickel cadmium batteries
8. d, to act as a safety device and aid in recording
9. b, to hold the camera steady at a height that gives the camera a good angle of view of the scene
10. d, because boring productions will not hold audience attention.
11. b, mobile units such as small vans, lightweight trucks and ENG/EFP system
12. b, low profile, high mobility
13. d, education, surveillance, and briefings
14. c, microwave links, ENG/EFP system, remote vans, mobile units
15. d, microwave transmitter
16. c, remote productions, on-site
17. b, to increase stability of portable cameras
18. c, modern circuitry and miniaturization of TV pickup tubes

LESSON 2
DEFINE PREPRODUCTION RESPONSIBILITIES FOR
A FIELD TELEVISION PRODUCTION

TASK

Describe preproduction activities, responsibilities, and preplanning tools.

CONDITIONS

Given information and illustrations relating to the preproduction and preplanning tools of field television production.

STANDARDS

Demonstrate competency of the task skills and knowledge by correctly responding to 85 percent of multiple-choice test covering preproduction activities, responsibilities, and preplanning tools of field television production.

REFERENCES

None

Learning Event 1

DESCRIBE PREPRODUCTION PLANNING, THE NEED FOR PLANNING, STATING THE OBJECTIVE IN A MISSION STATEMENT AND/OR TREATMENT AND THE DIRECTOR'S ROLE

1. Planning is the first step in your production. Without proper planning time, money and manpower will be wasted. Lack of planning translates into confusion, even crisis, resulting in inoperable equipment, inadequate crew or illogical scripting. Preproduction is the time prior to production when the director selects equipment and personnel, outlines a tentative schedule, and ensures that a script or shooting outline is written. The director visualizes and develops camera shots. Preproduction can require more time and effort than production itself. There are three questions the director must answer: Who is your audience? What will the tape be used for? Will you use a script or a shooting outline?

2. The director must also have an equipment inventory, a meticulous list of all equipment and accessories. The checklist must be 100 percent accurate. Without adequate operational equipment, you cannot videotape a production. If the crew is careless, or in a hurry, vital equipment may be left behind. Once you are on site, it is not possible or practical to return to the shop. If the equipment is missing or inoperable, you are out of luck.



Figure 2-1. The director is "the boss"

3. The director must be a forceful and creative individual to survive. It is on his ambition and authority that things happen. Television production is a "team effort" with one boss (fig 2-1). That boss is the director.

a. In preproduction, the director has the bulk of preproduction responsibilities. Key responsibilities include developing an equipment inventory and checklist, selecting personnel, and ensuring script or shooting outline is written. If practical, the director will perform a remote survey or on-site survey. After the script or shooting outline is finished, the director begins to visualize his key camera shots. He literally pictures the production in his mind.

b. A mission statement is a clearly stated objective. It defines the purpose, goal, or objective. The director answers the question, what is the mission? When writing the mission statement, know what the tape will be used for and what the message will be. The director must know what the viewer will be able to glean from the final tape; information, instruction, or entertainment. A program works best when it gives a combination of all three.

c. In preproduction meetings, the director will explain the mission to the crew. One purpose of this meeting is to give the cameraman a scene-by-scene breakdown of the footage expected. Plan preproduction strategies during the meetings. Time frames, deadlines, visual style, and standards will be spelled out; a briefing given on the location, equipment to be used, and personnel on the crew. During preproduction meetings, the script or shooting outline is a rough sketch of what the cameraman will videotape. The director then outlines a tentative schedule. If, however, your director is very general about what is expected; then you are on your own. At times like that it is best to shoot for who, what, where, why, and how.

d. A remote survey describes in detail the remote site and discloses general conditions. Scouting the location before hand is an excellent idea. The following is an example of pertinent questions to ask:

- (1) Where is the exact location? (Address or grid coordinates.)
- (2) Where is the nearest telephone, if any?
- (3) Who is the Point of Contact (POC)?
- (4) When is the production to be shot?
- (5) What are the power requirements?
- (6) What are the camera positions, cable runs?
- (7) What are the lighting requirements?
- (8) Does available light need to be supplemented?
- (9) Is a portable lighting kit needed?
- (10) Are there large objects or buildings blocking the camera's view?
- (11) What will be the location of the sun?
- (12) Where will the major action areas be shot?
- (13) Is a generator needed to power the lights?
- (14) What are the transportation arrangements?
- (15) Is it necessary to make arrangements for meals, overnight accommodations or overnight security for the equipment?
- (16) If applicable, what are the room measurements?

e. The director goes through a process where he reads through and marks the script or shooting outline. This is called the read-through. At this time the director pictures or visualizes the camera angles and camera positions.

(1) Determining camera angles requires a process called visualization. The director must picture the production in his mind scene by scene. This is thinking in images, in pictures.

(2) Choosing personnel generally means choosing the best. A good director knows the strengths, weaknesses, and potential of his crew.

f. The director starts the creative process. He must develop a story board (if needed), and put together a script or script outline. The kind of script chosen will depend on the type of program.

(1) To shoot a particular scene, the director must arrange camera and audio coverage for the shots. The director will mark the camera positions needed and locate the mikes. The resultant rough production plan (camera plan), together with the script-margin action notes or sketches, form the basis for the production. Even the biggest productions can be analyzed into shots or sequences in this way.

(2) Once a remote survey has been prepared it is time to examine the production treatment: evaluate, discuss, anticipate practical problems and so on. The outlines should also propose other contributions such as lighting treatment and audio effects. Other considerations are documentation, cost, manpower, scheduling, and equipment selection.

(3) Much depends, of course, on the type of show you are considering: how it is to be recorded, elaboration of treatment, any special setups, and editing facilities, etc.

Learning Event 2

DESCRIBE THE STORY BOARD AND WHY IT IS USED

1. One tool in preplanning is a story board. It is a group of 3- by 5-inch cards pinned to a bulletin board. Each 3- by 5-inch card includes a simple sketch, an important or key scene on the left, and a space for narration on the right. Stick figures are acceptable. The story board can include simple sketches, photos, illustrations and/or graphics.

a. Storyboards are useful for collecting, generating and/or organizing visuals. Arrange your cards in sequence, grouping cards with similar scenes. This aids the director in seeing, scene by scene, the final production.

b. Storyboards can be used as a reference point for the script.

c. Storyboard approach. Where systematic planning is practical, a director may use a storyboard for selected key shots only, or for scene-by-scene treatment. Here we are concerned with the shot significance, salient features, a mood or style. Storyboard methods involve analyzing the script, deciding on composition of each scene and then working it out. Prerehearsal planning must be realistic. Most directors dislike rigid planning methods, preferring a more flexible approach.

2. Shot organization is a part of preplanning. It takes time to experiment with camera shots. Shots must be appropriately chosen; only the director is in a position to do this.

a. Brainstorming is useful for generating creative ideas. After brainstorming, write down likely and unlikely ideas. Later group cards together with similar ideas. The planning board is useful for organizing ideas.

b. Together the storyboard and planning board can be a reference point for writing the script. However, simpler production may not require in-depth planning. It may require a shooting outline.

Learning Event 3:

DESCRIBE A SCRIPT, HOW IT IS PREPARED, AND ITS VALUE TO THE DIRECTOR

1. A script should have unity, or wholeness, and logical development. Reinforce the basic idea. Research your materials. Consult subject matter experts. Develop and expand the key ideas of the script.

a. Although a script is open to interpretation, it does give a general direction and guidance. Think of your script as a guide. The script influences your choice of camera shots and camera angles. It indicates lighting, audio, power, and talent requirements, pacing, and style. Suppose the script specifically tells you that a man is dying. You, as director, choose a shot of the soldier's face. An extreme closeup of the face, expressing pain and imminent death, would be very powerful. Again, a script implies setting, major action, and style. How might a training tape on a field medical procedure differ in style from a documentary on California bikers?

b. The type of script depends on the complexity of the subject and the production capabilities. The director has the final say as to the simplicity or complexity of the final copy. A script should be well written and organized. Say what you want to say, as simply as possible, with the fewest number of scenes. The style should be informal, natural-sounding and quickly grasped. Do not clutter the dialogue and narrative with too many facts and figures. Some suggested steps to writing a script are: research, brainstorming, outline, treatment, and finally, the scenario.

(1) If you are writing a script on drug and alcohol abuse, research the existing literature on drug addiction and alcoholism. Collect your research material, then evaluate. This is the fact-finding stage of scriptwriting.

(2) Brainstorming can generate creative thinking. It is playing around with ideas. Write down whatever ideas come to your mind, as bizarre or outlandish as they may seem to you. Don't be afraid to be innovative. Narrow down your usable ideas through discussion with the production team.

(3) An outline is a general description or explanation of material, listing major steps or points. Outlining is arranging topics into major categories. An informal outline can provide a sufficient framework from which to write.

(4) A treatment is a scene-by-scene description of the proposed script. It answers such questions as: Will the production be in the studio or in the field? What production modes will be used? What are the results of the audience analysis?

(5) There are several kinds of scripts: news, documentaries, training tapes, or fictional. The news writer must objectively report the news. The information should be clear and concise. The training tape should be accurate and interesting. The documentary must parallel reality. Spot announcements should be attention-getting.

(a) An audience analysis should be done before the script is written. Factors such as age, sex, rank, MOS, education level, reading level, ethnic background, religious beliefs, and knowledge of ideas presented should be considered.

(b) The TV script writer should know the limitations and capabilities of cameras and the audio recording equipment. Understanding the range of audio and visual special effects is necessary to produce a program that can be technically acceptable.

(c) The following are a few questions to ask yourself while writing: Where are you going to put your emphasis?

- Is the script practical to produce?
- Are the scenes easy to visualize?
- Is the format correct?
- Is the dialogue narrative realistic?
- Is the style natural?

c. The full script is divided into two vertical columns, one is double spaced for spoken narrative (audio), and one for video. The audio column has all narrative. Music and sound effects are identified as well as directions for talent. Narrative is double spaced, using upper and lower type. Directions, however, are capitalized and single spaced. For less complex productions, the full script is not necessarily a rigid document inhibiting all production personnel. It simply tells you what is expected each moment of production. This can be modified. The full script is a plan and details are added as the production develops.

2. For some productions, the shooting outline or outline script is sufficient. To include detailed information for lighting would be pointless. If a dialogue and/or action is spontaneous, there can be no script, only a shooting outline. As a director you must be technically and factually prepared. It is important to ensure that the subject is neither too broad or too narrow and that there is sufficient time. After researching, the idea may prove to be unworkable or dull. The sooner the producer decides that an idea is workable, the better. A promising idea does not always result in a promising production.

Lesson 2
PRACTICE EXERCISE

1. What is the first step in any professional production?
 - a. Select crew
 - b. Write script
 - c. Lighting
 - d. Planning
2. What is preproduction?
 - a. Down time prior to production
 - b. Time prior to production to plan power and lighting requirements
 - c. Time prior to production director reads through and marks script
 - d. Time prior to production when director selects equipment, personnel, ensures script is written and plans camera shots
3. Who is the final authority in a TV production?
 - a. Audience
 - b. Senior NCO
 - c. Director
 - d. First cameraman
4. What is a shooting outline?
 - a. Remote survey
 - b. Another term for script
 - c. Scouting the location beforehand
 - d. Rough sketch of what cameraman will videotape
5. What is the purpose of a remote survey?
 - a. To determine visual style
 - b. To give cameraman scene by scene breakdown
 - c. To outline a tentative schedule
 - d. To provide details of the remote site
6. What is visualization?
 - a. Planning visual style
 - b. Thinking in pictures
 - c. Marking the script
 - d. Organizing thoughts

7. What is a storyboard?
 - a. 3- by 5-inch cards pinned to a board, each containing a key scene
 - b. A specific guide
 - c. Another term for planning board
 - d. Outline for a story
8. What does the script influence?
 - a. Unity and logical development
 - b. Research
 - c. The critique
 - d. Camera shots and camera angles
9. Which of the following best describe a full script?
 - a. It is prepared in a horizontal format
 - b. It is an outline of spontaneous action
 - c. It is capitalized and single spaced
 - d. It is divided into two vertical columns
10. What is an equipment inventory?
 - a. General outline of equipment
 - b. List of all equipment and accessories
 - c. List of vital equipment
 - d. List for maintenance

Lesson 2
ANSWERS TO PRACTICE EXERCISE

1. d, planning
2. d, time prior to production when director selects equipment, personnel, ensures script is written, and plans camera shots
3. c, director
4. d, rough sketch of what cameraman will videotape
5. d, to provide details of the remote site
6. b, thinking in pictures
7. a, 3- by 5-inch cards pinned to a board, each containing a key scene
8. d, camera shots and camera angles
9. d, it is divided into two vertical columns
10. b, list of all equipment and accessories

LESSON 3
DESCRIBE PRODUCTION TECHNIQUES FOR A FIELD TELEVISION PRODUCTION

TASK

Describe aesthetics of camera composition, skills of the cameraman, lighting or location, the role of audio, operator's maintenance, and safety requirements during a field television production.

CONDITIONS

Given information and illustrations relating to field television production techniques.

STANDARDS

Demonstrate competency of the task skills and knowledge by correctly responding to 85 percent of multiple-choice test covering production techniques of a field television production.

REFERENCES

None

Learning Event 1:

DESCRIBE SKILLS OF THE CAMERAMAN

1. As a rule, pedestals support the camera in the television studio. Camera movements in the field, however, may require hand-held camera technique. Professional cameramen possess the grace and skill of an athlete. You have to adapt to the physical demands of the camera. In the field, you will be required to brace the camera against your body (figs 3-1a, 3-1b). The camera then becomes an extension of your body. The steady-hold technique requires calm and considerable strength. Shaky camera shots result in unusable footage. Mastering the steady-hold is a part of being a competent cameraman. Flexibility of movement is an advantage to the cameraman who can work without a tripod.

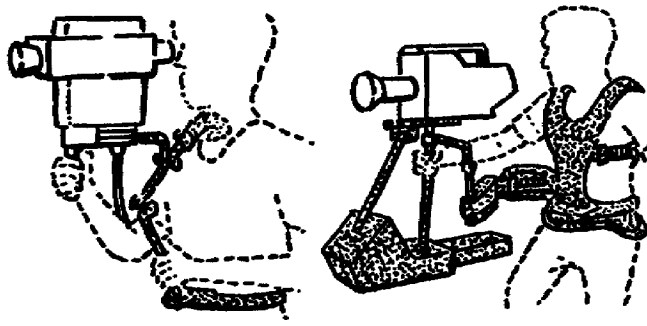


Figure 3-1a. Bracing the camera against the body

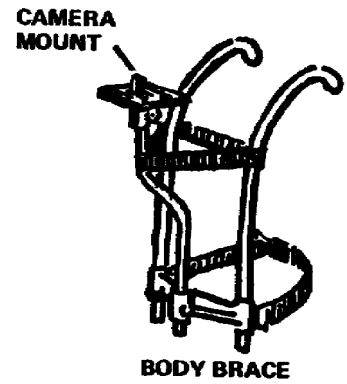


Figure 3-1b. Closeup of body brace

2. Camera movements include the pan, tilt, dolly, truck, and arc.

a. A pan is a horizontal movement of the camera lens, to the left or right, often used to follow action (fig 3-2). In a pan left, the camera lens goes to the left. Panning should not be overused because it can make the audience "dizzy." It is desirable to precede the pan with a brief, non-pan shot.

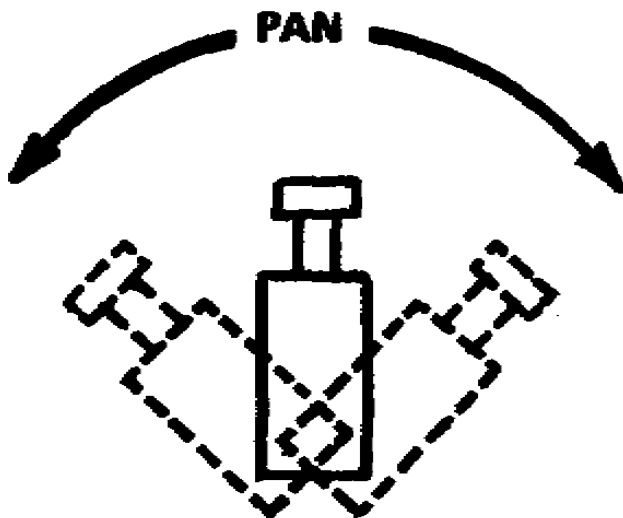


Figure 3-2. Panning with the camera

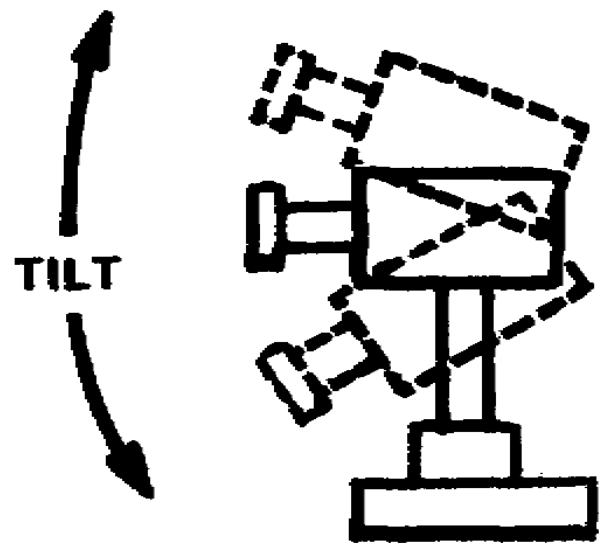


Figure 3-3. Tilting with the camera

(1) There are two reasons to pan. The first is to cover large areas of terrain or nature (the word pan comes from panorama). The second reason to pan is to follow action.

(2) Sometimes it is necessary to get a bird's-eye-view of the action. When following action, a pan is effective. The cameraman could zoom out and follow with a long shot, but that would not be as effective, since television is a closeup medium. Closeup shots are effective for television since the screen is so small.

b. A tilt is a vertical movement of the camera head, up or down (fig 3-3). It is used to follow vertical action, such as a man standing up or sitting down. A cameraman may tilt from head to foot of a stunning model to show the outfit she is wearing. Proper speed in tilting is important. If the camera tilts while the talent is standing up, the talent's-head will vanish too soon. Both a pan and tilt are used to redirect the viewer's attention.

(1) Except when following action it is best not to pan or tilt. It is generally better to avoid panning or tilting a static object. If the object is too large to be entirely included in the viewfinder, zoom to a wide angle shot (fig 3-4) or back up to a greater subject distance. When it is necessary to pan or tilt the camera over a static or stationary subject, move the camera slowly. Otherwise, the motion will appear rough and fast on the TV screen.



Figure 3-4. Using a zoom lens

(2) When panning or tilting, a long-recognized technique is to begin and end with the camera stationary. Stop the camera movement at the completion of the pan or tilt, and end the scene with the camera motionless. Do not follow one panned (tilted) scene with another. Follow shots are acceptable, panning can be covered up by having someone walk through the scene and follow.

c. A dolly is a camera movement toward the talent or away from the talent (fig 3-5). To dolly in, the cameraman moves in; to dolly out, the cameraman moves away, in a vertical line, from the action or talent.

d. A truck is a lateral movement of the entire camera, to the right or to the left (fig 3-6).

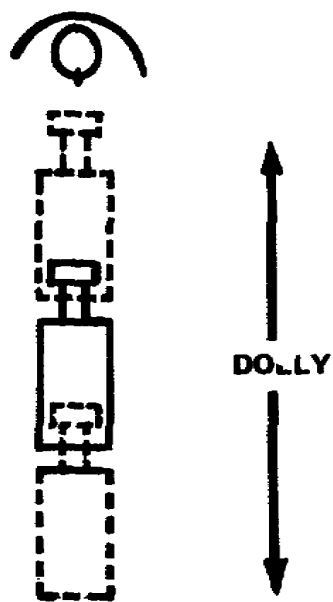


Figure 3-5. Dolly movement

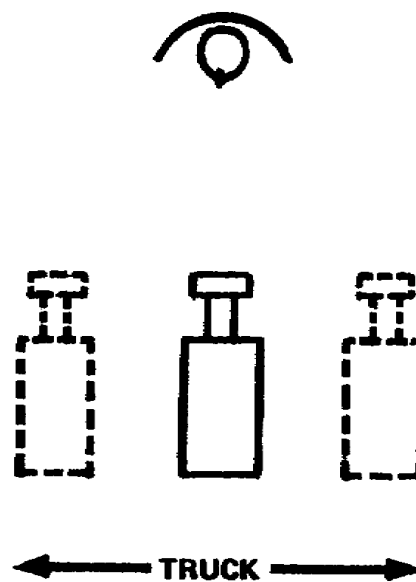


Figure 3-6. Trucking movement

e. An arc is an arched dolly or truck movement of the entire camera (fig 3-7).

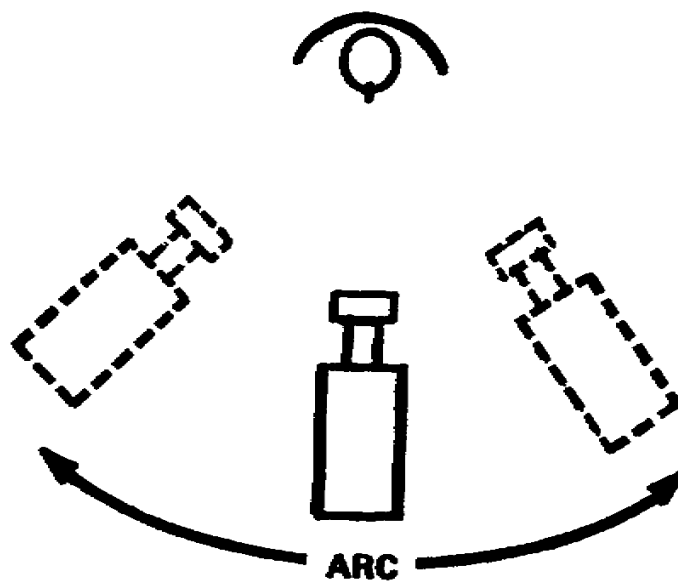


Figure 3-7. Arc movement

3. The technique for hand-held operation is basically the same for all cameras; size and weight are the main differences.

a. Success or failure in hand-held camera operation depends primarily on the proper stance. You must stand with your feet about 18 inches apart for good support, thus preventing body sway.

b. Hold the camera with both hands and use any aids which may be provided by the manufacturer. Many cameras are made to rest naturally against your forehead as you look through the view finder, providing another point of support.

c. Pull in your elbows and press them firmly against your sides, if you can, while videotaping the scene.

d. Practice the proper stance while holding a camera and see just how steady you can be. It will help if you can hold your breath while taping, provided the scene isn't too long. This eliminates the rise and fall of your chest. Try to relax, being tense can cause the muscles to jerk, producing jerky footage.

e. You must strengthen your skills as a cameraman. If it is possible, practice your skills as follows:

(1) Maintain subject size as a talent walks towards or runs past camera.

(2) Maintain focus, follow a moving object, maintaining focus as a subject approaches or moves away.

(3) Practice finding, focusing and composing a scene during unfolding action. The purpose is to find the object, focus and compose quickly and accurately.

(4) Practice tracking, following an object, such as a horse, while maintaining good composition. The horse should be properly framed with proper lead space.

(5) Practice steady-hold. Hand-held camera work can only be done by a calm person who possesses adequate strength.

(6) Find as many interesting shots as possible from a single camera position.

(7) Look for difficult shots.

4. Types of transitions. A simple method of going from scene to scene is a transition. These include the cut, blackout, swish pan, fade-to-black, defocus/refocus, and black surface. There is also the sound transition and montage. The director creates an appropriate transition.

a. Black out. Talent walks toward the camera until the entire picture is blacked out from lack of light. The next scene may start with the talent walking away from the camera.

b. Swish pan. A swish pan is used to show a change in time or a change in place, between scenes. A swish pan is a quick pan where everything blurs. After the swish pan, cut directly to the next scene. Or cut to a quick pan, stopping directly on the new subject. Its success depends on the right speed and smooth movement.

c. Defocus/refocus. Defocus the lens. The image becomes blurred. Start next scene out of focus. Go into focus. This implies a change of time or scene.

d. Black surface. Using a black surface or uniformly colored surface, zoom in and then cut. Zoom in to a blue wall, cut to the next scene. Again start on the blue wall.

Lesson 3
Learning Event 1
PRACTICE EXERCISE

1. What generally supports the TV studio camera?
 - a. Body brace
 - b. Spring harness
 - c. Pedestal
 - d. Grip
2. Which of the following is the term for bracing the camera against the body?
 - a. Steady state
 - b. Bracing technique
 - c. Pan
 - d. Steady-hold
3. What is a pan?
 - a. Cookery for an FTX
 - b. Vertical movement of the camera head
 - c. Horizontal movement of the camera lens
 - d. Camera movement toward the talent
4. What is a tilt?
 - a. Bird's-eye view
 - b. Lateral movement of entire camera
 - c. A shaky movement resulting in unusable footage
 - d. Vertical movement of the camera head
5. What is a truck?
 - a. Movement in a vertical line
 - b. Slow steady movement
 - c. Follow shot
 - d. Lateral movement of entire camera
6. What is a transition?
 - a. Tracking without a tripod
 - b. Simple method for going scene to scene
 - c. Abrupt change in script style
 - d. Sudden change in viewpoint

Lesson 3
Learning Event 1
ANSWERS TO PRACTICE EXERCISE

1. c, pedestal
2. d, steady-hold
3. c, horizontal movement of the camera lens
4. d, vertical movement of the camera head
5. d, lateral movement of entire camera
6. b, simple method for going scene to scene

Learning Event 2:
DESCRIBE FRAMING THE PICTURE

1. Good framing is fundamental to a good picture. Without good framing techniques, everything else is useless. For instance, tight framing emphasizes the screen's confines. Head movements can pass out of the frame, requiring catch-up panning, an obtrusive operation (fig 3-8).

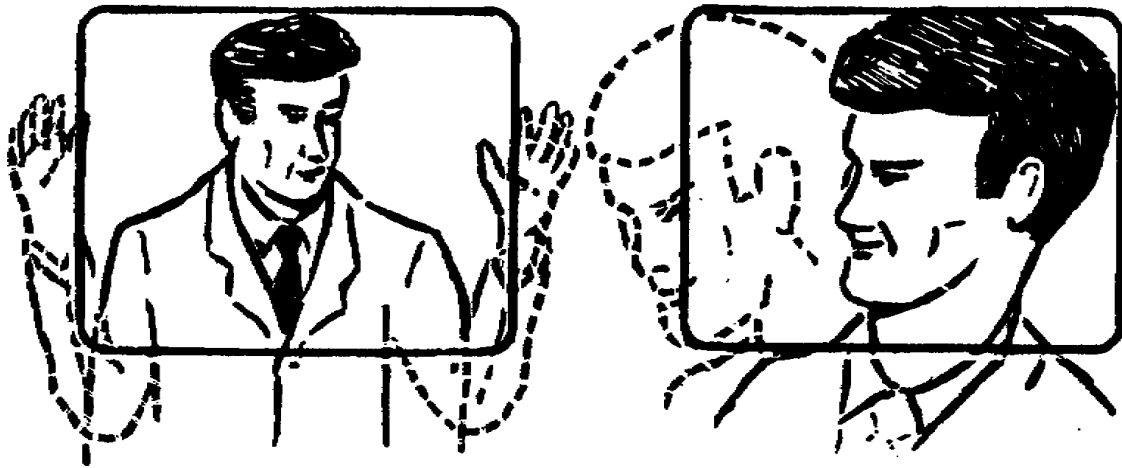


Figure 3-8. Avoid tight framing

a. Allow enough headroom for the subject. Too little headroom creates tension within the TV screen. For good vertical balance, avoid the cramping effect of insufficient headroom or a bottom-heavy effect of excess room. The compositional elements can become incidental borders, depending on how they are formed (fig 3-9).



Figure 3-9. Appropriate and inappropriate headroom

b. The natural cutoff lines for people (fig 3-10) are:

- (1) Eyes, nose, or mouth line
- (2) The chin
- (3) The bust
- (4) The waist
- (5) Hands at sides
- (6) Hemline (for females)
- (7) Knees
- (8) Ankles

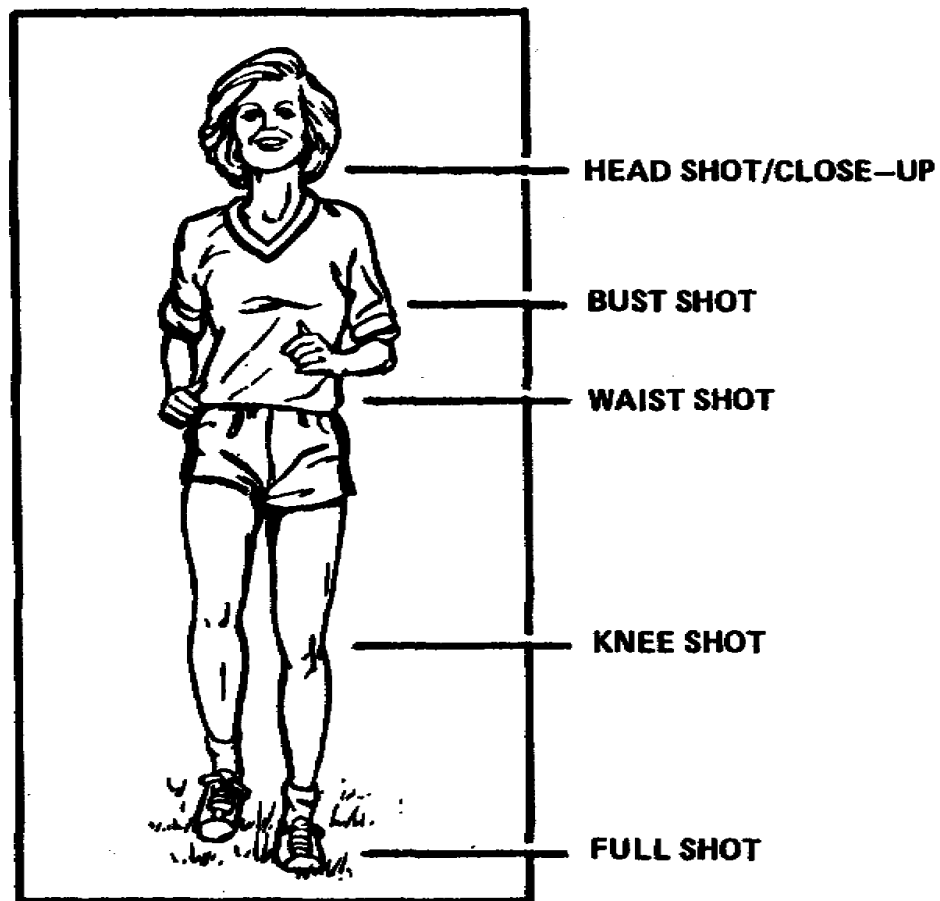


Figure 3-10. Cutoff lines

c. There is a transmission loss of about 10 percent when framing. To compensate, you need to assume that 10 percent of video around the edges will be lost (fig 3-11).

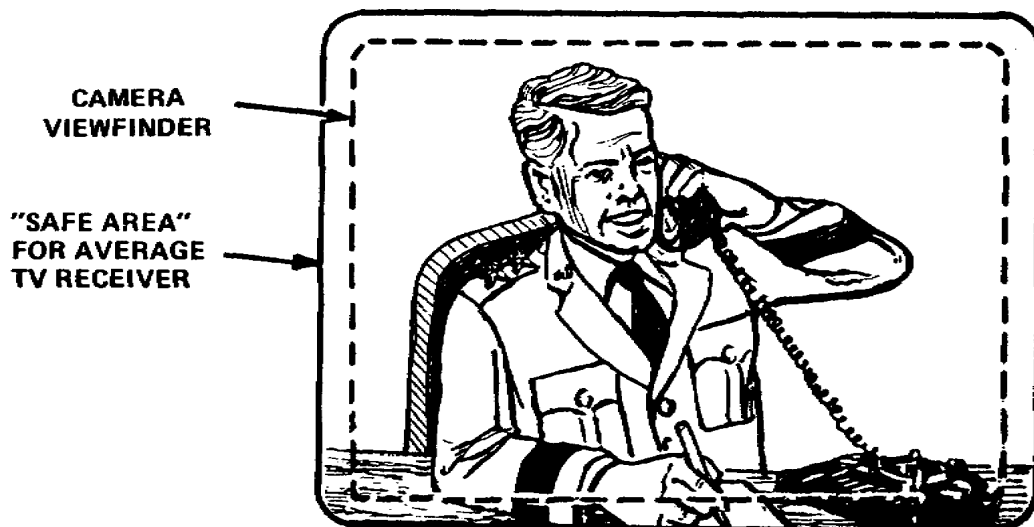


Figure 3-11. Transmission loss

d. When following the action of a person or object, provide enough lead room (fig 3-12).

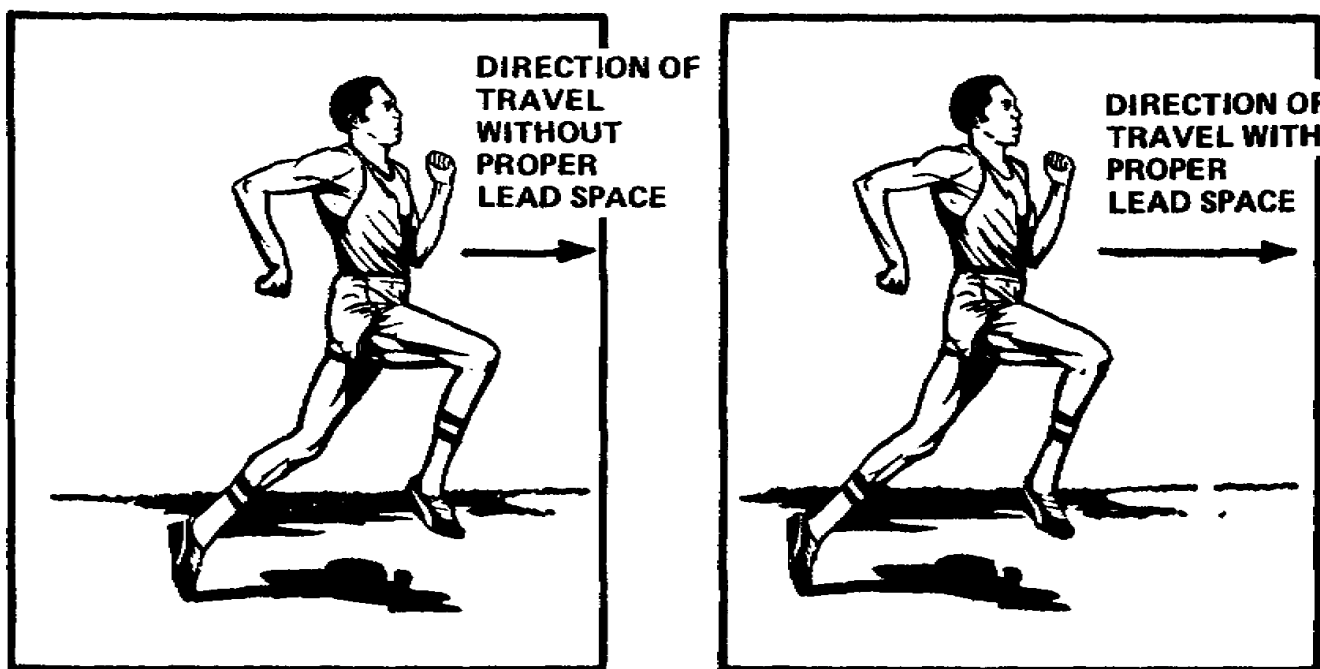


Figure 3-12. Lead room

e. Nose room. Whenever subjects look offscreen, frame them with more room in the direction of the look. In the first frame (fig 3-13a) the subject looks as though she is being pushed by the right side of the TV frame. In the second shot (fig 3-13b) the additional room produces a more effective composition.



Figure 3-13a. Nose room, incorrect positioning



Figure 3-13b. Nose room, correct positioning

f. Placing the subject at the edge of the screen creates tension, unless a dramatic effect is required (fig 3-14).

g. Frame a person or object towards the center or near center of the screen for stability (fig 3-15).



Figure 3-14. View with subject at edge of screen



Figure 3-15. Subject near center of screen

h. Putting them exactly in the center of the screen can cause a certain amount of boredom in the audience, especially over a period of time. Unless required for dramatic effect, putting a person in the exact center of the screen should be avoided (fig 3-16).

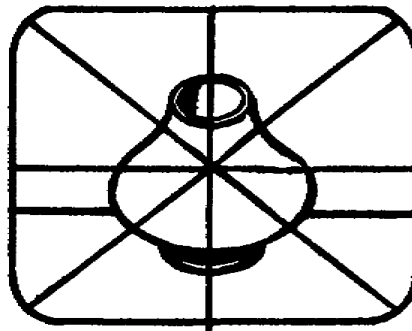


Figure 3-16. Subject in exact center of screen

i. Avoid juxtapositioning subjects and objects. If you place a talent in front of or beside a set or prop in such a way that it appears to grow out of their side, head, or body, that is juxtapositioning (fig 3-17).



Figure 3-17. Juxtapositioning, poor placement of talent in relation to sets or props

2. Every photograph should have one definite center of point of interest which is supported by the remaining elements. The placement of the principal subject or action to gain its center of interest allows the viewer to use all the meaning of the photograph more clearly and quickly. To locate the ideal site for the center of interest, consider the scene as a tick-tack-toe board. Place the principal subject on one of the intersections (fig 3-18).

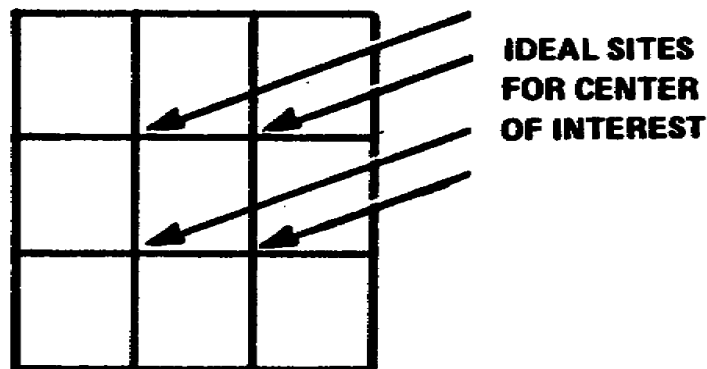


Figure 3-18. Ideal sites for center of interest

a. Another point to consider is on which of the four intersecting points to place the principal subject. The following rule should help. If the subject is facing right, place it on one of the two points on the left (fig 3-19).

b. If facing left, place it on one of the two points on the right (fig 3-20).

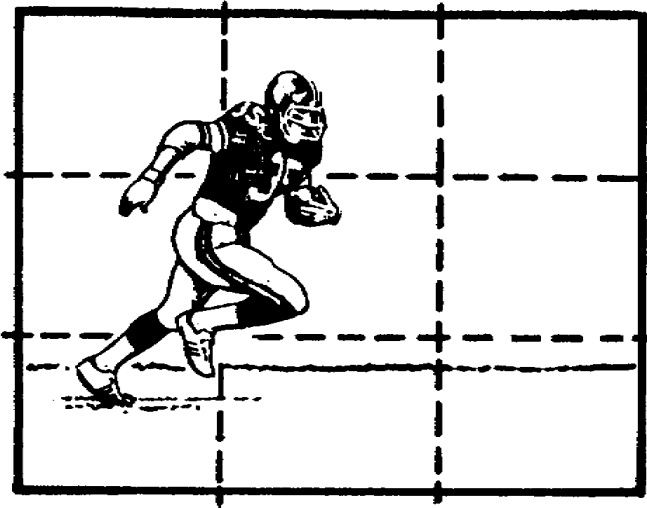


Figure 3-19. Subject facing right

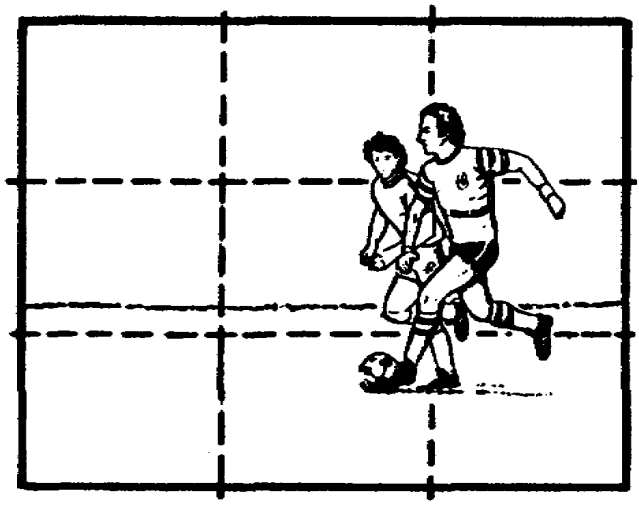


Figure 3-20. Subject facing left

c. If the subject is looking up, place it on one of the bottom two points (fig 3-21).

d. If subject is looking down, place it on one of the top two points (fig 3-22).



Figure 3-21. Subject looking up



Figure 3-22. Subject looking down

(1) The rule of thirds states that the ratio of the length of the smaller part of a line to the larger part of that line equals the ratio of the larger part of the whole line. This ratio of 2:3 is used to locate the placement of the center of interest. It works out that this point of placement is $\frac{2}{3}$ of the picture width from either side and $\frac{2}{3}$ the picture height from top to bottom (fig 3-23).



Figure 3-23. Using ratio of 2:3 to place center of interest

(2) The center of interest should never be located at dead center of the scene. This creates a hypnotic effect on the viewer. The viewer's eye goes directly to the center almost immediately and will stay there. The viewer will see only that one point. The rest of the photograph is lost. The command of the viewer's attention is also lost if the center of interest is placed near the edge of a photograph. This brings the viewer's gaze to the edge of the picture and might move his attention away from the picture completely.

e. When framing two people, center them (using the vertical and horizontal lines) from the rule of thirds (fig 3-24).

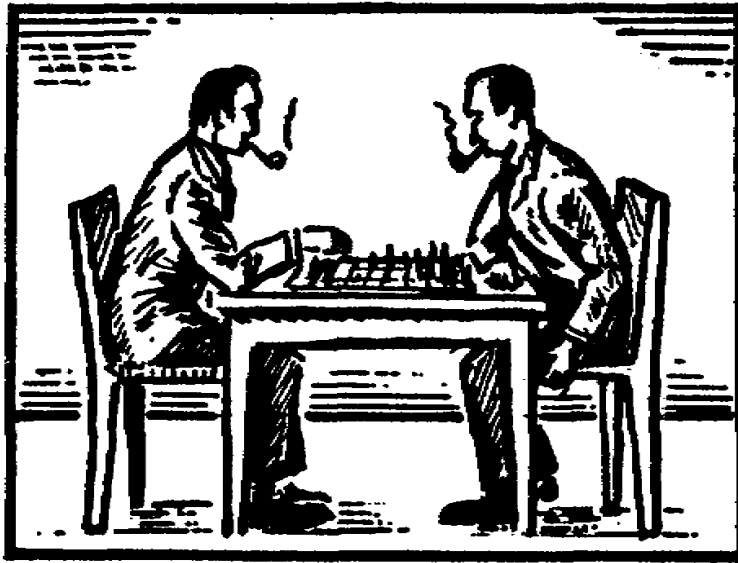


Figure 3-24. Framing and centering two people

f. Placing two subjects too close to each other or too close to the edge of the screen creates tension and a lack of balance. Note in Figure 3-25 the subjects are positioned along the edges of the screen and the most important central screen space is empty. The solution is either to move the subjects closer together or to change the camera angle to reduce the central space.



Figure 3-25. Too much screen space

Lesson 3
Learning Event 2
PRACTICE QUESTIONS

1. What is the effect of too little headroom?
 - a. Tension within the TV screen
 - b. Emphasizes confines of TV screen
 - c. Bottom-heavy effect
 - d. Oppressive overhang
2. What are natural cut-off lines in shooting persons?
 - a. Above waist, above knees
 - b. Compositional elements along border
 - c. Chin, bust, waist
 - d. Within safe action area
3. What is noseroom?
 - a. More room in direction of look
 - b. Space between eyebrows and mouth
 - c. Extreme closeup of face
 - d. Using a natural cutoff line
4. Do not place a subject at the edge of the screen unless
 - a. A dramatic effect is desired
 - b. Stability is required
 - c. Juxtaposition is desired
 - d. There is too little screen space
5. What happens if the talent is placed dead center in the screen?
 - a. Absolute symmetry
 - b. Boredom
 - c. Dramatic effect
 - d. Command of viewer's attention
6. What is the term if a prop appears to grow out of a talent's head?
 - a. Rule of thirds
 - b. Diagonal matrix
 - c. Special effect
 - d. Juxtapositioning

7. Why should you frame a subject near the center of the screen?
- a. To create tension
 - b. For stability
 - c. To reduce space
 - d. To avoid cluttered look
8. Why is the rule of thirds used?
- a. For dramatic effect
 - b. To frame two subjects
 - c. To locate placement of center of interest
 - d. To follow the action of a person or object

Lesson 3
Learning Event 2
ANSWERS TO PRACTICE EXERCISE

1. a, tension within the TV screen
2. c, chin, bust, waist
3. a, more room in direction of look
4. a, a dramatic effect is required
5. b, boredom
6. d, juxtapositioning
7. b, for stability
8. c, to locate placement of center of interest

Learning Event 3:

DESCRIBE THE RELATIONSHIP BETWEEN THE BASIC SEQUENCE AND CONTINUITY

1. Continuity is the logical development of scenes. Continuity means keeping the production simple, not cluttering it up with distracting shots, ideas, or dialogue. Continuity means developing a single theme, idea or concept. It requires a certain amount of simplicity and clarity. Simplicity does not mean insulting the intelligence of the viewer, but visually sticking to the point. Don't go off on a tangent.

a. In a television production every minute detail or every action can not be shown. It would take too much time and the viewer would have to sit through hours and hours of videotape. The mind of the viewer naturally fills in the details and time lapses if the production is well done. This filling in the blanks is called psychological closure. The foundation of good continuity is the basic sequence. To tell your story, you must combine a wide variety of shots to obtain smooth visual flow of the action. The basic sequence is a most important technique. Continuity can be relayed through the basic sequence. The basic sequence is a related series of shots and is a fundamental unit in continuity. It has three simple elements, i.e., the long shot, the medium shot, and the closeup (fig 3-26).



LS—LONG SHOT



MS—MEDIUM SHOT



CU—CLOSE-UP

Figure 3-26. Sequence showing continuity

(1) The long shot establishes the scene, environment, location or locale of the action. It is an overview or bird's eye view of environment (fig 3-27).

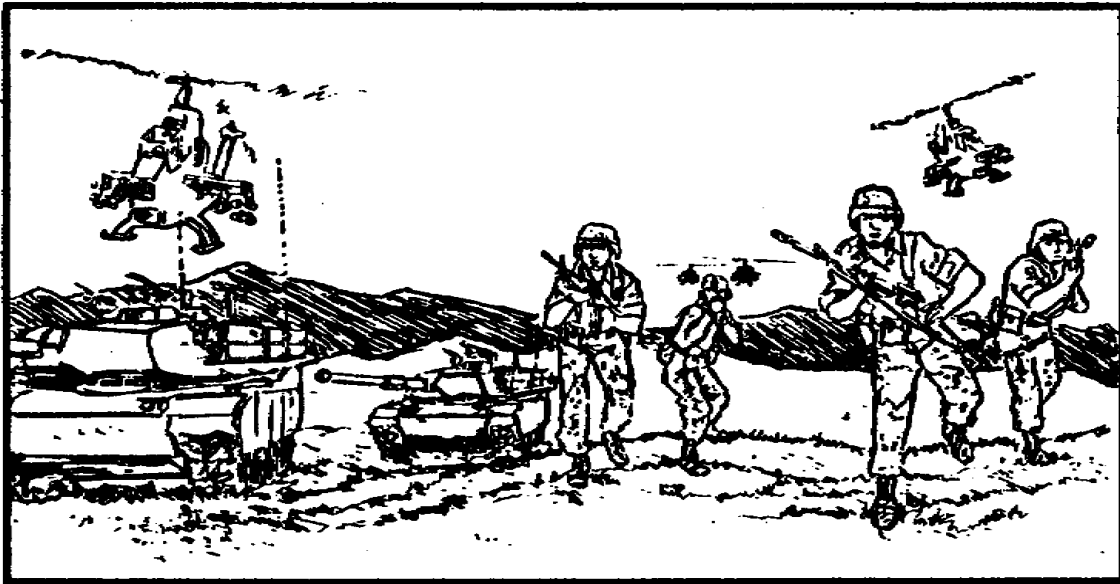


Figure 3-27. Long shot

(2) The medium shot is the midway transition. It moves in a little closer to the action, building up the subject, allowing audience to begin to zero in on the action (fig 3-28).



Figure 3-28. Medium shot

(3) The closeup shows detail of the subject matter, creates an atmosphere of intimacy and knowledge of the subject with the audience (fig 3-29).



Figure 3-29. Closeup

b. It is important that shots in the basic sequence and its variations should portray a story or idea that makes sense. You don't want to confuse the audience. The story or documentary is developed with the long shot, medium shot, closeup, and variations. Important or key ideas are not to be left up to the imagination of the audience.

(1) Every TV production is made up of one or more sequences. A sequence is a series of related scenes composed of the long shot, medium shot, and closeup technique. Each sequence is a complete story within itself. In recording activity, the need for sequences becomes apparent.

(2) Closeups are the most interesting and important shots in the basic sequence. Television has been described as a closeup medium because of the small screen size. What may look good on the motion picture screen may not look good on the television screen. Once you have obtained what you feel are the necessary introductory long shots and medium shots, move in for the closeups. Screen-filling closeups are extremely effective and interesting and are used for emphasis when a normal closeup might fail to achieve the vivid impression desired.

Lesson 3
Learning Event 3
PRACTICE EXERCISE

1. What is continuity?
 - a. Psychological closure
 - b. Absence of time lapse
 - c. Logical development of scenes
 - d. Area and viewpoint of the camera
2. What is the fundamental unit of a related series of shots?
 - a. Script
 - b. Closeup
 - c. Overview of the environment
 - d. Basic sequence
3. What are three elements of basic sequence?
 - a. Scenes, shots, and single photograph
 - b. long shot, medium shot, and closeup
 - c. Logical development, continuity, and psychological closure
 - d. Consecutive order, coherent relationship and main and subordinate parts
4. Which shot generally establishes the scene?
 - a. Long shot
 - b. Bird's-eye view
 - c. Locale shot
 - d. Key shot
5. What does a medium shot generally do?
 - a. Creates an atmosphere of intimacy
 - b. Portrays emphasis
 - c. Moves in a little closer to the action
 - d. Gives audience time to react
6. What is a sequence?
 - a. Series of related scenes composed of long shots, medium shots, and closeups
 - b. A relationship between main and subordinate shots
 - c. Shots building towards a climactic event
 - d. Use of simplicity, clarity, and refining

7. When you use the basic sequence, what should not be left up to the imagination of the audience?
- a. Long shots
 - b. Medium shots
 - c. Closeups
 - d. Key shots
8. Which shots are the most interesting and important in the basic sequence?
- a. Long shots
 - b. Medium shots
 - c. Closeups
 - d. Keyshots
9. Which shot shows detail of subject matter and creates an atmosphere of intimacy?
- a. Long shots
 - b. Medium shots
 - c. Closeups
 - d. Key shots

Lesson 3
Learning Event 3
ANSWERS TO PRACTICE EXERCISE

1. c, logical development of scenes
2. d, basic sequence
3. b, long shot, medium shot, and closeup
4. a, long shot
5. c, moves in a little closer to the action
6. a, series of related scenes composed of long shots, medium shots and closeups
7. d, key shots
8. c, closeups
9. c, closeups

Learning Event 4:
DESCRIBE CAMERA ANGLES

1. Choice of camera angles is fundamental to style. Position the camera for the best view of the talent or action at that moment. Camera angles have power. They can manipulate audience attention and reactions by controlling what the audience sees and how they see it. Changing angles can evoke a definite attitude or emotion. The general rule states: When shooting a new scene, change the size of the image, or change the angle, or both. A change of image size only would be a long shot, a medium shot, and a closeup from the same angle. A camera angle is defined as the area and viewpoint recorded by the lens. Placement or positioning of a camera determines the area to be included in the picture and the viewpoint from which the viewer will observe. Do not forget the relationship between camera angle and viewer. Four factors determine the camera angle; camera height, angle of subject, position of camera and image size.

a. Audience reaction may be manipulated by the camera height.

(1) A normal camera angle is eye level with the subject. A normal camera angle is generally not as interesting as a high angle or low angle shot.

(2) In a high angle shot, the camera (and thus camera lens) is positioned above the eye level of a subject or above an object. The camera is looking down at the action or subject. This gives the illusion of "humbling" the subject, reducing him in size or stature. It can also give the illusion of slowing down motion. Psychologically, a high angle may suggest a loss of power or even loneliness. To show a subject in a position of inferiority, have the camera shoot down on the subject (fig 3-30).



Figure 3-30. Shooting down on the subject

(3) In a low angle, the camera is below eye level of the subject. The camera is low to the ground, looking up at the subject. The low angle dramatizes height and appears to speed up motion. This creates the illusion that the subject is powerful and dominant. Advertising often uses this angle on products for the psychological effect (fig 3-31).

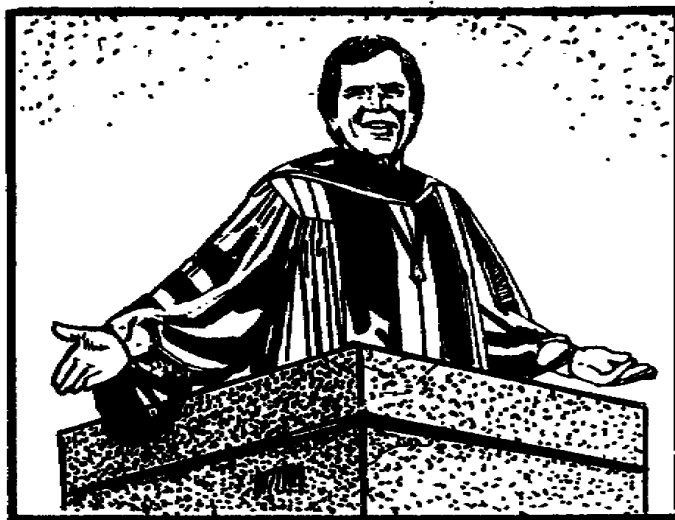


Figure 3-31. Shooting up at a subject

b. The camera position determines several angles.

(1) The flat angle or head-on shot should not be used, in general, when the subject is still or stationary. There will be no illusion of depth. The flat angle can be used when the subject is running at you, head-on, toward the camera. This angle can carry the motion well (fig 3-32).

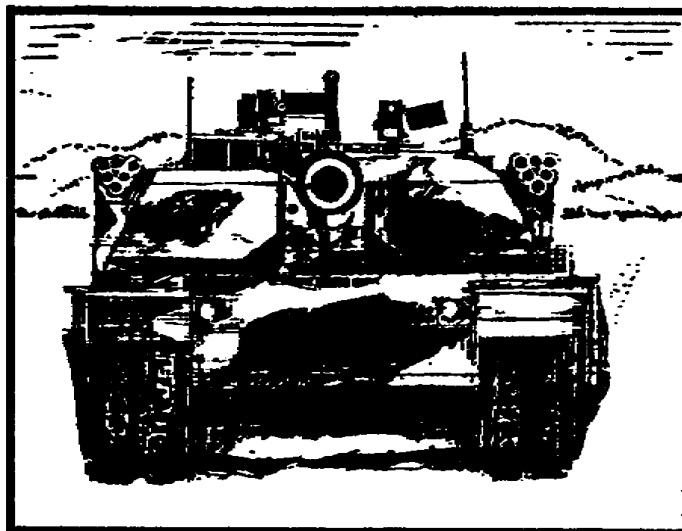


Figure 3-32. Flat angle or head-on shot

(2) The side angle is valuable for giving depth and perspective to people, objects, action. Imagine how powerful a racing thoroughbred appears from a low angle, side angle (fig 3-33).

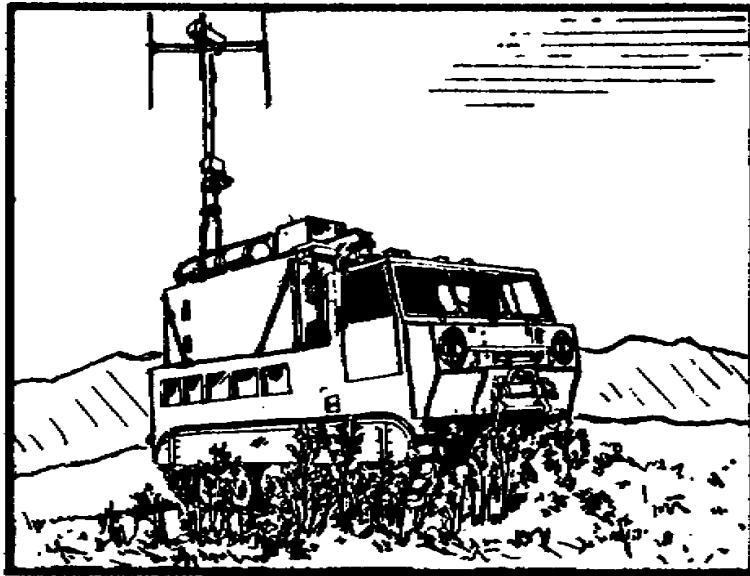


Figure 3-33. Side angle shot

(3) The reverse angle shows the viewer opposite viewpoints (fig 3-34).



Figure 3-34. Reverse angle shot

(4) A canted angle is used very little in the military. This is accomplished by tilting the camera on its horizontal axis (fig 3-35). This angle suggests instability and excitement. Use sparingly.

c. Subject angle affects camera angle.

(1) Subject or object viewed head-on shows height and width, not depth. It has the appearance of some flat cartoon figures. That tall building viewed from an angle appears three-dimensional.

(2) A human face is best when the subject is turned 45 degrees to the camera. If lighting is good, the face, side of face, and eyes are fully on display (fig 3-36). In other words, if the camera is at the side of the subject or object is at an angle, there is more three-dimensional effect, or depth. This three-dimensional effect is also supported by good lighting and good color.

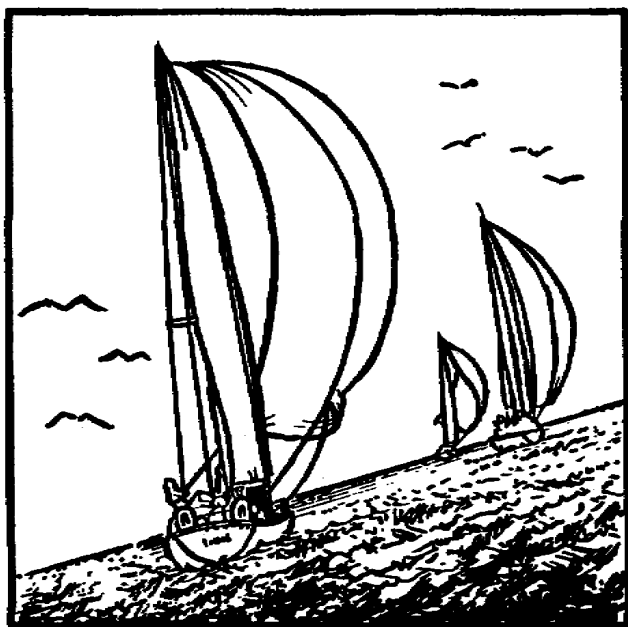


Figure 3-35. Canted angle shot



Figure 3-36. Excellent facial shot

(3) Overlapping planes is an effective way to increase the three-dimensional effect (fig 3-37).

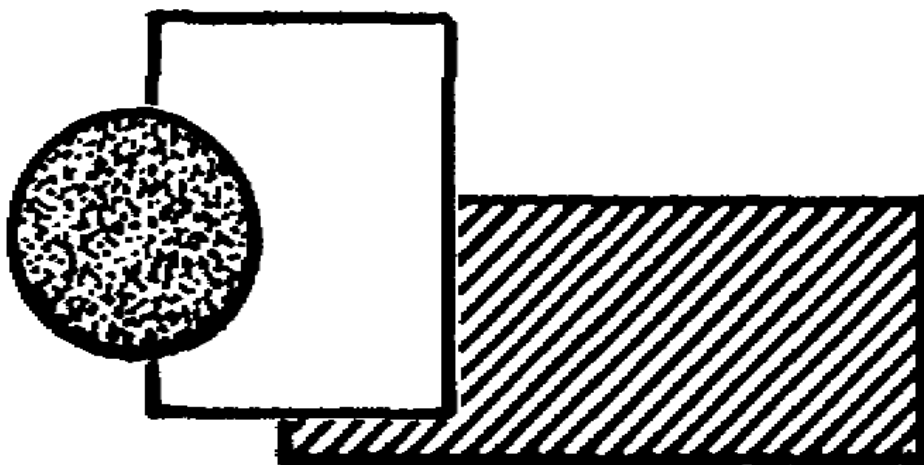


Figure 3-37. Overlapping planes

d. Subject size or image size affects the camera angle. When the camera is close to the subject, the image will be larger, and when the camera is further away from the subject, the smaller the image or subject size. A good way to think of change of image size is long shot, medium shot, and closeup (fig 3-38). However, this is not inclusive, there are many types of shots.



Figure 3-38. Changing image size

e. Often camera angles are described in shots. These would include the two-shot, the three-shot group shot, the over-the-shoulder shot, and the reaction shot, the cut-in shot and the cut-away shot.

(1) A two-shot is two talents, e.g., a boy and a girl, the good guy and the bad guy. There are many types of two-shots. The most interesting is the two-shot in which the subjects sit or stand facing each other (fig 3-39). One of the two may dominate due to lighting, a more favorable angle to the lens, or better position or one is physically taller.



Figure 3-39. Two-shot camera angle

(2) A three-shot defines the type of scene. It also identifies the number of people; this aids in further identifying what is expected (fig 3-40).



Figure 3-40. Three-shot camera angle

(3) An over-the-shoulder shot (fig 3-41) is an effective shot, establishing a relationship between persons; it enhances the depth in the shot.



Figure 3-41. Over-the-shoulder shot

(4) A cut-in shot cuts into a portion of a scene (fig 3-42).

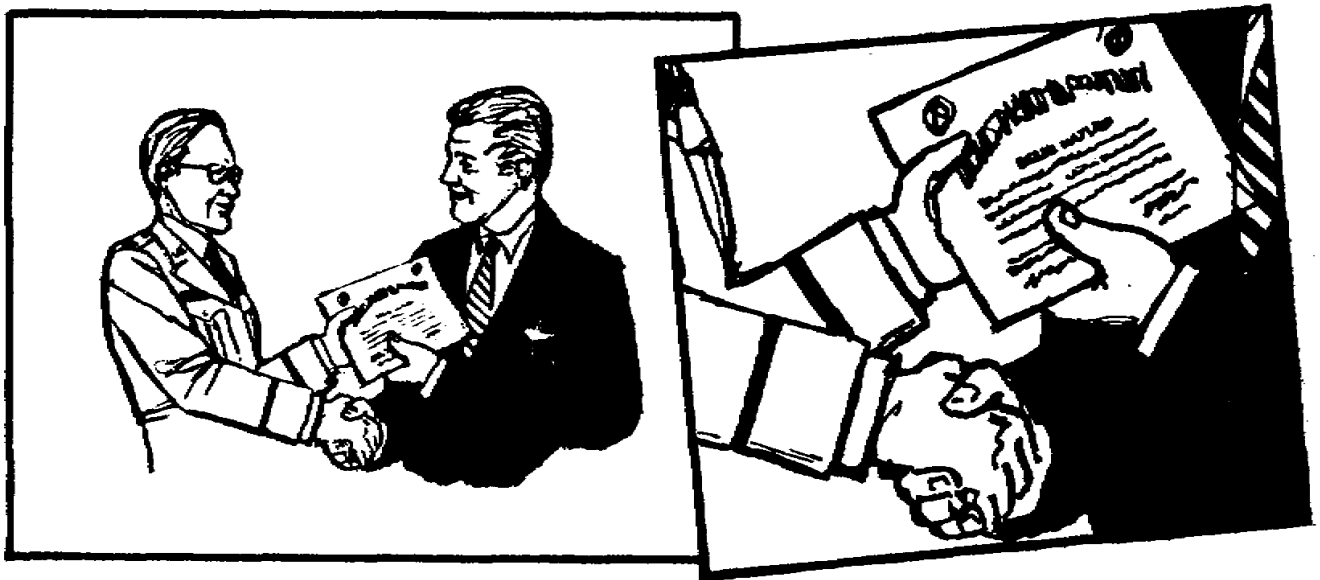


Figure 3-42. Cut-in shot

(5) A cut-away shot is a secondary action elsewhere, a few feet, miles or another location (fig 3-43).

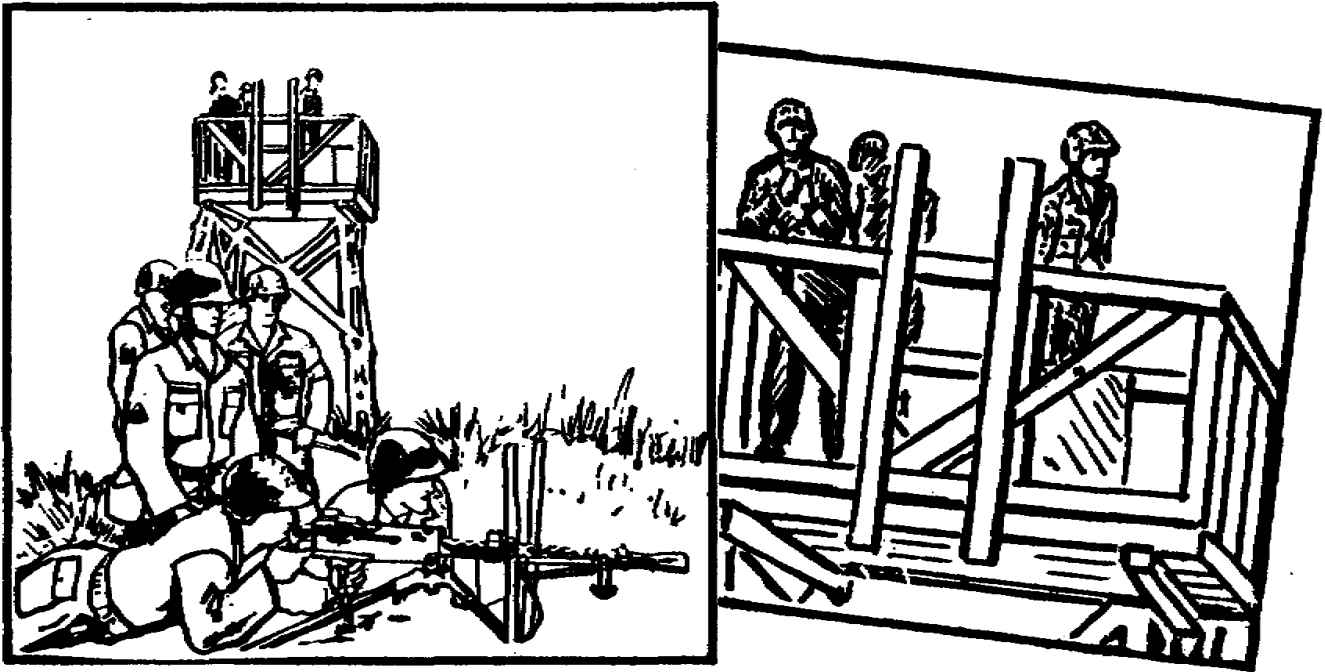


Figure 3-43. Cut-away shot

(6) A reaction shot is a shot of a player reacting. He may be reacting to what someone says or does, or react to some action, such as a tornado (fig 3-44).

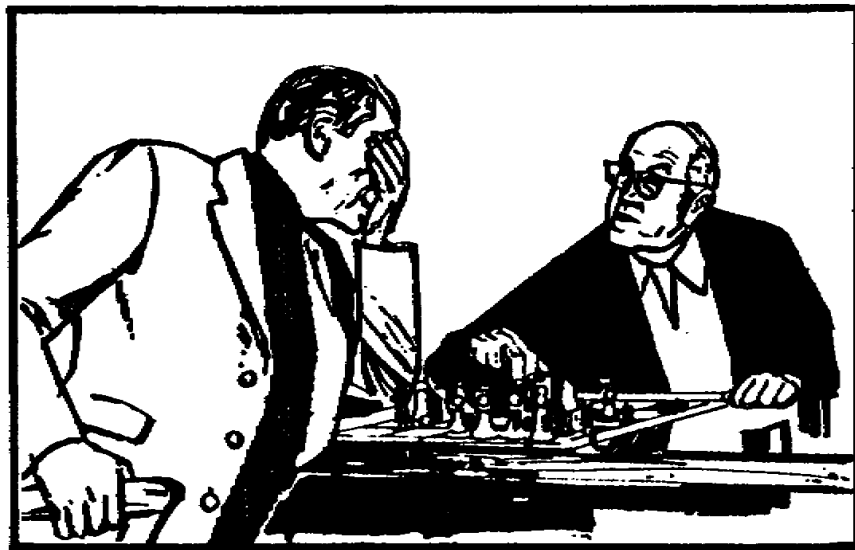


Figure 3-44. Reaction shot

g. Camera angles can also be defined in terms of objective and subjective.

(1) A subjective camera angle gives the viewer the illusion of personal experience. The camera acts as the eyes of the audience. The viewer feels as if he has traded places with the talent in the production and sees the event through the talent's eyes. The camera acts as the eyes of the audience. Think of the personal involvement of the subjective camera on the roller coaster. This gives the audience the illusion that he is in the scene. In other words, the camera exchanges places with the talent (fig 3-45).

(2) An objective camera angle gives the viewer the illusion that he is on the sidelines (fig 3-46).



Figure 3-45. Subjective camera angle



Figure 3-46. Objective camera angle

Lesson 3
Learning Event 4
PRACTICE EXERCISE

1. Which of the following defines camera angle?
 - a. Relationship between viewer and camera
 - b. Illusion of depth
 - c. What the audience sees
 - d. Area and the viewpoint recorded
2. Which may be directly related to camera height?
 - a. Flat angle
 - b. Audience reaction
 - c. Point of view
 - d. Horizontal axis
3. A normal camera angle is:
 - a. Head on
 - b. A medium shot
 - c. Eye level with the subject
 - d. Valuable for showing depth
4. Where is the camera positioned for a high angle shot?
 - a. Above eye level of a subject
 - b. Below eye level of a subject
 - c. Tilted on its horizontal axis
 - d. In a helicopter
5. What is another term for head-on shot?
 - a. Low angle
 - b. Straight angle
 - c. Subjective angle
 - d. Flat angle
6. What may a low angle suggest?
 - a. Power
 - b. Loss of power
 - c. Instability
 - d. Excitement

7. Why is a side angle valuable?
 - a. For depth and perspective
 - b. For height and width
 - c. For personal involvement
 - d. Easier to light
8. What does reverse angle show?
 - a. Instability
 - b. Perspective
 - c. Opposite viewpoint
 - d. Reverse image
9. There is more depth if:
 - a. Camera is tilted on its horizontal axis
 - b. Object is at an angle
 - c. The shot has detail
 - d. It is over-the-shoulder
10. Which angle is best for depth in a face?
 - a. Head-on
 - b. 45 degrees
 - c. Reverse angle
 - d. Longshot
11. What is another word for image size?
 - a. Proportionate dimension
 - b. Graphic dimension
 - c. Overlapping planes
 - d. Subject size
12. The further away the camera:
 - a. The smaller the image size
 - b. The larger the image size
 - c. No change in image size
 - d. Gives the viewer the illusion he is on the sidelines
13. A cut-away is:
 - a. Switch pan
 - b. Subjective angle
 - c. Secondary action
 - d. Dominate due to lighting

14. Which angle gives the viewer the illusion of personal experience?
- a. Objective
 - b. Subjective
 - c. Over-the-shoulder
 - d. Reaction shot

Lesson 3
Learning Event 4
ANSWERS TO PRACTICE EXERCISE

1. d, area and the viewpoint recorded
2. b, audience reaction
3. c, eye level with the subject
4. a, above eye level of a subject
5. d, flat angle
6. a, power
7. a, for depth and perspective
8. c, opposite viewpoint
9. b, object is at an angle
10. b, 45 degrees
11. d, subject size
12. a, the smaller the image size
13. c, secondary action
14. b, subjective

Learning Event 5:

DESCRIBE CAMERA SKILLS AND PRINCIPLES OF COMPOSITION

1. Composition is the creative arrangement of the subject, objects, and action. Good composition will stimulate a positive viewer response. It is an artistic blending of shape, forms, and patterns. Composition is the heart of production techniques. Composition, good composition, should give the scene an emphasis and should manipulate viewer response. You as director cameraman need to train your eyes and mind to work together to evaluate your scene's composition. Why should it be necessary to arrange the subject or objects in a picture? Why not point the camera in the general direction of the action? The explanation is this: once a frame has been placed around a scene, it matters very much how the subjects/objects of that scene are arranged within the frame.

a. There is a main point of interest in every picture. If the picture is not composed, the eye is distracted from this center of interest. There goes the audience interest. If a picture is correctly composed, it is balanced. There are no disturbing empty spaces and the eye does not have to wander over the scene looking for a focal point. There are no hard and fast rules that apply to something as creative as composition. What is good composition to one person may not appeal to another. However, there are classic guidelines. Strict devotion to these guidelines would result in stereotype camera style. Combine these principles with ingenuity and expression, and the results will be creative and stunning. Artistic composition is improved when you develop your ability to observe. The following are guiding principles to help you develop an eye for good composition:

1. Illusion of depth
2. Movements
3. Center of interest
4. Balance
5. Lines
6. Forms
7. Mass

The cameraman should master these principles of composition.

b. An important principle of composition is achieving the illusion of depth. The television screen has a horizontal format. That means the screen is 3 units high to 4 units wide. It is wider than it is high, i.e., the format is horizontal as opposed to vertical. The TV screen has no depth, only height and width.

(1) The illusion of depth must be created or the production will look flat; this will be disconcerting, or not realistic to the viewer and you will lose your viewer.

(2) The illusion of depth can be created by use of overlapping planes. This requires positioning of subjects and objects in overlapping foreground, middle ground, and background (fig 3-47).

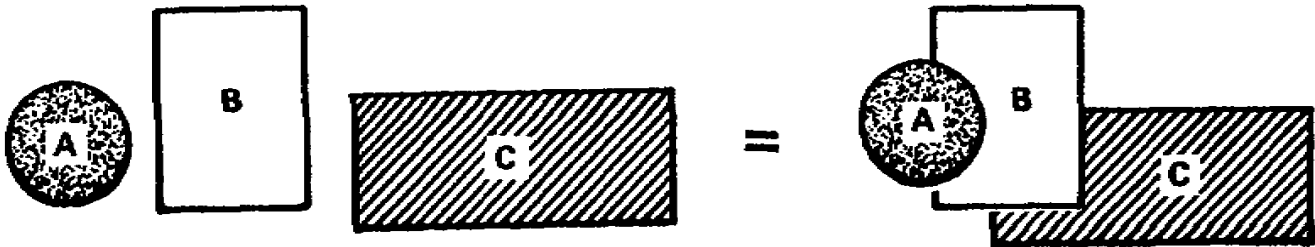


Figure 3-47. Overlapping planes

c. Compositional movements are a particularly important aspect of motion picture and television photography. Movements may be only suggested in still photography. Movements may be suggested and shown in motion pictures. Movements can have a psychological effect on the viewer. Movements may change during a shot, or a sequence of shots, to match the change of mood or pacing. Meanings of various compositional movements may be described as follows:

(1) Horizontal movements (fig 3-48) suggest momentum or impetus. Reading from left to right allows the audience to follow left to right with little effort. Right-to-left is stronger, because it goes against the grain. Right to left movement is stronger, for opposition shots such as the good guy moving toward the bad guy.

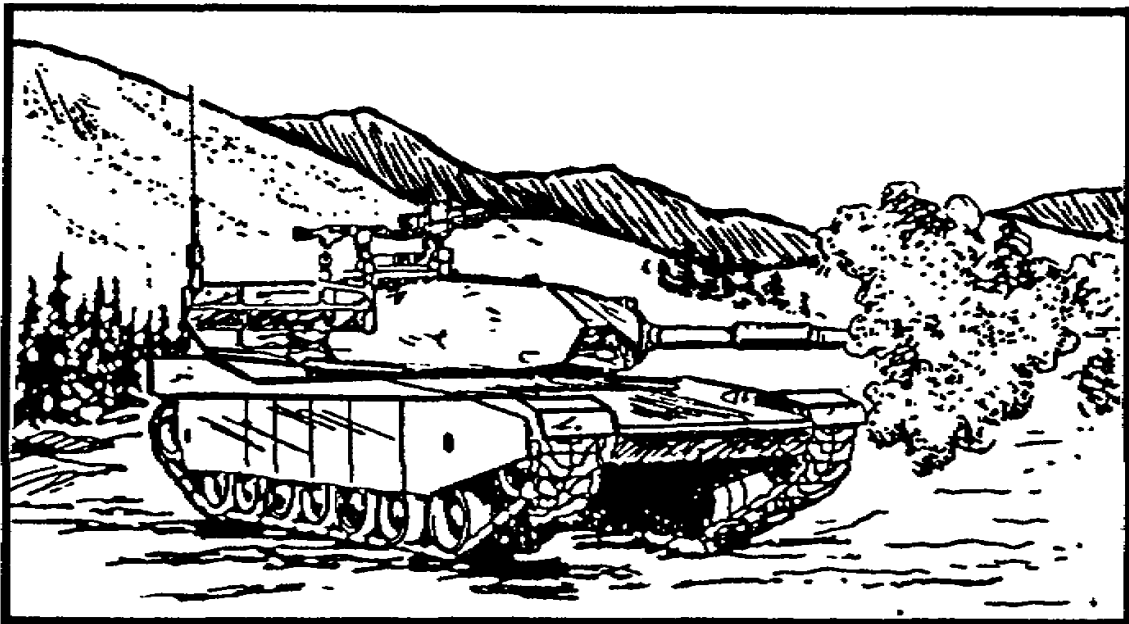


Figure 3-48. Horizontal movement

(2) Upward-rising movement or ascending vertical movement suggests elation or freedom from earth weights. Free flight may be inferred by an upward-rising missile (fig 3-49).

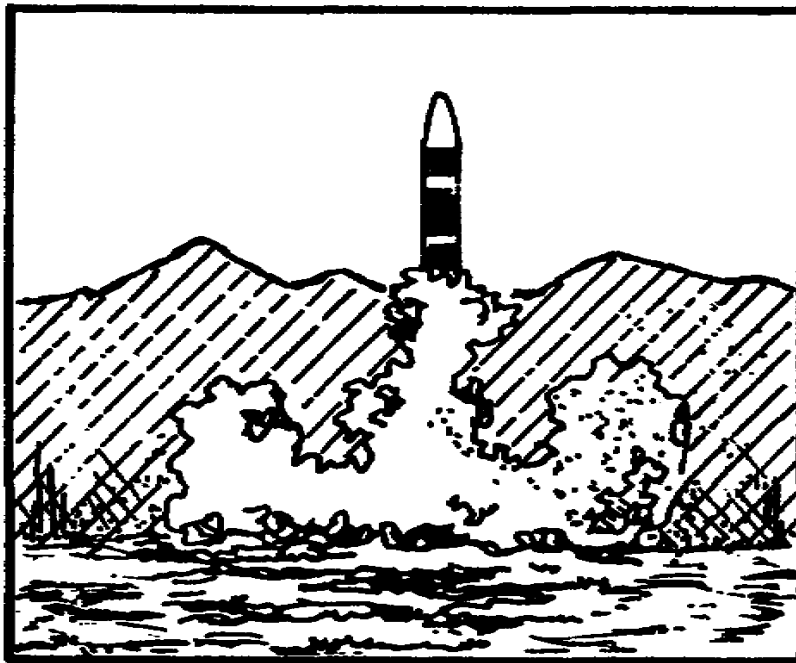


Figure 3-49. Ascending vertical movement

(3) Movement directed downward, a descending vertical movement, may imply impending doom, e.g., an avalanche (fig 3-50).



Figure 3-50. Descending vertical movement

(4) A diagonal movement is most dramatic; it gives the impression of overcoming obstacles by force in battle scenes. Climbing a mountain should be shown by a left-to-upper-right diagonal. Crossed diagonals suggest opposing forces; an example would be crossed swords (fig 3-51).

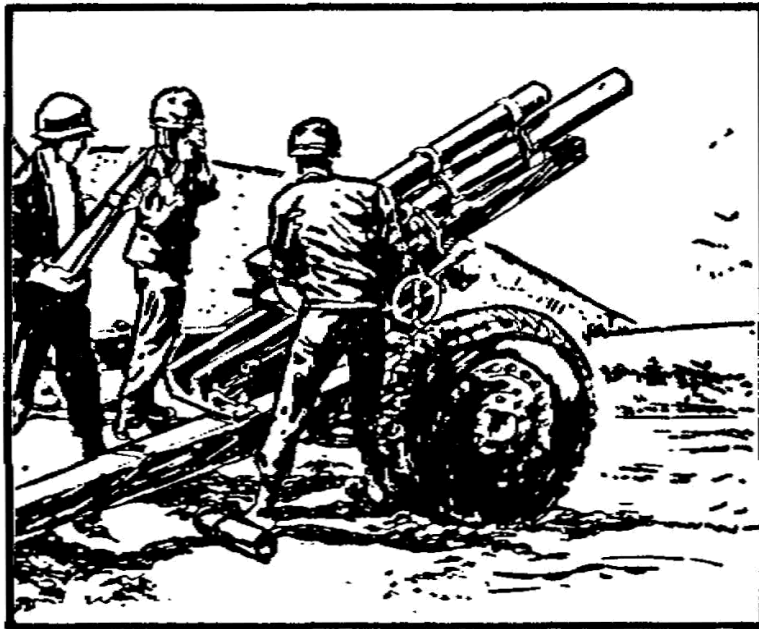


Figure 3-51. Diagonal movement

(5) Curved movement such as a curved snake suggests fear (fig 3-52).

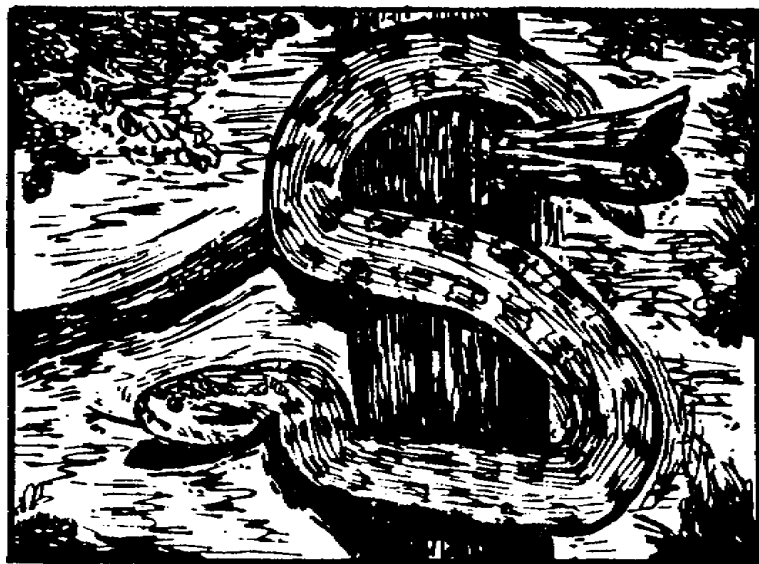


Figure 3-52. Curved movement

(6) Movement that changes direction attracts the eye of the viewer more than movement in one direction.

d. Shape is an important concept in composition, used to create balance or tension. Use the contour of an object or subject to your advantage. A single shape against a plain background can be striking. A dark form against a light background adds contrast to the scene. Several shapes, combining in a cohesive whole, result in a strong picture. Avoid scattered, non-unified forms.

(1) Regular shapes appear heavier than irregular shapes.

(2) The location of a shape inside the frame can change the picture weight. If an object or subject is lower in the frame, this implies heaviness. Higher in the frame renders a feeling of lightness. If the object or subject is centered, there is stability.

e. Lines lure the viewer's eye to the center of interest.

(1) A vertical line implies formality or dignity.

(2) Horizontal lines imply breadth or inactivity.

(3) A curved line suggests rhythm.

(4) Diagonals imply conflict.

(5) Well-defined lines are very strong, whereas a curved line is softer. The well-defined line suggests excitement, whereas the softer line suggests peacefulness.

(6) Irregular lines can be more interesting. You will need to discern what form and what line to use to best emphasize the center of interest.

f. Texture adds realism to a subject or object, adding character or special qualities. Closeups best reveal texture.

g. Depth can be suggested by proper use of the foreground and background. Whatever is in the foreground is usually dominant. For a different effect, change this dominance. Some variations of the foreground-background effect are the over-the-shoulder shot and the foreground positioning, i.e., positioning talent in foreground specifically to frame background elements.

h. A precise balance results in formality. No balance is unstable. Informal balance is generally preferred, unless you want either a formal or wild effect. There should be balancing in planes in depth, e.g., foreground and background, balance in perspective and balance in angles.

Lesson 3
Learning Event 5
PRACTICE EXERCISE

1. What is composition?
 - a. No disturbing spaces
 - b. Arrangement of the subject in the picture
 - c. Hard and fast rules that apply to creativity
 - d. Pleasing array of lines
2. What are some basic principles of composition?
 - a. Illusion of depth, center of interest, balance
 - b. Horizontal format, height and width, balance
 - c. Long shot, medium shot, and closeup
 - d. Horizontal, vertical, and diagonal
3. Horizontal movements suggest:
 - a. Travel, momentum
 - b. Aspiration, growth
 - c. Heaviness
 - d. Opposing forces
4. Diagonal movements suggest:
 - a. Crushing power
 - b. Overcoming obstacles by force
 - c. Swifttness
 - d. Relentlessness

Lesson 3
Learning Event 5
ANSWERS TO PRACTICE EXERCISE

1. b, arrangement of the subject in the picture
2. a, illusion of depth, center of interest, balance
3. a, travel, momentum
4. b, overcoming obstacles by force

LESSON 4
DESCRIBE LIGHTING TECHNIQUES FOR A FIELD
TELEVISION PRODUCTION

TASK

Describe aesthetics of lighting techniques on location, and safety requirements during a field television production.

CONDITIONS

Given information relating to lighting techniques during a field television production.

STANDARDS

Demonstrate competency of the task skills and knowledge by correctly responding to 85 percent of multiple-choice test covering aesthetics of lighting techniques on location and safety requirements for lighting of a field television production.

REFERENCES

None

Learning Event 1:

DESCRIBE LIGHTING PRINCIPLES AND TECHNIQUES

1. Good lighting techniques are critical to all TV productions. Lighting is much more than aiming a single light source. In fact, a single light, straight on, will give a flat picture, i.e., no depth. To achieve the desired result, TV production personnel must be aware of technical and artistic reasons for lighting.

a. Technically, TV cameras require a certain level of light, except for those with charged-coupled device (CCD) capabilities. The ENG/EFP cameras you will be using in the field will not function without proper light. There must be light sufficient to reproduce detail and resolution. Technically, the camera requires: (1) enough light for the camera to function and, (2) enough light for detail. There is a minimal light level necessary for technical operation; on the other hand, there is a maximum level of light the camera will accept.

b. Artistically, lighting must create the illusion of depth, space, and form; ultimately, a sense of reality. Good lighting can simulate time of day, weather, environment, atmosphere or style. Distracting features can be reduced and appealing features enhanced.

2. Television is a two-dimensional medium. That is, television shows height and width. Lighting will add the depth needed. With depth, a scene appears three-dimensional. This illusion of depth is further enhanced by proper use of camera angle, set design, color, placement of talent and set pieces. Lighting alone does not provide an illusion of depth, but without it your scene will have an amateurish flat, look.

3. Light can be described as either hard or soft.

a. Hard light is highly directional; a single stream of light pointing in a definite direction (fig 4-1). The hard light defines features well; however, the result may be harsh (fig 4-2). Hard lighting casts definite shadows which need to be diffused by another light source. Texture and form are revealed under a hard lighting source. Hot spots are a problem with hard light, causing glare.

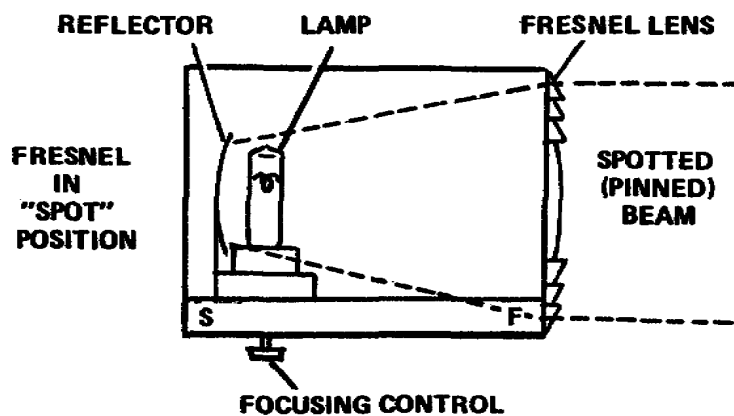


Figure 4-1. Fresnel light in the "spot" position produces hard light



Figure 4-2. Effect of hard light

b. Soft light is diffused or scattered (fig 4-3). It is not highly directional like hard light, but nondirectional. Soft light does not create distracting shadows. Misuse of soft light will make the subject look flat, i.e., no depth. Soft, directionless light will spill over into an undesired space. It is difficult to control soft light.

c. Dense shadows can be reduced with a soft light source (fig 4-4). Remember, you do not want to eliminate shadows entirely. A good way to describe lighting is the proper use of light and shadow in proportion to each other. Good lighting means good contrast.

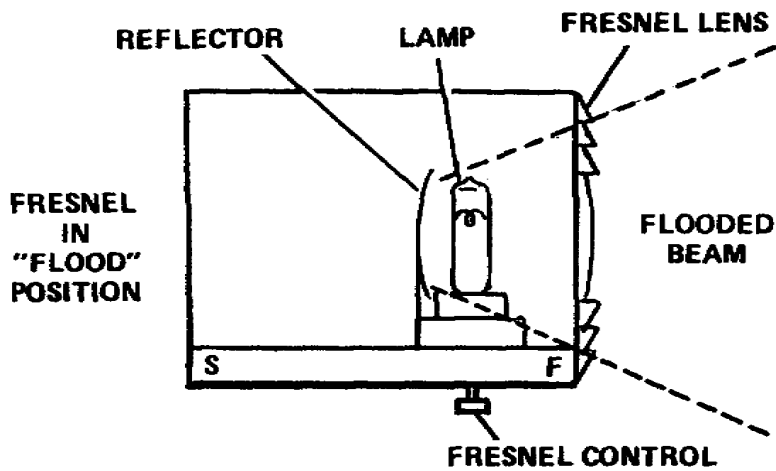


Figure 4-3. Fresnel light in "flood" position produces soft light



Figure 4-4. Effect of soft light

4. Direction is another part of lighting. When we talk of direction we mean the direction of light falling on a subject, not the direction the subject is facing. When you alter the direction of the light, you alter the appearance of the subject or object you are lighting. Lights may be positioned in front of, in back of, or to the side of an object or subject. With each new position, the appearance of the subject is altered.

a. Imagine you are using a clock and the light is positioned at 6 o'clock and the subject is in the center (fig 4-5). This is frontal lighting.

- (1) The appearance of the subject is flatter
- (2) Texture is diminished
- (3) Frontal lighting creates needless shadows

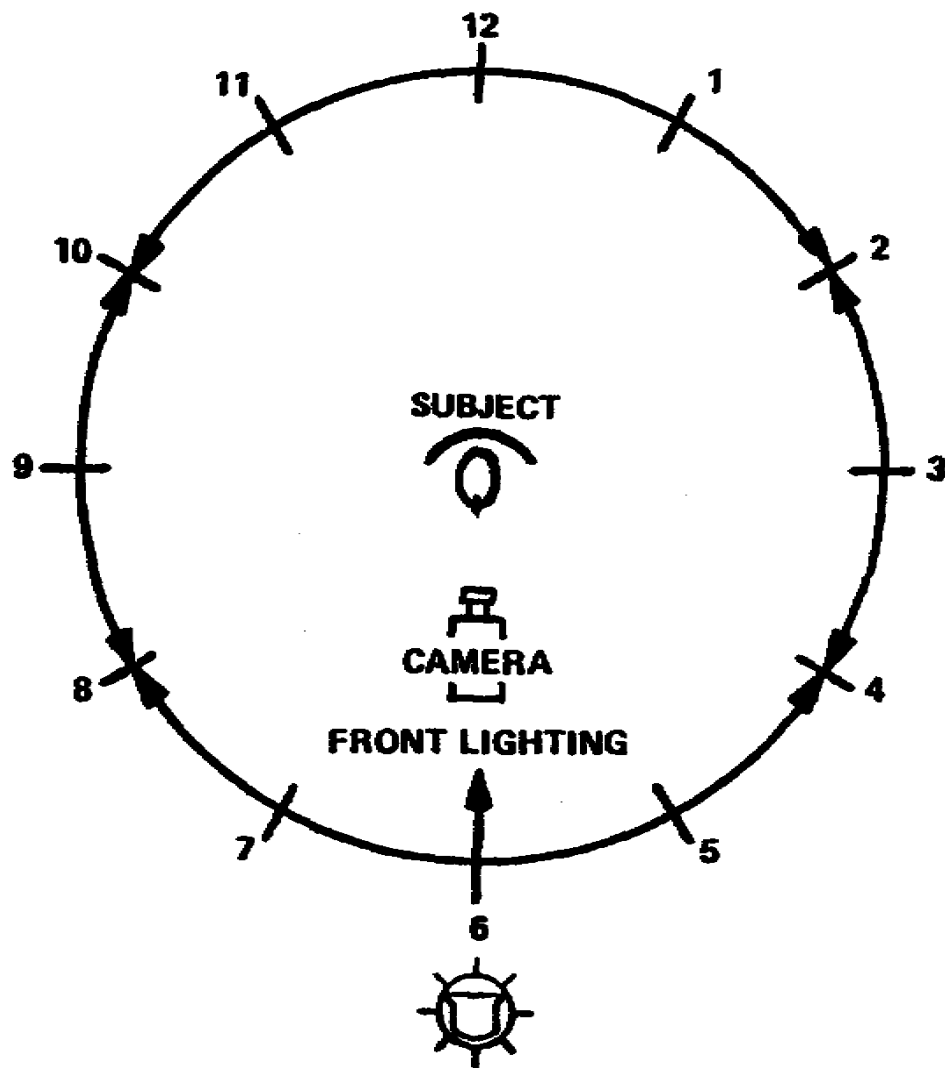


Figure 4-5. Frontal lighting

b. Back lighting has different results. The back light will silhouette sides of the subject (fig 4-6). This can cause a high contrast between highlights and shadows.

(1) A back light outlines all or part of the subject. This rim of light appears to separate the subject from the background.

(2) It can illuminate areas that are in shadows, although that is not the purpose.

(3) If the back light is too high the result will be stilted.

(4) Rimming caused by a back light should be used appropriately (fig 4-7).

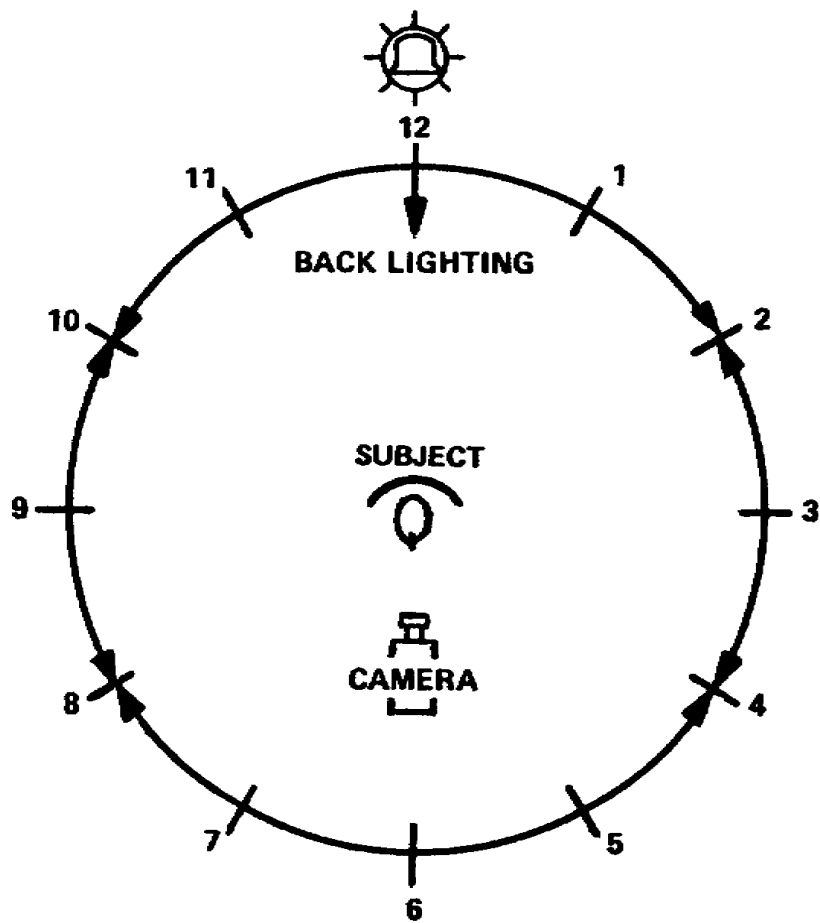


Figure 4-6. Back lighting



Figure 4-7. Rimming or halo effect by using back lighting

c. Side lighting, often called edge lighting, is to the side of the subject or object (fig 4-8). Using a side light in conjunction with the front light will reduce the harsh shadow areas. General shape will be emphasized if the light is at the 3 o'clock position or the 9 o'clock position. Side lighting can caricature as well as emphasize detail and distort it.

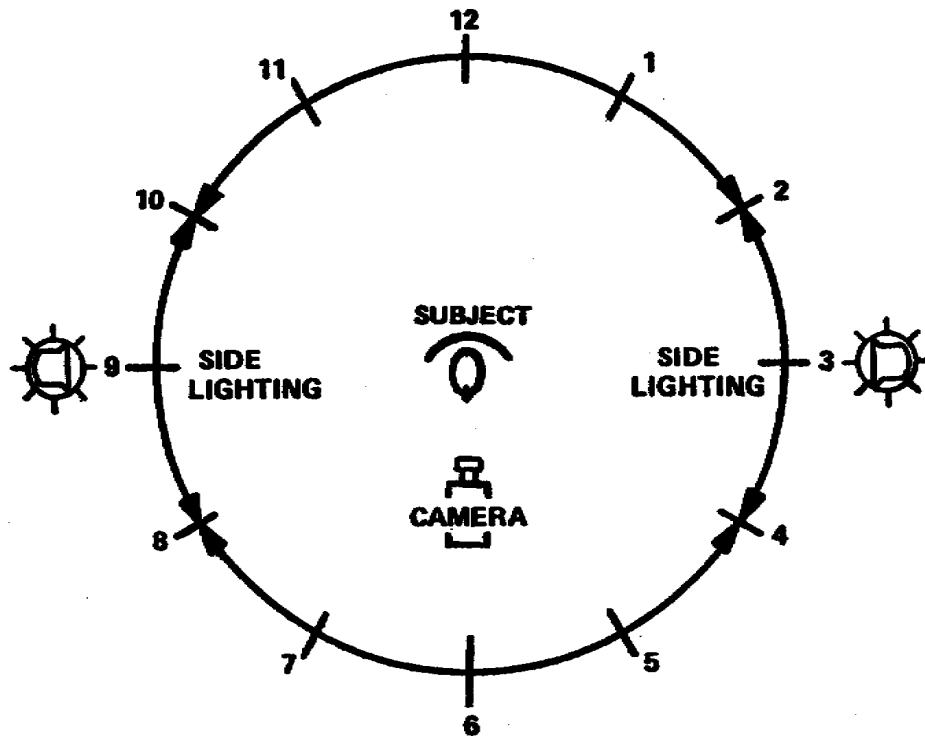


Figure 4-8. Sidelighting

5. Intensity is varied by changing distance between light and subject or object. Intensity can be changed by using another size light or by using dimmers. However, too much dimming will affect the color quality.

6. Do not forget shadows.

a. Avoid positioning the talent directly in the sun. The sun should be behind the camera. Shady areas with indirect lighting are good for outdoor shooting. An even distribution of light cuts down on too much contrast.

b. Lighten the very deep shadows with fill lights. If the overall baselight is not too low, you should not have a problem with sharp difference between the shadows and the lit areas.

7. There are three main lights, key, back, and fill, used in three-point lighting. The first is the key light.

a. The key light is the principal source of directional illumination falling upon a subject or area. As the main or source light, the key should dominate whatever its direction. The key light develops desired shadows.

(1) The normal position of the key light is in front of and to the side of the subject (fig 4-9).

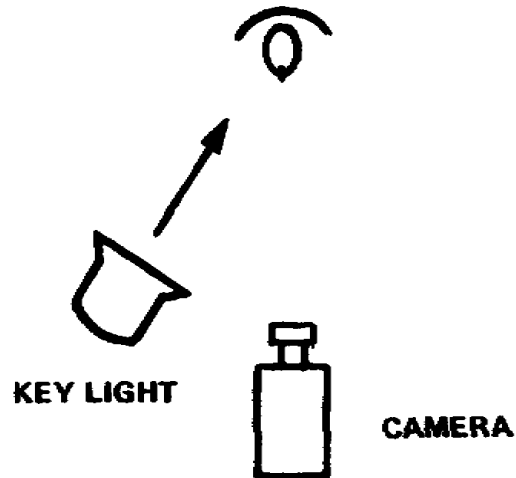


Figure 4-9. Key light

(2) Position and angle of key can be other than in front of and to the side. The choice of position and angle depends on the emphasis and appearance desired (fig 4-10).

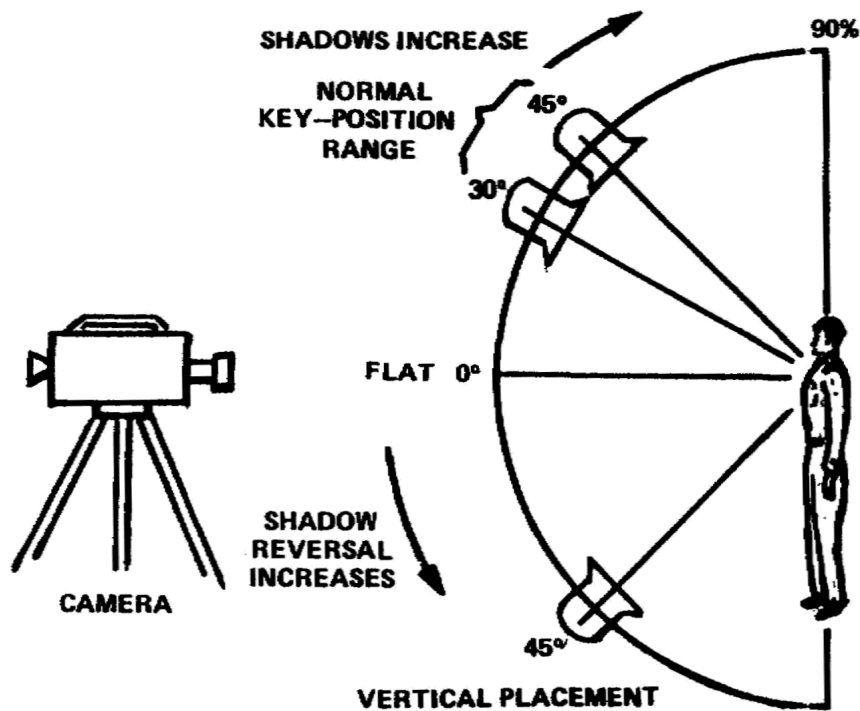


Figure 4-10. Key light positioning

(3) Because it is the strongest light, the key light gives well-defined modeling of features. However, a soft light will be required to subdue harshness and unwanted shadows.

(4) Key light is a hard light; it is easily controlled and beam is easily focused.

(5) Key light is the basis for facial lighting. The eyeline is an imaginary line projecting out at eye level at 90 degrees angle (fig 4-11). Set key light 20 degrees to either side of eyeline.

(6) If there is too little key light, both sides of the subject's nose will have shadows.

(7) If there is too much key light, the contrast between light and shadow will be excessive.

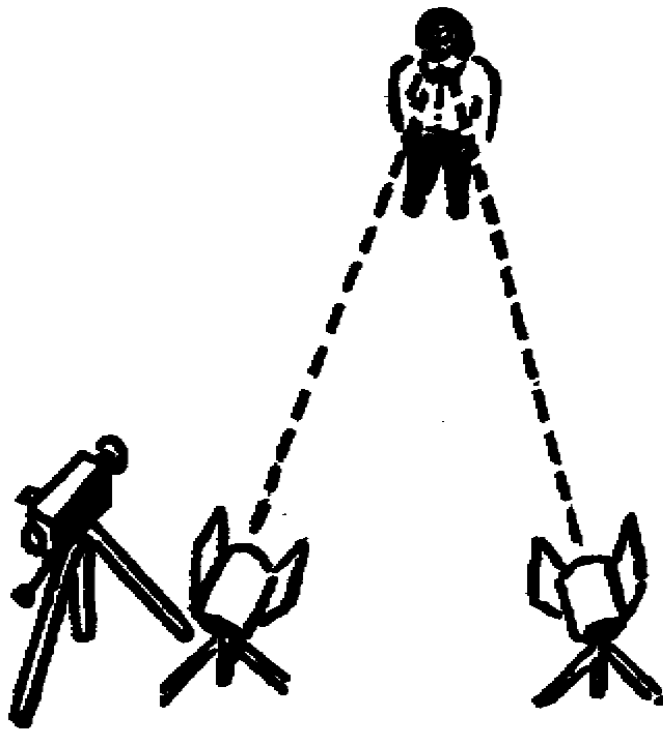


Figure 4-11. Key lighting using the eyeline concept

b. Back light is behind the subject and pointing towards the camera (fig 4-12).

(1) Hard light is generally used for a back light.

(2) Back light adds a rim or halo. This rimming separates subject from background which gives the illusion of depth.

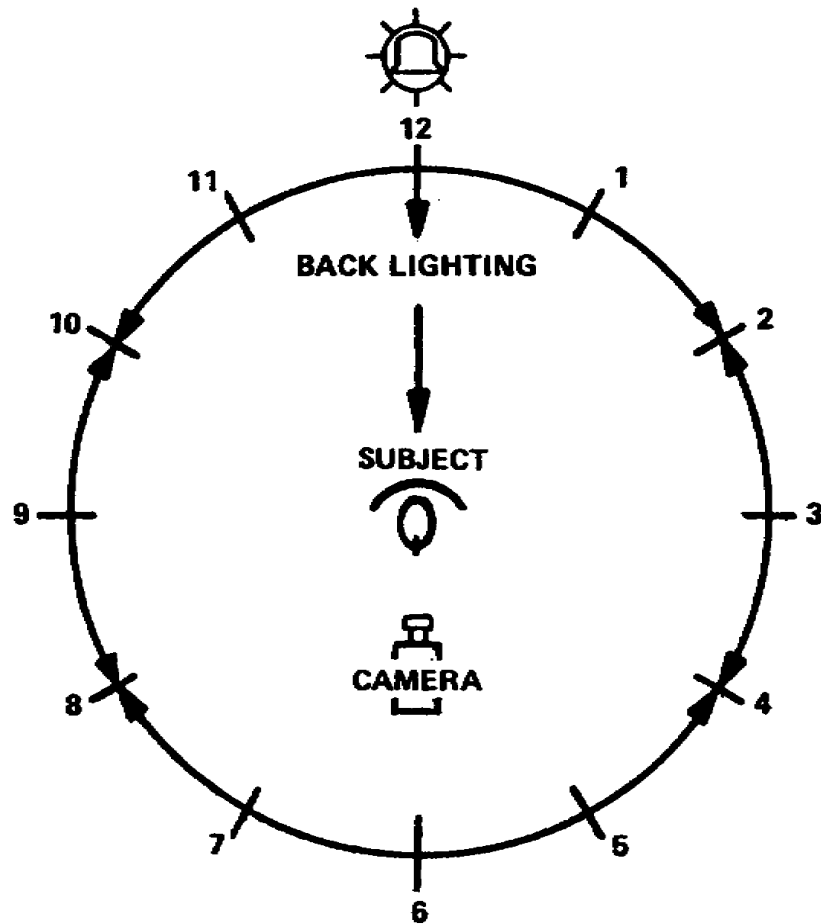


Figure 4-12. Back lighting position

(3) The camera is at 6 o'clock position and subject is in center. Backlight should be positioned at 12 o'clock at a 45-degree angle.

(4) Too much back light causes a halo effect.

(5) With too little back light it appears that the subject blends into the woodwork.

c. Fill light softens undesired shadow densities. Reduce contrast between shadows and light. Supplementary illumination reduces shadow or contrast between highlights and shadows (fig 4-13).

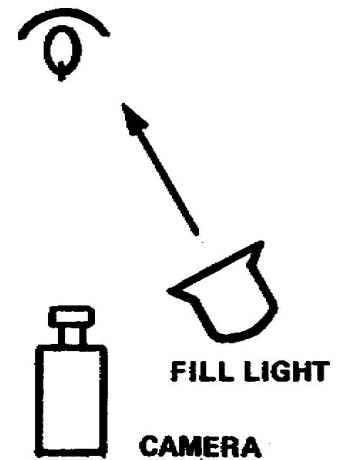


Figure 4-13. Fill light

(1) A fill light is generally a soft light.

(2) Position fill light at 30 degrees.

(3) Too much fill subdues facial features, e.g., cheeks, nose, and area above eyes. Subject's face will look flat (fig 4-14).

(4) Too little fill and the key will dominate; the effect may be a harsh look or be shadowy.



Figure 4-14. Fill intensity too high

8. Sunlight changes throughout the day. The position of the sun changes constantly with the hour. Remember the sun's direction and elevation when videotaping.

a. If the area is relatively small it is possible to supplement sunlight, picking out certain detail, creating patterns of light and shade.

(1) For many outside shots, there is no way to change the natural lighting conditions. You may have to change camera viewpoint or shoot from another location offering better lighting angles.

(2) If it is bright and the area is large, supplementary lighting may be ineffectual. The large daytime areas will swallow up even larger lights. On a bright day, in larger areas, it is difficult to fill in the daytime shadows.

(3) For closer shots, tungsten halogen lamps may be used as shadow fillers. However, a high power light source requires adequate power.

(4) A scrim (a gauze or mesh panel diffuser) may soften or reduce excessive sunlight (fig 4-15).

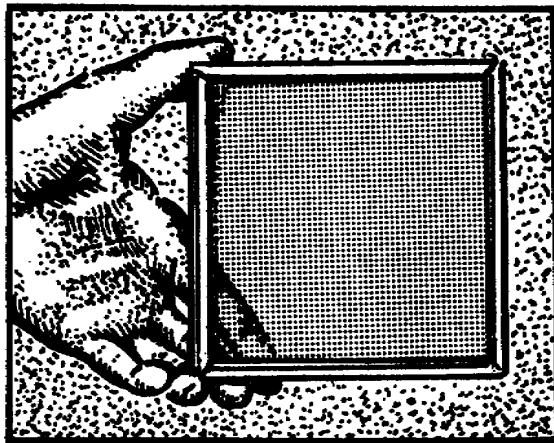


Figure 4-15. A scrim

(5) Strong frontal sunlight behind the camera has a generally flat, hard effect and may be used if that effect is sought. Colors on the subject may appear coarsely saturated.

9. Portable lighting. A portable light can be used either indoors or outdoors. If there is no AC power for hookup then a generator or batteries can be used. Quartz-halogen light sources make good portable lighting equipment by reducing the size and weight of equipment. Portable lighting usually comes in a suitcase-packed kit. It is excellent for use on small location

sites and includes lamps which can be moved to spot or flood positions, and accessories which include barndoors, metal flaps in front of a spotlight to control the light; full and half scrims, and cucalorus (kookie), a special cutout placed in front of a spotlight (figs 4-16 and 4-17).



Figure 4-16. Barndoors

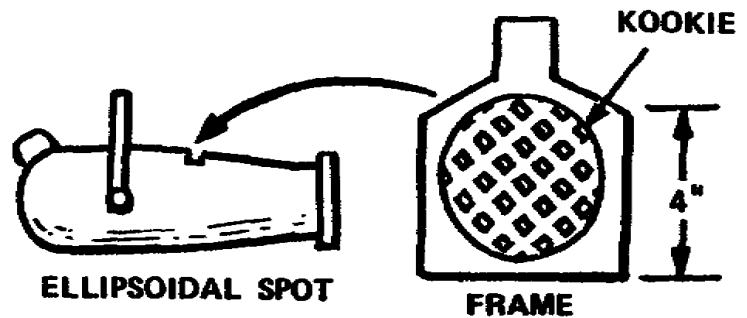


Figure 4-17. Cucalorus (kookie) inserted in front of a spotlight

- a. A battery-powered light can be used anywhere.
- b. Photoflood lamps are excellent for on-site shooting; they can be attached to lightstands or a bracket.
- c. Tungsten halogen lamps are smaller lamps and emit constant color temperature in spite of age.
- d. A portable sungun is a hand-held battery-powered light. It can be used in television news gathering. The battery has a built-in charging device and will operate between 20 and 30 minutes (fig 4-18).

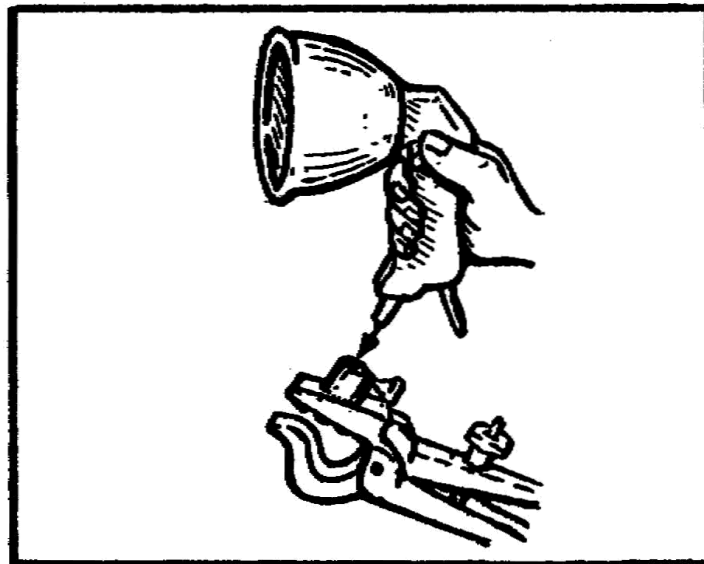


Figure 4-18. A sun gun can be held or clamped

f. Night lighting is possible with the portable lighting kit or lights for a smaller area.

g. If the location is naturally lit, campfire, moonlight or streetlights, lighting treatment is built up from these directions.

Lesson 4
Learning Event 1
PRACTICE EXERCISE

1. Which attracts greater viewer interest?
 - a. Continuous movement
 - b. Receding movement
 - c. Movement that changes direction
 - d. Movement in a constant direction
2. What happens if the picture is not composed correctly and the eye is led from center of interest?
 - a. There will be disturbing empty spaces
 - b. Persistence of vision will fill in the gap
 - c. There are no hard and fast rules
 - d. The value of the shot could be minimized
3. What is the effect of a single light straight on?
 - a. Helps create the illusion of depth
 - b. A flat picture with no depth
 - c. Simulates an environment
 - d. Enough light to function
4. What is a two-dimensional medium?
 - a. One that gives the illusion of depth
 - b. A normal camera angle
 - c. One that is technically and artistically correct
 - d. One that shows height and width
5. Which light is highly directional?
 - a. Fill light
 - b. Side light
 - c. Soft light
 - d. Hard light
6. A hard light defines features well, however:
 - a. It is not highly directional
 - b. It may make features appear harsh
 - c. It reduces dark shadows
 - d. It spills light into undesired space

7. What is a result of soft lighting?
 - a. Can have an abrupt effect on talent
 - b. Reveals texture
 - c. Is scattered
 - d. Causes rimming
8. What is one way to describe lighting?
 - a. Changing intensity
 - b. Proper use of light and shadow
 - c. That which is scattered to give a wide angle of illumination
 - d. Well defined modeling of features
9. Which of the following is true concerning shadows?
 - a. Should be eliminated entirely
 - b. Should not be eliminated entirely
 - c. Remove with proper back lighting
 - d. Always create an unprofessional look
10. How do you reduce dense shadows?
 - a. Pinning the beam
 - b. Highly directional lighting
 - c. Positioning light in front of, in back of, or to the side of heavy density shadow
 - d. Soft light source
11. How does the term "direction" apply in lighting?
 - a. Direction subject is facing
 - b. Single stream of light
 - c. Direction of light falling on a subject
 - d. Redirecting soft, directionless light
12. What is high relief?
 - a. High contrast between light and shadow
 - b. High separation between subject and background
 - c. High degree of illumination
 - d. Position and angle of key
13. What is a key light?
 - a. Three lights used in three-point lighting
 - b. A light that softens dense shadows
 - c. One that reduces hot spots
 - d. Principle source of directional illumination falling upon a subject

Lesson 4
Learning Event 1
ANSWERS TO PRACTICE EXERCISE

1. c, movement that changes direction
2. d, the value of the shot could be minimized
3. b, a flat picture with no depth
4. d, one that shows height and width
5. d, hard light
6. b, it may make features appear harsh
7. b, reveals texture
8. b, proper use of light and shadow
9. b, should not be eliminated entirely
10. d, soft light source
11. c, direction of light falling on a subject
12. a, high contrast between light and shadow
13. d, principle source of directional illumination falling upon a subject

Learning Event 2:
DESCRIBE LIGHT METERS

1. A light meter is accurate under many types of lighting conditions. Vision, alone, might not allow the cameraman to gauge the lighting. Resultant exposure could vary remarkably between individuals. Poor lighting can ruin even the most common or easy camera angle or shot. The intensity of a single small area cannot contrast too greatly from overall intensity. This contrast could be very obvious to the audience.

a. During the early part of the 1930's, science placed light meters in the hands of photographers. This light meter, also called exposure meter, or photoelectric exposure, measures light intensity or brightness. The meter measures the intensity of light falling on an object or subject or reflected by that object or subject.

b. Light strikes the light-sensitive surface of the meter. That surface reacts to light by generating a current. The current is in proportion to the light; the greater the light the greater the current.

c. The "meter" is simply a galvanometer, i.e., an instrument for detecting small electric current. The galvanometer movement causes a needle or light value indicator to deflect across the face of the meter scale (fig 4-19).

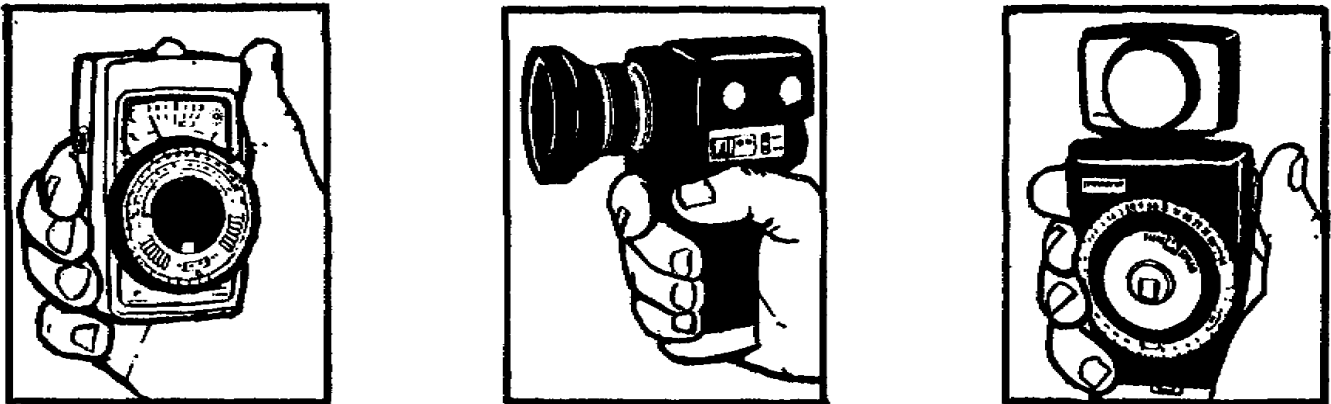


Figure 4-19. Types of light meters

2. Types of readings. Reflected light readings are measurements of the intensity of the light reflected from a scene or object and generally are more accurate than incident light readings, except when the prevailing light is low level (fig 4-20).

a. Use the near-object position when certain details are to be emphasized and surrounding light is in definite contrast to that reflected from the pertinent area. Hold meter near object or portion of the scene or object to be emphasized. Be careful not to cast a shadow on the object while a reflected light reading is being taken.

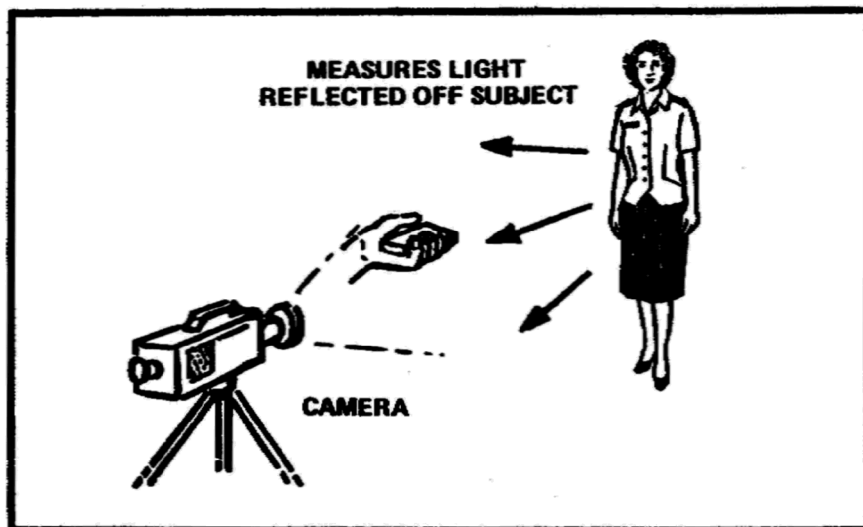


Figure 4-20. Reflected light meter reading

b. Incident light readings are measurements of the intensity of the light by which a scene or object is illuminated (fig 4-21). Use incident light readings to determine the best average exposure when the general illumination is at a low level. Hold meter near the object or the center of the scene and aim the meter toward the camera, in direction of the light. If the light comes from one side, point meter about halfway between the light source and the camera. Never point the exposure meter directly at the sun.

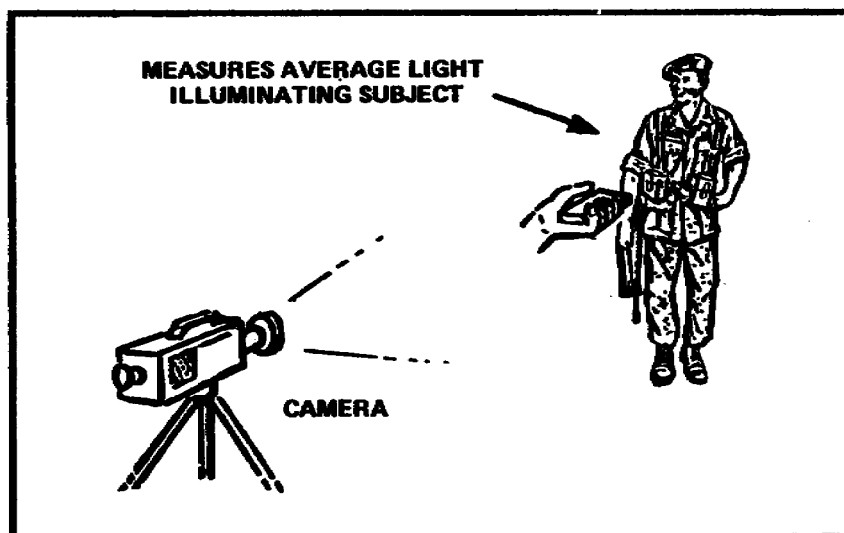


Figure 4-21. Incident light meter reading

3. Selecting suitable method for reading. Use average brightness method when scene has no outstanding or dark area and no details are required for special emphasis. Take reflected readings from camera position or near-object position.

a. Use brightest-object method when both the brightness of the darkest object and the average brightness of the scene are below range of light meter, when complete detail in the brightness portion of the scene is required and when light reading of the brightest object is required to determine the average brightness of a scene. Hold meter close to the brightest object in which full detail is desired. Disregard incidental bright spots such as a window in an interior scene or a patch of bright sunlight in an otherwise shaded area.

b. Use a reflected light reading when most important object in a scene is very dim or has adjacent reflections or bright spots unrelated to the subject and when a light reading of the darkest object is required to determine the average brightness of the scene. The method may be used for any scene.

c. Use the substitution method when it is impractical or impossible to take reflected light readings from the near-object position because the actual objects or most important are inaccessible. Take reflected readings from nearby objects that are lighted in the same manner as the inaccessible objects. Be sure the substitute object and actual object are lighted in the same way.

4. A light meter will last for a long time if you do not drop it or abuse it. Consider the following:

a. Always handle meter correctly since quality of video depends on correct readings.

(1) Do protect meter from bumping against other objects. Carry meter in your pocket or camera case when not in use. The meter case is not adequate in extreme conditions.

(2) Do not subject photoelectric cell to extreme light intensities. These intensities cause indicator needle to bounce at the high end of the scale and eventually cause damage.

(3) Do not subject the meter to extreme hot or cold.

b. Care in arctic areas. Extreme cold, i.e., subzero temperatures, and sudden changes in temperature, are both detrimental to the mechanism of the meter.

(1) Protect meter by placing meter inside jacket or in a packet and store in a warm but not hot place after use.

(2) In cold, dry weather, the window may receive a static charge that will deflect the pointer and cause a false reading. Breathe on the window to remove the static charge before taking light readings.

c. In desert regions protect meter from dust, extreme heat and sudden temperature changes. Always enclose the meter in its case when it is not actually in use and store in a cool place.

(1) Never leave the meter exposed to the direct rays of the sun.

(2) Temperatures of 125 degrees Fahrenheit and over may cause permanent damage to the light-sensitive area or to the photoelectric cell.

d. In the tropics, follow light meter readings exactly because tropical sunlight, although extremely bright, may have less effect than weaker sunlight of the moderate temperature zones.

(1) Shield exposure meter from extreme heat at all times and store it in a cool, dry, well-ventilated place when not in use.

(2) Clean frequently to prevent corrosion caused by high relative humidity.

Lesson 4
Learning Event 2
PRACTICE EXERCISE

1. When is a light meter accurate?
 - a. In sunlight
 - b. Indoors, under tungsten halogen lights
 - c. Seldom
 - d. Under many types of lighting conditions
2. What does a light meter do?
 - a. Measure intensity of light falling on an object
 - b. Measures intensity of light reflected by an object or subject
 - c. Both a and b
 - d. Measures reflected readings of inaccessible objects
3. The current inside the light meter is in proportion to what?
 - a. Temperature and humidity
 - b. DC output
 - c. AC output
 - d. Light
4. What is a reflected light reading?
 - a. Measurement of sun striking a subject or object
 - b. Measurement of the intensity of light reflected from a scene
 - c. Measurement of key light minus back light in a 2 to 1 ratio
 - d. Measurement of illumination without shadow density
5. What is a galvonometer?
 - a. Instrument for measuring best average exposure
 - b. Instrument for detecting small electric current
 - c. Instrument for transposing current values into footcandles
 - d. A light-sensitive surface
6. What is an incident light measurement?
 - a. Measurement of intensity of light by which a scene is illuminated
 - b. Measurement of fill light
 - c. Measurement of average brightness of a scene
 - d. Measurement of incidental bright spots

7. Which of the following is true about light meters?
- a. Clean frequently in arctic temperatures
 - b. Place meter inside jacket in tropics
 - c. Temperatures of 125 degrees Fahrenheit and over do not damage light meter
 - d. Never leave meter exposed to the direct rays of the sun

Lesson 4
Learning Event 2
ANSWERS TO PRACTICE EXERCISE

1. d, under many types of lighting conditions
2. c, both a and b
3. c, AC output
4. b, measurement of the intensity of light reflected from a scene
5. b, instrument for detecting small electric current
6. a, measurement of intensity of light by which a scene is illuminated
7. d, never leave meter exposed to the direct rays of the sun

Learning Event 3:
DESCRIBE REFLECTORS

1. Field productions have produced their own lighting problems. Have you noticed the deep shadows on the talent's face when sunlight comes from the side or back? How to fill in the shadows with appropriate light is a problem generally solved by reflectors which will compensate for the extreme differences in light level and lighten up the shadows. Reflectors serve the same purpose as fill lights in a studio situation. Tinfoil or aluminum foil is used for homemade reflectors.

2. Reflectors, also called reflector boards, are an inexpensive and convenient way of reducing shadows (fig 4-22). They redirect light to the subject. Reflectors bounce sunlight into areas of shadow that won't photograph well, supplying light to an area that needs more light for detail. Artificial light as well as sunlight can be reflected.

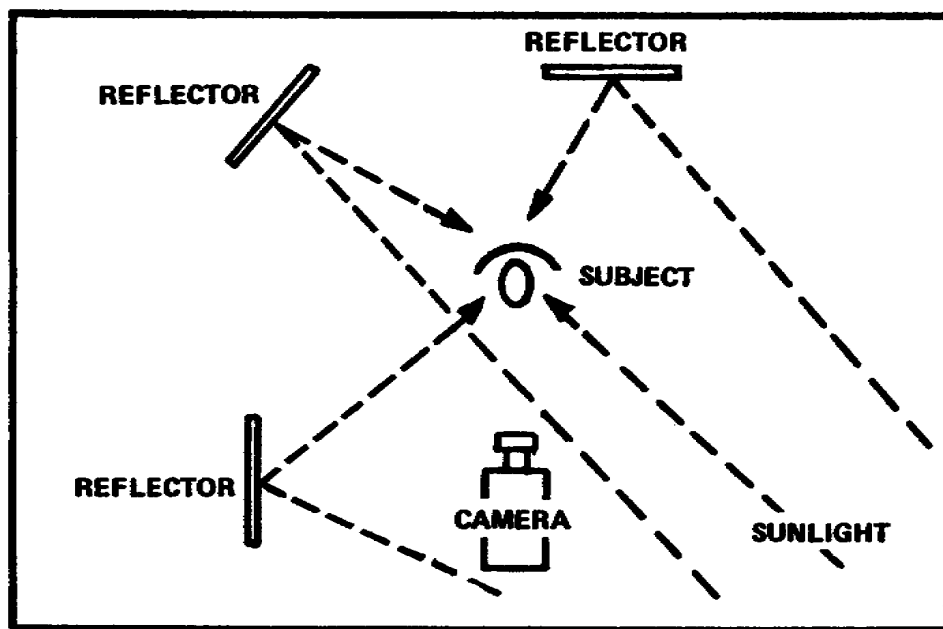


Figure 4-22. Reflector boards

a. When talent is back lit using sunlight as the keylight or dominant light, the amount of light reflected from the subject's face may be insufficient. The face is in its own shadow. In closeups, facial detail is more prominent than a long shot. To compensate for the facial shadows and define detail in the face in a closeup, use a reflector which will help balance contrast.

b. Remember, as you increase the distance from the reflector to the reflected area, any movement of the reflector is magnified. The reflector should be stable and steady. Movements due to wind or any kind of vibration

should be minimized. Mount reflector on a stand or have it secured by yourself or another person, just as you would do with a camera.

c. Monitor the position of reflectors because as the sun moves, it may make the reflector ineffectual.

3. Many varieties can be purchased. It may be easier or cheaper to make your own reflectors.

a. Use polystyrene for one side and put crumpled tin foil on the other side. The polystyrene will give you hard light reflectance and crumpled tin foil will give you soft light reflectance.

b. If you do not have polystyrene, use a piece of a cardboard or plywood for backing material. Glue smooth foil to one side and crumpled foil to the other.

c. Use white paper or possibly newspaper if you do not have tin foil.

d. Use a piece of cardboard or plywood or something similar for backing. Crumple foil and partially smooth it, then glue to backing. Smooth foils give hard light, crumpled foils produce diffused light. A crumpled foil reflector is preferred to avoid hotspots.

4. Types of reflection. One type of reflector has two sides, one with smooth silver paper and the other silver leaf. The two sides offer specular and diffuse reflection. With specular reflection (the smooth side), the rays are hard and parallel, casting sharp, well-defined shadows. Diffuse reflection (the silver leaf side) is the type seen on a cloudy, overcast day. The rays are soft, scattered and not parallel. It results in flat lighting and poorly defined shadows.

a. With a homemade reflector, the smooth foil is spectral light or harder light. The crumpled foil side produces a diffused light. The chance of hot spots is minimized with the crumpled foil.

b. When using polystyrene for one side and tin foil for the other, a variation on the foil reflector, the polystyrene will give you hard light reflectance and crumpled tin foil will give you soft light reflectance.

5. Other uses for reflectors. For a very bright spot of light, use mirrors or polished tin for distant objects or special effects. A reflector isn't usually required for a long shot, since detail is not important in faces; the person is small in comparison to overall picture.

a. Silver reflectors are used as back lights or cross lights or illuminating a dark background.

b. Polished tin or mirrors can be used for distant objects or special effects where an extremely strong light is required.

Lesson 4
Learning Event 3
PRACTICE EXERCISE

1. What problem do reflectors solve?
 - a. They form necessary hot spots
 - b. They fill in shadow areas on a subject's face
 - c. They are used in emergencies to signal the director
 - d. To replace back lights
2. A reflector is often compared to which light source?
 - a. Key light
 - b. Fill light
 - c. Back light
 - d. Side light
3. Which type of light will you get from the crumpled foil side of a reflector?
 - a. Hard
 - b. Special effect
 - c. Diffused
 - d. Not spot
4. Which of the following is true about a reflector?
 - a. Smooth foil is preferred to avoid hot spots
 - b. Use for facial detail in long shots
 - c. It is unnecessary to monitor position of reflector
 - d. Be sure the reflector is steady
5. How do you compensate for facial shadows and define detail on the face?
 - a. Use polished tin
 - b. Use silver reflectors
 - c. Use of the soft light reflectance
 - d. Use of specular reflection

Lesson 4
Learning Event 3
ANSWERS TO PRACTICE EXERCISE

1. b, they fill in shadow areas on a subject's face
2. b, fill light
3. c, diffused
4. d, be sure the reflector is steady
5. c, use of the soft light reflectance

LESSON 5
DEFINE THE POSTPRODUCTION PHASE
OF A TELEVISION FIELD PRODUCTION

TASK

Describe postproduction activities, viewing raw footage, editing, aesthetics, operator's maintenance, and preparing a postproduction package.

CONDITIONS

Given information and illustrations relating to postproduction.

STANDARDS

Demonstrate competency of the task skills and knowledge by correctly responding to 80 percent of multiple-choice test covering postproduction activities.

REFERENCES

None

Learning Event 1

DEFINE EDITING AS A CREATIVE ACTIVITY, LIST THE PRINCIPLES OF EDITING

1. Editing is an art. Art implies aesthetics, i.e., is the product well made, does it possess excellence, value, and quality? A production can be assembled indifferently or ruthlessly, with no regard for quality. It would be easy to assume that editing is a matter of throwing scenes together. To the craftsman, this is the perfect way to mutilate quality camera footage. Editing requires a competent craftsman, one with an aesthetic sense. Without care, the final product is the same old thing. If the editor has pride, the production will reflect excellence.

2. Each editor has a different editorial approach. There are no set rules for editing. Editing is a creative affair requiring the editor's judgment. Editorial judgment reflects a sense of timing, personal preference, and emphasis.

a. The editor can be meticulous with his product or he can be lazy and thoughtless of the audience. The editor has it in his power to enhance or destroy quality footage that the cameraman has worked hard to produce, or a conscientious editor may be pressured to "save" mediocre footage from an incompetent cameraman. Many cameramen prefer to edit their footage to ensure a quality product.

b. Reviewing original or raw footage is not a laid-back job; it is analyzing, not just viewing. A good editor will mentally visualize 75 percent of the edits to be made, with most of the planning accomplished in one session. Before editing, review and note all footage for the following:

- (1) Video quality (good, fair, bad, unusable).
- (2) Type of shot (closeup, medium shot, long shot) and subject.
- (3) Identify shots used for cut-ins and cut-aways.
- (4) Audio quality.
- (5) Time and length of each shot.
- (6) Log all counter numbers.
- (7) Maintain quality check or control track.
- (8) Note inadequate lead-in of control track.
- (9) List all shots or scenes to be reshot.

3. Beginning the tape. Before editing any of your work, there are some signal requirements that you must be aware of. You will implement these requirements during your editing exercises.

a. Video test signal. The video level of the VTR normally is automatically controlled as it is often not possible to adjust for rapid changes in video levels manually. Typically, you record one minute of video consisting of color bars. The color bars provide you and the video engineer with a reference used to set up other video equipment during playback.

b. Audio test signal. The audio test signal recorded is a 1000 Hz tone used to set the VTR volume levels. You set the levels in the manual mode, not the automatic gain control (AGC) mode, as the AGC will cause hiss and roar as it seeks a signal during quiet portions of the program. Once you set the VTR audio levels with 1000 Hz tone, leave the controls alone. All subsequent audio level adjustments are done at the audio console.

c. After the test signal, there is a short section of "black," possibly a leader or countdown from ten to two seconds, one second of "black," then the opening of the program.

4. Editing principles are not rules, they are suggested techniques. Two fundamentals of editing are continuity and aesthetics. We must maintain audience attention by keeping their interest, by not boring them, by not confusing them. Be thoughtful of the audience while editing.

a. A rule of thumb is be aware of where the audience's attention is located on the screen before and after each edit. Good editing includes smooth transitions.

b. Continuity is fundamental. Are sequences coherent? Do shots parallel the script?

c. Avoid jump cuts. Do not edit two shots together in such a way that an obvious movement is deleted. Subject will appear to jump.

d. Avoid double action. Redundant action destroys continuity and action doesn't flow.

e. Don't change screen direction without explanation.

f. Don't cut or edit too soon. Don't lose confidence in the scene too soon. The effect may be jerky.

g. Match action.

h. Edits are often motivated by a causal relationship.

i. Edits can also be a bridge or transition.

j. Cut in on action. Cut action a fraction after the beginning of movement.

k. Avoid cutting from one shot to a shot of an irrelevant detail. You must capture the audience's attention; the production should carry itself. Audiences must not have to fight to follow the action. They should not be aware that they are being manipulated by good editing technique.

l. Use re-establishing shots any time something, someone, or somewhere new is introduced to the production.

m. Be alert to scenes that are supposed to be happening at the same time of day but were shot at different times or days.

n. Use cut-ins and cut-aways to help audiences forget former scenes.

5. Aesthetics are important. Smooth transitions are foremost; set pace and mood. Maintain quality throughout.

a. Good timing is good editing.

(1) Short cuts result in fast tempo, that is, one scene right after another, right after another.

(2) Long cuts result in slow tempo.

(3) Is scene length appropriate?

(4) Editing can compress time.

(5) Editing can lengthen time.

(6) Edit for the appropriate moment.

b. Use cut-ins and cut-aways of the same quality as overall scene.

c. When choosing from a variety of like shots, select the one with best composition, focus, color, and least distracting foreground or background.

d. Ensure that special electronic effects have a purpose and enhance the program.

e. Use appropriate change of angle. The shot should be different enough to avoid boredom but angle should not be so different as to be confusing or give a jerky effect.

f. Use sufficient close-ups. Television is a close-up medium. Closeups look better on small television screens.

g. Never cut just for the sake of it. Intercut different angles, juxtapose, begin to build up complex sequences. Establish pace and mood. Did you use a script? Do the shots parallel the script? Does audio support the video? Are the shots in order? Is there continuity?

h. Don't always edit for video. Sometimes it is necessary to edit for sound, e.g., one might edit at the end of a powerful dialogue as opposed to the middle of a conversation. However, strong video, in general is more effective than strong narrative.

6. The professional editor must first understand the process behind how the audience sees. The human mind has the capability to fill in information omitted from the basic sequence. A cut from a long shot of the cowboy on the horse, to medium shot of a closeup of his face, is psychologically acceptable to the audience. The audience requires key information.

a. The specific details must be emphasized. The general impression leaps into the specific. At the fitting moment, the editor will cut from a general view of the whole to the specific. The editor does not show every detail and movement. By cleverly editing together scenes of the basic sequence, the editor gives an impression of the real.

b. The director exercises his right to select details which he deems significant, those details which best portray his story or documentary. A 1-hour show on television may cover a 2-week period in a man's life. There is not time to show everything that happened in that 2-week period; only key events, in sequence. The mind will fill in the rest. What a tedious affair it would be if it took 2 weeks to watch a story about 2 weeks in a man's life.

7. For smooth continuity, the actions of two consecutive shots in a single scene should match. Another rule is to keep background consistent throughout.

a. In shooting a production, the cameraman changes image size. The editor uses appropriate change of angle between two consecutive shots. It must be done well or the spectator will get the impression that a subject or object has inexplicably shifted. The viewer will be aware of the change; the edit will not be smooth.

b. To cut to an insignificant detail would be irrelevant. Do not confuse your audience with meaningless detail. It is necessary to preserve screen direction if continuity is the editor's purpose.

c. If there is a new development which alters the situation, the scene usually must be re-established. At this point, the editor must edit in a long shot to re-establish the situation and retain continuity. The cuts must be smooth and continuity consistent.

d. There must be a reason for a cut. An idea may need to be carried across to another spot or the edit can mark a new subject or action. An edit can re-establish. An edit can be a transition or a bridge. Good editing means the key action or significant events are included, and inessential, superfluous movements deleted. Not every action is necessary, but there must be enough action to imply with the audience mentally filling in the unsaid, closing up time and condensing space. Good editing is dependent upon a competent editor.

Lesson 5
PRACTICE EXERCISE

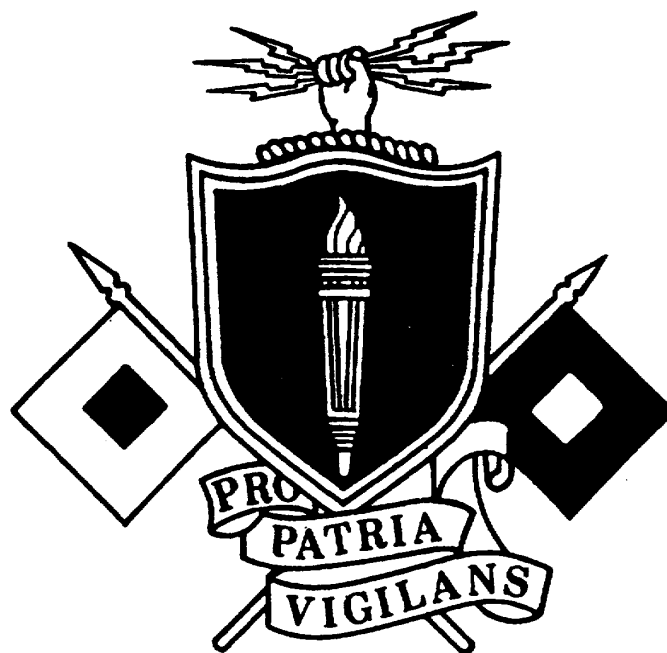
1. Which of the following statements is true?
 - a. Editing is a matter of throwing scenes together
 - b. Editing is a low-level skill
 - c. Editing is a science
 - d. Editing is an art
2. Which best describes editing?
 - a. Reviewing original footage in a laid-back manner
 - b. Mentally visualizing and analyzing
 - c. Identifying unusable footage
 - d. Going by the set rules of aesthetics
3. When you are reviewing original footage, what do you look for in video quality?
 - a. Audio quality
 - b. Closeup, medium shot, long shot
 - c. Cut-ins, cut-aways
 - d. Good, fair, bad, unusable quality
4. Which of the following is true?
 - a. Identify type of shot in terms of long shot, medium shot, and closeup
 - b. Identify type of shot in terms of color or black and white
 - c. Identify type of shot in terms of transitions
 - d. Identify type of shots in terms of powerful dialogue
5. What is the purpose of color bars?
 - a. Variety
 - b. Enhance video signal
 - c. Provide video engineer with a reference
 - d. Administrative procedure
6. What tone is used to set VTR volume levels before editing?
 - a. 25 footcandles
 - b. Cardoid pattern
 - c. 1000 KHz tone
 - d. 1000 Hz tone

7. Which best describes principles of editing?
- a. Assemble raw footage
 - b. Editing principles are not rigid rules
 - c. Follow rules rigidly
 - d. Forget the audience temporarily at this point
8. What is a jump cut?
- a. Raw footage is jerky
 - b. Cutting in on action
 - c. One edit in a series of non-parallel actions
 - d. An obvious movement has been omitted
9. What is double action?
- a. Two talents moving simultaneously
 - b. Repeated actions that destroy continuity
 - c. Two similar shots back to back
 - d. Psychologically powerful action
10. What may happen if you cut from one shot to another too soon?
- a. Effect may be jerky
 - b. No causal relationship
 - c. Irrelevant detail
 - d. Compression of time

Lesson 5
ANSWERS TO PRACTICE EXERCISE

1. d, editing is an art
2. b, mentally visualizing and analyzing
3. d, good, fair, bad, unusable quality
4. a, identify type of shot in terms of long shot, medium shot, and closeup
5. c, provide video engineer with a reference
6. d, 1000 Hz tone
7. b, editing principles are not rigid rules
8. d, an obvious movement has been omitted
9. b, repeated actions that destroy continuity
10. a, effect may be jerky

BASIC TELEVISION LIGHTING TECHNIQUES



THE ARMY INSTITUTE FOR PROFESSIONAL DEVELOPMENT
ARMY CORRESPONDENCE COURSE PROGRAM

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**THRU
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US ARMY AUDIO/TELEVISION SPECIALIST
MOS 84F SKILL LEVELS 1 AND 2 COURSE

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BASIC TELEVISION LIGHTING TECHNIQUES

SUBCOURSE NO. SS 0549-7
(Developmental Date: 30 June 1987)

US Army Signal Center and Fort Gordon
Fort Gordon, Georgia

Three Credit Hours

GENERAL

The Basic Television Lighting Techniques Subcourse, part of the Audio/Television Specialist, MOS 84F Skill Level 1 course, is designed to teach the knowledge necessary for performing tasks related to lighting techniques in the studio and in the field. Information is provided on several tasks which are performed at increasing levels of difficulty at Skill Levels 1 and 2. The subcourse is presented in three lessons, with each lesson corresponding to a learning objective as indicated.

Lesson 1: DEFINE BASIC TELEVISION LIGHTING TECHNIQUES IN THE STUDIO

TASK: Define studio lighting techniques for a television production, define lighting, three-point lighting, four-point lighting, and describe the lighting equipment used in television.

CONDITIONS: Given information and illustrations relating to studio lighting techniques.

STANDARDS: Demonstrate competency of the task skills and knowledge by responding correctly to 70 percent of the multiple-choice test, covering definitions of lighting, three-point lighting, four-point lighting, equipment used and different studio lighting techniques.

(This objective supports STP tasks listed at the end of this section.)

Lesson 2: DESCRIBE MEASUREMENT OF STUDIO LIGHT WITH A LIGHT METER

TASK: Describe light meters, their function and techniques of using light meters.

CONDITIONS: Given information and illustrations relating to light meters, their function and proper technique.

STANDARDS: Demonstrate competency of the task skills and knowledge by responding correctly to 70 percent of the multiple-choice test covering descriptions of light meters, their functions and techniques.

(This objective supports STP tasks listed at the end of this section.)

Lesson 3: DEFINE BASIC LIGHTING TECHNIQUES IN THE FIELD

TASK: Define lighting techniques in the field, define equipment used, field lighting techniques and the difference between field and studio lighting techniques.

CONDITIONS: Given information and illustrations relating to field lighting techniques.

STANDARDS: Demonstrate competency of the task skills and knowledge by responding correctly to 70 percent of the multiple-choice test covering field lighting techniques of a television production.

(This objective supports STP tasks listed at the end of this section.)

THE OBJECTIVES FOR THIS SUBCOURSE SUPPORT STP TASKS:

113-577-1044	Set Up Studio Lights for a Television Production
113-577-1045	Connect Studio Lights to Patch Board/Dimmer Control Board (Electrical Sources)
113-577-1046	Perform Measurement of Studio Light Intensity

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Whenever pronouns or other references denoting gender appear in this document, they are written to refer to either male or female unless otherwise indicated.

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INTRODUCTION TO BASIC TELEVISION LIGHTING TECHNIQUES

Lighting for studio and field productions is critical. Lighting is both an art and a science. Not all rules of studio lighting apply to field lighting for a television production. Portable equipment can be used entirely for field productions. An Audio/Television Specialist requires knowledge in the techniques of lighting. The soldier should be flexible in applying techniques to the production at hand.

LESSON 1
DEFINE BASIC LIGHTING TECHNIQUES IN THE STUDIO

TASK

Define basic lighting techniques for a television production. Define lighting, 3-point lighting, 4-point lighting, and describe the lighting equipment used in television.

CONDITIONS

Given information and illustrations relating to studio lighting techniques.

STANDARDS

Demonstrate competency of the task skills and knowledge by correctly responding to 70 percent of the multiple-choice test covering definitions of lighting, 3-point lighting, 4-point lighting, and the lighting equipment used.

REFERENCES

None

Learning Event 1:

DEFINE LIGHTING, LIGHTING PRINCIPLES, TECHNICAL AND AESTHETIC REQUIREMENTS FOR LIGHTING, 3-POINT LIGHTING, AND 4-POINT LIGHTING

1. Lighting is an art. Clever lighting manipulates the audience and their perception. This would include their perception of size, shape, color, and weight. Lighting can enhance the illusion of three dimensions. Poor lighting can result in footage without character (boring). Good lighting is critical to a quality television production.

2. Like the human eye, the television camera needs light in order to "see" and function properly. Unlike the human eye, the television camera is much more demanding as to the amount of light, the color of the light, and its relative harshness and direction.

a. Although we may see quite well with only a flashlight as an illuminating source or under extremely bright sunlight, the camera may not operate correctly under these conditions. The flashlight may not radiate enough light for the pickup tube to give off sufficient electricity. The resulting television picture lacks signal strength and consequently suffers from excess video noise, often called picture snow. Bright sunlight, on the other hand, may be too much light for the camera to handle. At best the picture looks washed out; at worst, the superabundance of light can destroy the camera pickup tube.

b. A lamp, which appears to the eye to give off a perfectly white light, may look so red to the camera that the resulting picture has a reddish tint on the color monitor (television set). Another lamp may produce light that looks to the camera quite bluish, although our eyes again perceive it as normal white light.

c. A harsh light, or a light coming from an unusual angle or direction, may produce shadows that conceal, rather than reveal, the actual shape of an object.

3. Television lighting technique is defined as the adjustment and manipulation of light to meet the technical requirements of the camera while creating a pleasing television picture. Controlling lighting for television is critical. To explain how we control lighting, we will further discuss the following areas:

a. Types of light and illumination.

b. Color temperature.

c. Technical requirements.

d. Aesthetic requirements.

4. As in all photographic arts, in television you encounter two basic types of light and illumination. The two types of light are directional and diffused. The two types of illumination are outdoor and indoor.

a. Directional light illuminates only a relatively small area with a distinct beam. It produces a well-defined shadow and produces fast falloff, which means that the light area changes rather abruptly into a dense shadow area. To achieve directional light we must use spotlights.

b. Diffused light illuminates a relatively large area with a wide indistinct beam. It produces soft, undefined shadows and causes slow falloff. The lighting instruments used to emit diffused light are called floodlights.

c. Outdoor illumination is primarily accomplished by the most reliable source we have, the sun. But, the sun does not always emit the same type of light. On a cloudless day, the sun emits a highly directional light, like a spotlight. On an overcast day, the clouds act as diffusers and change the sun into a diffused light source, like a floodlight. This light is nondirectional (diffused) and has a slow falloff. Although we use special light sources and reflectors to adjust the lighting as much as possible when outdoors, we generally have little control over outdoor illumination.

d. Indoor illumination will almost always require the use of lighting instruments. If the room is partially illuminated by available light (i.e. light coming through a window) the job of matching the amount and the two types of illumination becomes even more challenging. The amount and types of lighting instruments used varies from one handheld light to complete lighting grids that allow total and precise control over the light.

5. Color temperature is the standard presently used in television to measure the relative reddishness and bluishness of "white" light. A fluorescent bulb actually emits a blue-green tint while a candle emits a reddish tint. This difference can be measured precisely and expressed in degrees kelvin. Lord Kelvin devised this scale by heating a carbon filament, which he considered to be completely light absorbing and therefore a black body, from absolute zero to various degrees centigrade. He observed that the hotter the black body got, the more bluish the emitted light became. Conversely, the more the temperature dropped, the more reddish the light became. If he heated the filament to 3200K (3200 degrees from absolute zero centigrade) it emitted a fairly white light. Therefore, we consider 3200K the standard for "white" indoor light.

a. Outdoor illumination is bluer than indoor light and, therefore, has a different color temperature. The standard color temperature outdoors is about 5600K as measured on a midsummer day at high noon in Washington, DC.

b. Most studio lighting instruments are rated as 3200K, assuming they receive full voltage. Lighting instruments that are used to simulate or augment outdoor illumination have bulbs that are rated at 5600K. We will discuss these lighting instruments in more detail in a later section of this subcourse.

6. Technical lighting requirements are to provide enough light so that the camera can "see well" and to limit the contrast between highlight and shadow areas. In order to understand technical requirements, it is necessary to break them down into two separate areas, operating light level (base light), and contrast.

a. In order to make the camera see well, that is, so the pictures are relatively free of video noise and lag, a minimum operating light, called base light, must be established. Base light is the overall light level on a set or event area.

(1) Base light can be achieved in two distinctly different ways. The first method is to establish a highly diffused illumination through the use of floodlights. The specific areas requiring lighting (people, specific set areas, etc.) could then be added to the base lighting.

(2) The second and most preferred method is to light those areas requiring specific lighting first, then fill in the harsh shadow areas with floodlights. By using this method, very little additional light will be required to meet the base light requirements.

(3) On remote productions, where time and lighting equipment are limited, using the first method of establishing base light is the more practical of the two.

(4) The level of intensity required for proper base light varies with the type of camera used. However, if 250-foot candles are used as a standard light intensity level, practically any camera on the market today will function properly.

b. The television camera can tolerate only a limited difference between the lightest and darkest areas of a scene if it is to show the subtle brightness differences in the dark picture areas, the middle range, and the light picture areas.

(1) When working with contrast, the primary concern is the amount of light reflected by the colors and various surfaces reflecting the light, rather than the amount of light being emitted by the lighting instruments themselves. For example, a white object, such as a refrigerator, will reflect a great deal more light than a dark-blue velvet cloth, even when they are illuminated by the same light source. Further, if you should place a highly polished piece of brass on that same velvet cloth, you would probably have too much contrast without even beginning to light.

(2) The difference between the lightest and darkest parts of a picture is known as the contrast ratio. For most color television cameras, the primary contrast ratio is 30:1. This means that the lightest part of the picture area is 30 times as bright as the darkest picture area. If the contrast ratio is more than 30:1, the camera can no longer reproduce the subtle brightness differences in the lightest and darkest parts of the picture area.

(3) There are three general ways to keep the contrast ratio within television's 30:1 limits. If you follow these guidelines, you should be within the contrast limits of your equipment.

(a) Stay aware of the level of reflectance of objects. A highly reflective object needs less illumination than a light-absorbing object.

(b) Avoid high brightness contrasts in the same shot. For example, instead of placing a highly polished piece of brass on a dark-blue piece of cloth, place it on a more light-reflecting piece of cloth.

(c) Lighten the shadow areas with fill light. This will help to show some of the detail that otherwise might be lost because of too high a contrast ratio.

7. Aesthetic requirements pertain to the artistic value of a scene. To meet these requirements the following points must be considered:

a. Producing a pleasing picture by the proper distribution of light and shadows.

b. Support the illusion of reality such as moonlight, sunlight, or other similar settings.

c. Help bring out the depth and dimension of a scene.

d. Add beauty and glamour to the talent or subject.

e. Enhance the actors' looks by bringing out the good side of their features and playing down objectional ones.

8. It may seem an incredibly difficult task to light for television given all the considerations. However, if the lighting technician follows proven techniques of photographic lighting, the job becomes much easier than originally thought. Let us take a look at these techniques. Television, like all the photographic arts, is subject to photographic lighting principles. Three-point lighting is the most basic of these principles.

a. Three-point lighting, also known as triangle lighting, consists of three main light sources (as its name suggests). These three light sources are known as the key light, the back light, and the fill light (fig 1-1). These lights are positioned in such a manner to most effectively perform their function.

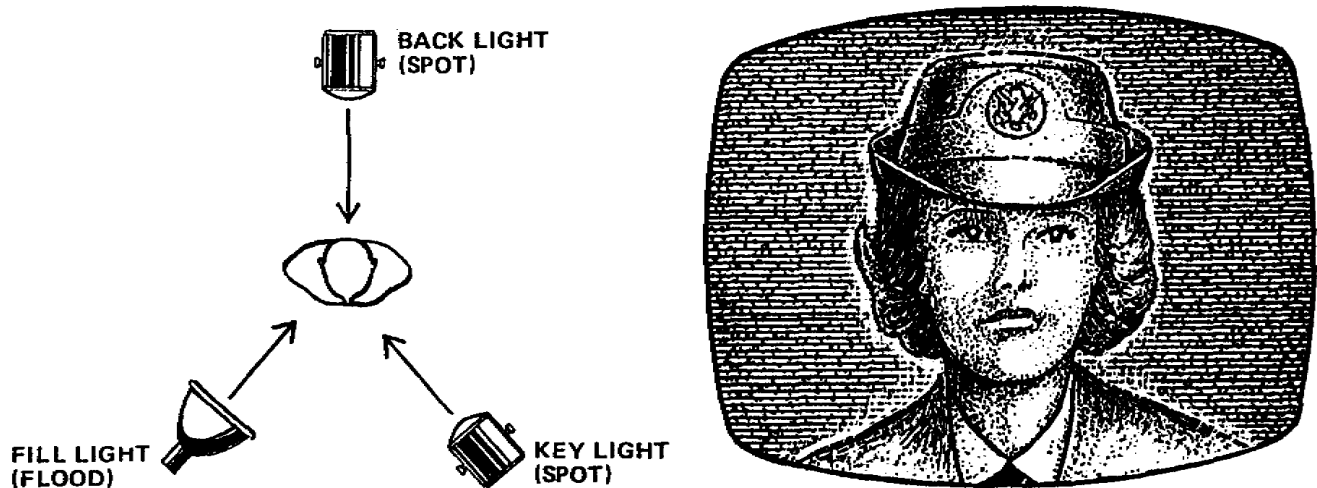


Figure 1-1. Three-point lighting

b. When setting up three-point lighting, the primary source of illumination is the key light (fig 1-2). Its main function is to bring out the basic shape of an object. In order to do this, the key light must produce some shadows. A spot light is generally used as the key light. This allows a great deal of directional control over the light.

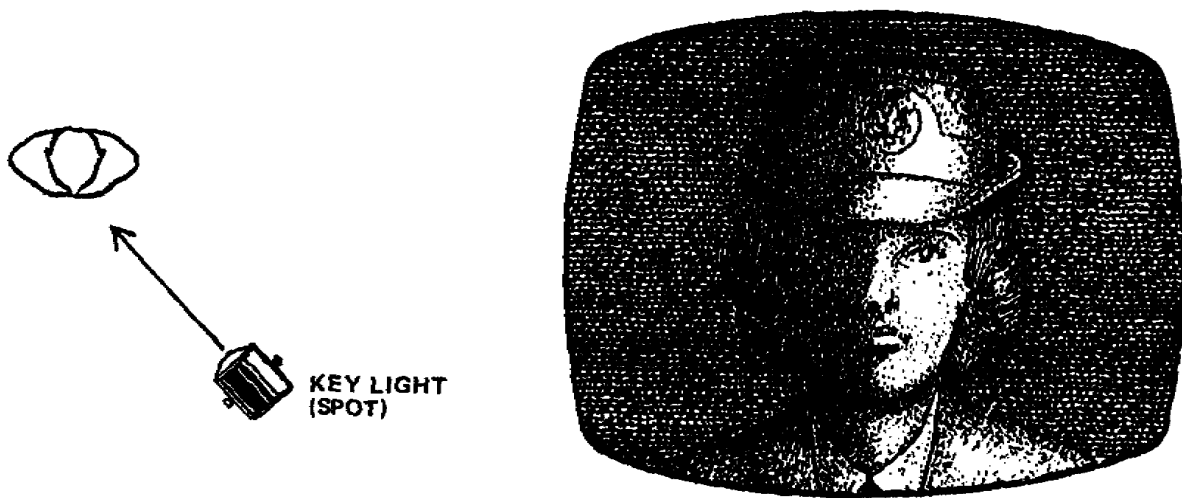


Figure 1-2. Key light on person

c. When lighting is natural, the light is coming from above. Therefore, the key light is placed above and to the left or right front side of the subject being lighted. This is from the camera's point of view (fig 1-2); note the deep shadows present on the side of the face opposite the key light. When the key light is set, the object will have very dark shadows on the side opposite the key light.

d. The back light (fig 1-3) has several important functions. It helps to distinguish between the shadow area of an object or subject and the background. The back light also emphasizes the outline of the object, separating it from the background. Thirdly, the back light adds dimension and gives sparkle to a scene.

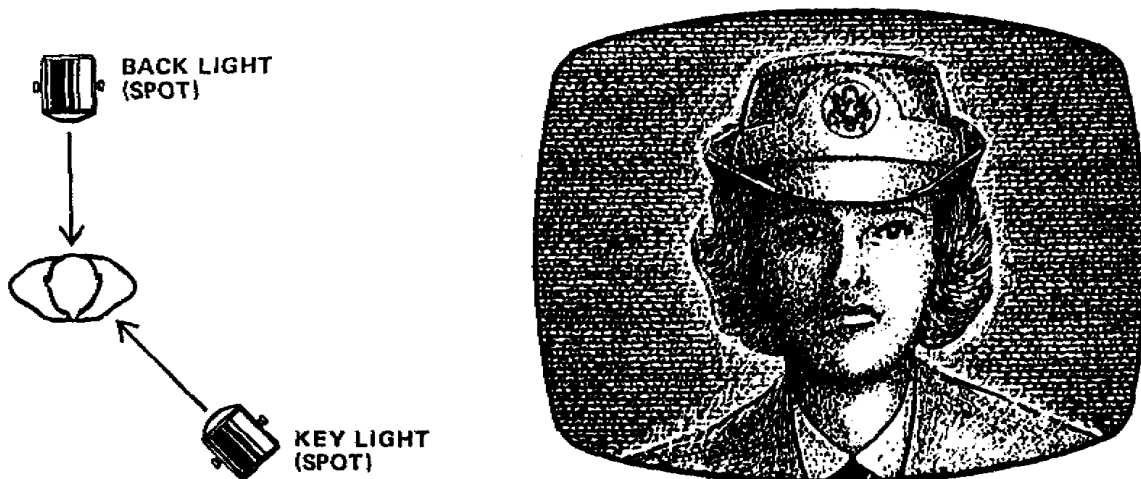


Figure 1-3. Back lighting a person

e. Generally, it is best to position the back light directly behind the object or subject being lighted (opposite the camera). However, if due to studio size constraints, the back light must be placed to one side or the other, it is best to keep it as near to the rear of the object being lighted as possible.

f. A more critical problem is controlling the angle at which the back light strikes the object. If it is positioned directly above the object, it becomes a toplight, which is undesirable. If it is placed too low, the back light may shine into the camera lens causing flare and halo. This could also damage the camera pickup tubes. In general, lighting angles of 45 degrees are considered ideal for normal lighting situations.

g. Like the key light, a spotlight is generally used as the back light. Once again, this allows a great deal of directional control over the light.

h. Once the key and back lights are set, the dimension of the object should be shown quite well. However, the falloff from light to dark areas is extremely fast. Also, the shadow area of the object is so dense that the camera is unable to see any object detail within this shadow area. Consequently, it becomes necessary to slow down the rate of falloff through the use of a fill light (fig 1-4).

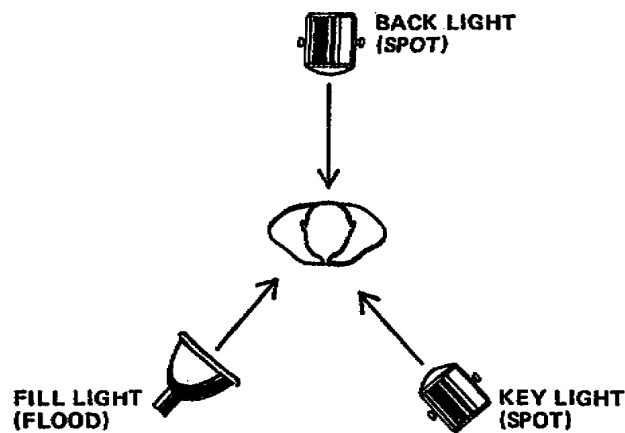


Figure 1-4. Fill light

i. When placing the fill light, care should be taken not to eliminate all shadows because this eliminates the three-dimensional effect we are trying to create.

j. The ratio of key light to fill light is best, if it is about 2:1 (fig 1-5). That is, the key light is twice as bright as the fill light. This will reduce shadow density but still maintain enough shadow area to complement, rather than eliminate, the three-dimensional effect.

LIGHTING BALANCE

	Too bright	Too dim
Key light	Back light less effective. Skin tones are high. Facial modeling lost. Lightest tones tend to be overexposed. Gives a harsh effect.	Back light predominates and often becomes excessive. Darker tones are underexposed. Possible muddy effect
Back light	Excessive rim light. Shoulders and tops of heads. Excess back light causes key light to appear inadequate.	Two-dimensional picture which lacks depth. Subject and background tend to merge together.
Fill	Modeling from key light reduced and flattened.	Excessive contrast. Subject too harshly modeled.

Figure 1-5. Lighting ratio

9. Four-point lighting. Although three-point lighting yields a very good result, it is somewhat restrictive if more than one camera angle is desired. Therefore, an alternative lighting technique, known as four-point lighting, is also used. Four-point lighting uses four spotlights (fig 1-6). The illumination from these lights should strike the object being lighted at approximately a 45-degree angle from above.

a. Along with allowing greater camera angles, the four-point lighting technique is simpler to set up than three-point lighting. However, the illumination from four-point lighting is very flat (low contrast ratio).

b. The lighting ratio for four-point lighting is 1:1 for all the lights used. This means that all the lights are illuminating at the same intensity.

10. Methods of eliminating shadows.

a. Regardless of how well you light or which lighting principle you use, shadows are going to be cast on areas of the set. Usually, with careful planning and lighting adjustment, these shadows will fall in areas that the camera will not "see"; that is, areas of the set that we, as the production crew, will not use as part of the "on camera" shot. Furthermore, when lighting a set, additional background lighting must be added to illuminate the remaining parts of the scene that do not require three- or four-point lighting; i.e., the flats, props, etc. By adding this background light, the shadows cast by other lighting instruments are diluted to the point where they are no longer a problem.

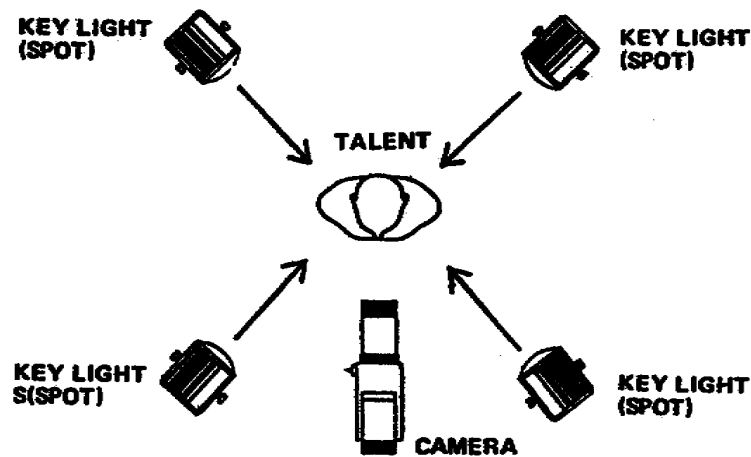


Figure 1-6. 4-point lighting

b. One problem, however, cannot be so easily solved. That is the problem of shadows cast by the boom microphone. If a boom microphone is going to be used, careful coordination between the boom operator and lighting technician is required to ensure that the boom does not cast shadows on the set area that is "on camera."

11. Special lighting techniques. Many studio productions require very specialized lighting in order to set the desired mood or nature of the event. The four most common special lighting techniques are cameo lighting, limbo or silhouette lighting, colored background lighting and chroma key lighting.

a. Certain television shows, especially those of a dramatic nature, are staged in the middle of an empty studio against an unlit background. This technique, where only the performers are highlighted against a dark background, is commonly known as cameo lighting.

(1) All cameo lighting is highly directional and is achieved entirely with spotlights. In small studios, the background areas are carefully shielded with black, light-absorbing draperies from any kind of distracting spillage of light.

(2) Although cameo lighting was a highly effective technique in monochrome television, it is rather difficult to handle in color. The major problems are high contrast, dense shadows, and the low baselight levels, all adverse factors to good color lighting. However, in certain circumstances, cameo lighting can be highly effective.

b. The lighting for a silhouette effect is exactly opposite to cameo lighting. In silhouette lighting, you light the background but leave the figures in front unlighted. Silhouette lighting shows only the contour of objects and people, but no volume and texture. Obviously, you light only those scenes in silhouette that gain by emphasizing the contour of things.

(1) You can also use silhouette lighting for concealing the identity of a person appearing on camera.

(2) In silhouette lighting, you use highly diffused light (usually from scoops with scrims or soft lights) to get the background evenly illuminated.

c. Color background lighting. To change the colors of the set background, you can use various color gels to add or change the color of the background.

(1) For example, if you want a background of an even red color, you would "gel" all the background scoops with red colored gels. If you wish to break up your neutrally-colored background, you could gel a few background spotlights with the appropriate blue-colored gels.

(2) By using several sets of background lights (several instruments grouped together) with different color gels for each set, you can easily change background colors by dissolving from one set (on group dimmer 1) to another (on group dimmer 2).

(3) When lighting the background at a set, it is best if the illumination for the background comes from the same general direction as the key light. Further, the background light should be about half as bright as the key light (key to background ratio 2:1).

d. The chroma key set area consists of a colored background (normally blue) and the foreground area, such as a newscaster's desk or interview chairs and table. The blue background is used for chroma key matting. That is placing the picture from another source into the scene electronically. Wherever the color blue is within that scene, the picture would be inserted.

(1) The most important aspect of lighting the chroma key set area is even background illumination. In order to achieve an optimally effective chroma key matte, (electronically supplied background image), the blue background must be lighted with highly diffused instruments, such as soft lights or scoops with scrim attachments.

(2) If there are hot spots (undesirable concentrations of light in one spot) on the blue background or unusually dark areas, the matte looks discolored, or worse, has a tendency to break up. When lighting the foreground set, make sure there are no spotlight beams hitting the background area so that you can preserve the evenness of the chroma key background illumination.

Learning Event 2:

DEFINE AND DESCRIBE STUDIO LIGHTING EQUIPMENT

1. In order to accomplish studio lighting, we must have equipment available that is functional and easy to use. Great strides have been made over the years to improve the reliability and operational ease of lighting equipment. Studio lighting equipment is defined as the lighting instruments and accessories necessary to accomplish studio lighting.

2. Simply stated, a spotlight or "spot" is a device which focuses light in a narrow beam. Spots use a movable reflector device to make the beam narrow or wide, although its beam, even at its widest point, is still not as wide an angle as a floodlight.

a. The fresnel spot light is by far the most common and most widely used spotlight in the television studio. This type of spotlight uses a glass lens in front of the housing. The glass lens consists of concentric grooves or steps on its front surface which forms the light into a soft-edged beam as shown in Figure 1-7. Within the fresnel spotlight, the lamp and reflector position are adjusted by a crank and screw system. This allows the light beam to be made broad or narrow as desired.

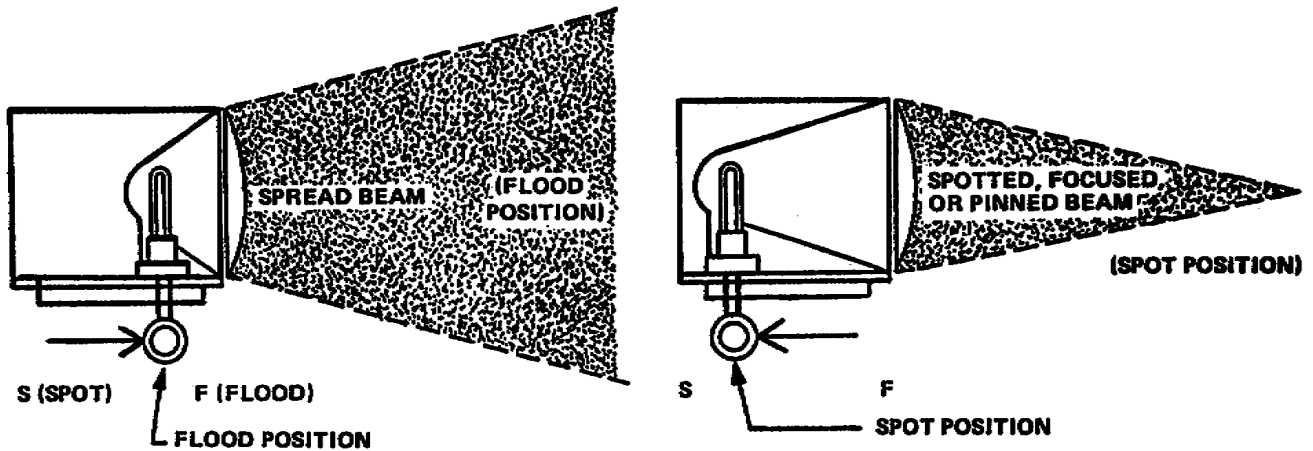


Figure 1-7. The fresnel spotlight

b. The second type of spotlight we will discuss is the ellipsoidal spotlight (fig 1-8). This lighting instrument produces intense, sharply defined light beams. The ellipsoidal spotlight is used primarily for special effects lighting. For example, if you want to create "pools" of light reflecting off the studio floor, the ellipsoidal spotlight would be the instrument to use. Even when the fresnel spotlight is in its focused position, it cannot emit as sharp an outline as the ellipsoidal.

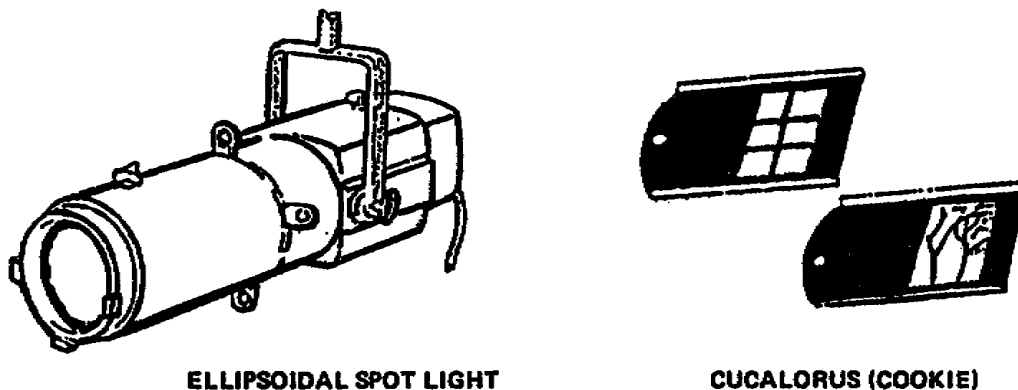


Figure 1-8. The ellipsoidal spotlight

(1) The ellipsoidal spotlight can also be used as a pattern projector. In this case, the ellipsoidal spotlight has a slot in its housing next to the beam-shaping shutters which can hold a metal pattern called a cucalorus or more simply a cookie. The ellipsoidal spotlight projects the cookie as a clear shadow pattern on any surface.

(2) The ellipsoidal spotlight is generally used for specific, precise lighting tasks, rather than for standard television lighting.

c. Another type of spotlight that is sometimes used in the studio is the follow spotlight. This type of lighting instrument is a powerful, special effects spotlight that is primarily to simulate theater or stage effects. The follow "spot" allows you to simultaneously pan (move the light left or right) and tilt (move the light up and down). The follow spot is used to follow action, such as dancers on a stage or single performers moving about in front of a stage curtain.

3. Floodlights are designed to produce a great amount of diffused light. They are primarily used to slow down the rate of falloff, reduce shadow density, and to provide base light.

a. The most common and popular type of floodlight used is known as the scoop because of its shape (fig 1-9). It is a very versatile lighting instrument that can hold colored gels, which are used to change the color of the light, or scrims, which are used to further diffuse the light and reduce its intensity.

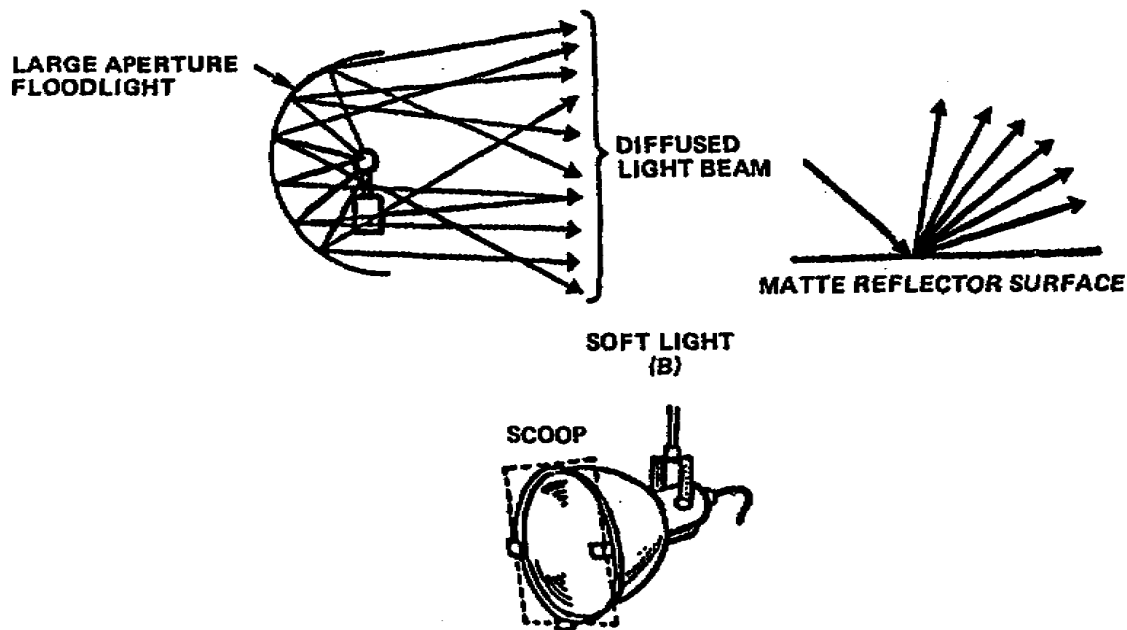


Figure 1-9. The scoop diffused light beam

b. Another type of floodlight, which acts as a series of scoops, is known as the broad. Broads illuminate a rather large area evenly with diffused light. When using broads for fill light, it is usually possible to adjust the beam of light either through the use of barn doors or with an adjustable beam, something like the fresnel spot.

c. The last type of studio floodlight we will discuss is the strip, or "cyc" light. This type of lighting instrument is used to achieve even illumination of large set areas. The strip light consists of rows of three to twelve incandescent or quartz lamps mounted in long, boxlike reflectors. Strip lights are often used for silhouette lighting, when the background must be evenly illuminated while foreground set pieces remain unlit.

4. Even though many lighting instruments have directional controls for the light beam, it is often necessary to control the direction of the beam beyond these controls. Because of this, several other devices are used to assist you. The first of these devices that we will discuss are known as the barn doors.

a. Barn doors (fig 1-10) are extremely effective when it is necessary to block certain set areas, either partially or totally, from illumination. For example, if it is necessary to keep the upper part of some scenery dark, while illuminating the lower part of that same scenery, you could simply "barn door" the upper half of the beam. Barn doors are also important for blocking the back light from shining into the camera lens, causing lens flare.

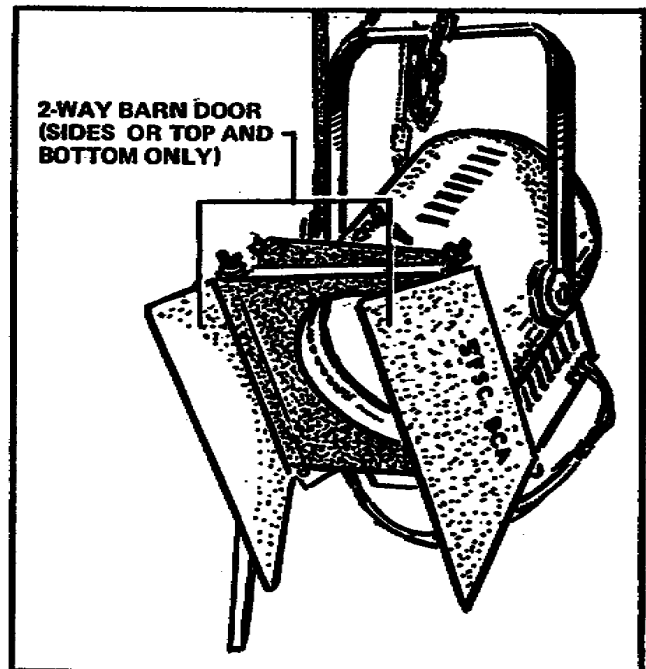
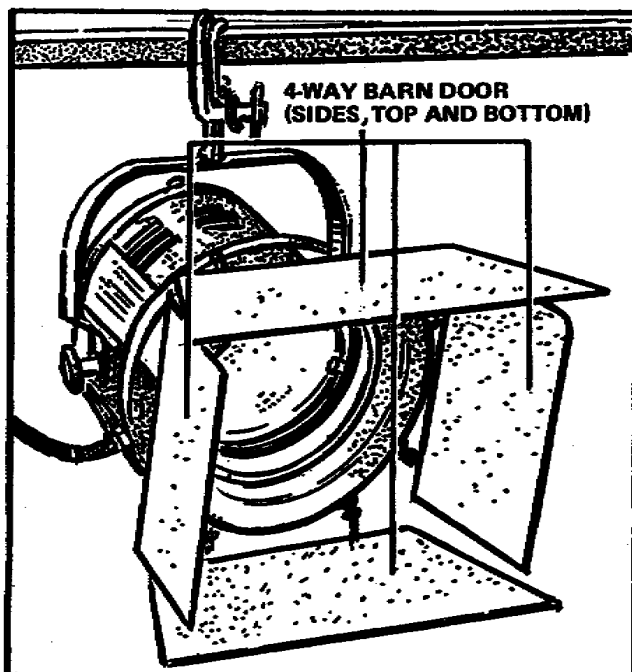


Figure 1-10. Barn doors

b. Another type of directional control device is known as a flag. Flags are rectangular metal frames with heat-resistant cloth that act much the same as barn doors except flags are not mounted directly to the lighting instrument. Flags, like barn doors, will block illumination from spilling onto unwanted areas.

c. Yet another type of directional control device is the reflector (fig 1-11). Reflectors are usually highly reflecting sheets that bounce back a strong light source onto an object or scene to slow down falloff (make shadows more translucent). Sometimes all that is needed to reflect a light source is a white cardboard sheet. Another way of making a reflector is to crumple up some aluminum foil (creating a more diffusal reflection) and tape it onto a piece of cardboard.

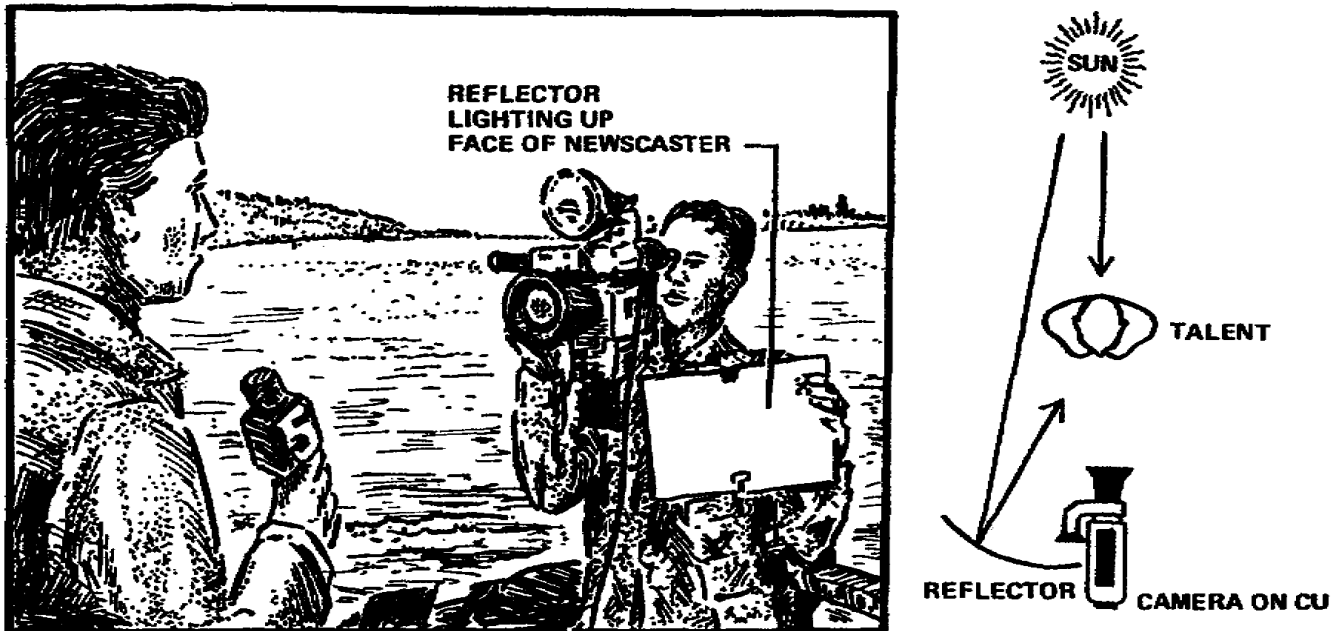


Figure 1-11. Reflector

d. The final type of directional controls we will discuss is known as the scrim (fig 1-12). Scrims are spun glass diffusers that are placed in front of floodlights or external reflector spotlights to achieve maximum diffusion of the light beam. In the studio, scrims are frequently used to produce "soft" light, especially if you need to light a large area evenly, or if you want to raise the overall base light level.

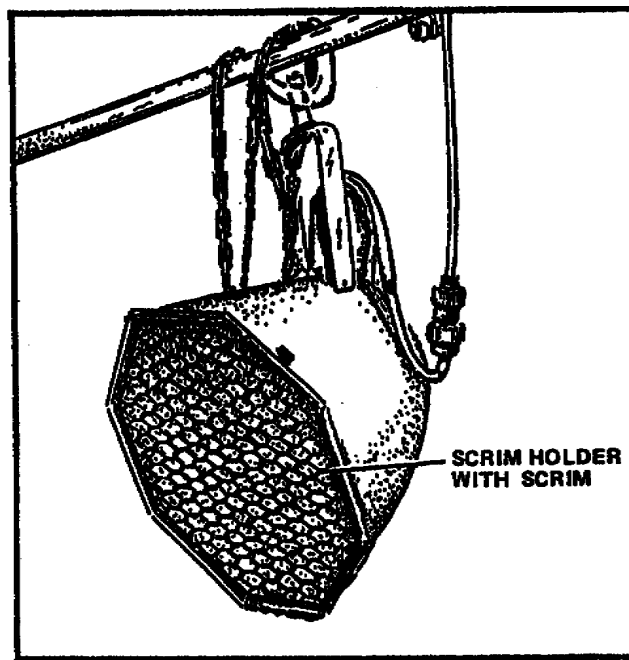


Figure 1-12. Scrim

5. Now that we have discussed the equipment used to control the direction of a beam, let us take a look at how we can control the intensity or brightness of lighting. The simplest way to control the intensity of lighting is to use only the minimum number of lighting instruments needed to light the set area. However, minimizing the lighting instruments is not always enough.

a. Another technique used to control light intensity is to use scrims, not only as light diffusers, but also to reduce light intensity. There are also thin wire mesh screens that are put in front of lighting instruments, much the same as scrims, to reduce the light output (intensity) without influencing the color temperature of the light.

b. The dimmer is the most flexible of the different light intensity control devices as it allows easy manipulation of each lighting instrument, or a group of lighting instruments, to burn at a given intensity from zero (off position) to full strength.

(1) Although dimmers are technically quite complex, their basic operational principle is quite simple; by allowing more or less current to flow to the lamp, the lamp burns as a higher or lower intensity.

(2) It can be argued that dimmers are not always useful for reducing light intensity. If the current to a lamp is reduced by more than 10 percent, the color temperature of the illumination emitted from that lamp is changed along with the light intensity. You will remember, that as the color temperature of a light source is reduced, the illumination from that light source begins to emit a reddish tint. Therefore, color temperature must be considered when using the dimmer to reduce light intensity.

(3) Dimmers, however, are used as more than simple light intensity reducers and are a very important part of lighting in the television studio. Dimmers enable you to change quickly from one type of lighting to another, or to light several areas in the studio at once and activate parts or all of this lighting whenever necessary. This eliminates, or greatly reduces, setup time between different lighting situations as all are set up and checked out prior to "show time."

(4) The patch panel, or patch bay, is a device that connects lighting instruments to the dimmer control. It allows you to connect widely scattered lighting instruments to a specific dimmer, or separate dimmers, on the dimmer control board. The patch panel, like the dimmer, is very simple to operate as all the patches are numbered to coincide with the area of the lighting grid that they activate. If a few minutes are taken by the beginning lighting technician to familiarize himself with the lighting grid and patch panel, they will be able to patch a light or a group of lights with little or no assistance.

Lesson 1
PRACTICE EXERCISE

1. Which is the best definition of lighting?
 - a. Use of a key light, back light, and fill light
 - b. Combination of overall baselight level, plus key light and back light
 - c. The contrast between light and shadow
 - d. Meeting the technical requirements of the camera while creating a pleasing picture
2. Which of the following types of light will you use to light a set?
 - a. Aesthetic and standard
 - b. Directional and diffused
 - c. Illumination and shadow
 - d. Back light and key light
3. Which of the following are two types of illumination you will be working with?
 - a. Ellipsoidal and spot
 - b. Indoor and outdoor
 - c. 3200°K and 6400°K
 - d. Incident and reflected
4. Which of the following will you use as a standard for "white" light, indoors?
 - a. 3200°K
 - b. 5500°K
 - c. 3400°K
 - d. 5280°K
5. You wish to illuminate a relatively small area with a distinct beam. Which type of light will you choose?
 - a. Directional light
 - b. Fill light
 - c. Base light
 - d. Bidirectional
6. Which of the following best defines base light?
 - a. Light source which emphasizes the outline of the object
 - b. Soft, diffused light
 - c. Widely scattered lighting controlled by the dimmer board
 - d. Overall light level on a set or event area

7. Which of the following standards will you use for outdoor color temperature?
- a. 3200°K
 - b. 3400°K
 - c. 5200°K
 - d. 5600°K
8. Which best explains contrast ratio?
- a. Outdoor lighting color temperature as compared to indoor color temperature
 - b. Difference between the lightest and darkest parts of a picture
 - c. Base light ratio versus key light ratio
 - d. Difference as defined in foot candles
9. You have selected a key light and a back light for your three-point lighting. Which other light source will you use?
- a. Directional light
 - b. Fresnel light
 - c. Side light
 - d. Fill light
10. When setting up three-point lighting, what is your primary source of illumination?
- a. Fresnel light
 - b. Hard light
 - c. Directional light
 - d. Key light
11. Which of the following light sources will you utilize to separate an object from its background?
- a. Backlight
 - b. Fill light
 - c. Side light
 - d. Key light
12. Which of the following will you use as a guide for a four-point lighting ratio?
- a. 4:1
 - b. 3:1
 - c. 2:1
 - d. 1:1

13. Which spotlight will you most likely use in television studio lighting?
- a. Fresnel
 - b. Scoop
 - c. Dimmer
 - d. Ellipsoidal
14. Which floodlight is the most popular type used in the studio?
- a. Fresnel
 - b. Dimmer
 - c. Ellipsoidal
 - d. Scoop
15. Which device would you use to block certain areas, partially or totally, from unwanted illumination?
- a. Barn doors and scrims
 - b. Barn doors and flags
 - c. Battens and barn doors
 - d. Dimmers and barn doors
16. Which device will you use to bounce the illumination from a strong light source back onto an object or scene to slow down falloff?
- a. Barn door
 - b. Batten
 - c. Reflector
 - d. Scrim
17. Which of the following devices will you use to diffuse reduce light intensity?
- a. Scrim
 - b. Dimmer
 - c. Reflector
 - d. Batten
18. What is a major drawback when using a dimmer?
- a. Safety
 - b. Hard to handle
 - c. Intensity
 - d. Color temperature may be affected

19. By which percentage can you reduce the current to a lamp without affecting its color temperature?
- a. 2 percent
 - b. 5 percent
 - c. 10 percent
 - d. 20 percent
20. Which device will you use to connect widely scattered lighting instruments to a specific dimmer or separate dimmer?
- a. Patch-to-dimmer control
 - b. Dimmer control board
 - c. Patch bay
 - d. Patch control

LESSON 2
DESCRIBE MEASUREMENT OF STUDIO LIGHT WITH A LIGHT METER

TASK

Describe light meters, their functions, and techniques of using light meters.

CONDITIONS

Given information and illustrations relating to light meters, their function and the technique of using a light meter.

STANDARDS

Demonstrate competency of the task skills and knowledge by correctly responding to 70 percent of the multiple-choice test covering descriptions of light meters, their function, and techniques of using light meters.

REFERENCES

None

Learning Event 1:

DESCRIBE LIGHT METERS, THEIR FUNCTIONS, AND THE TECHNIQUES OF USING A LIGHT METER

1. In the television studio, it is necessary that we control how much light is sent to the television camera. There are various ways of controlling the light but only one accurate way of measuring its brightness. That is with a light meter (also referred to as an exposure meter).
2. The light or exposure meter measures light intensity or brightness. Light entering the meter falls upon a light-sensitive surface, usually made of selenium, which reacts to light generating a small electric current (fig 2-1).
3. The meter is actually a microammeter which measures the current produced. The microammeter causes a needle to deflect across the face of the meter scale. The brighter the light, the more current is produced, causing greater deflection of the needle. The scale that the needle deflects across is often marked in footcandles and f/stops. For television studio lighting, the footcandle scale is the most often used.
4. When using a light meter, it stands to reason that we are measuring the amount of light on a set or event area. In actuality, we may be measuring the amount of light falling on the set or the amount of light reflecting off of the set. These two methods are called incident and reflected light measurements.

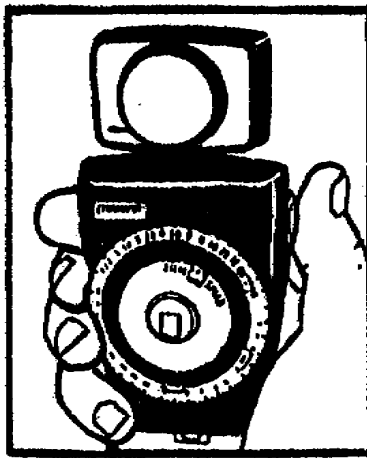


Figure 2-1. The light meter

5. Incident light measurement is measuring the amount of light falling on the set area. Incident light readings are normally taken from the position of the subject or set area being lighted (fig 2-2).

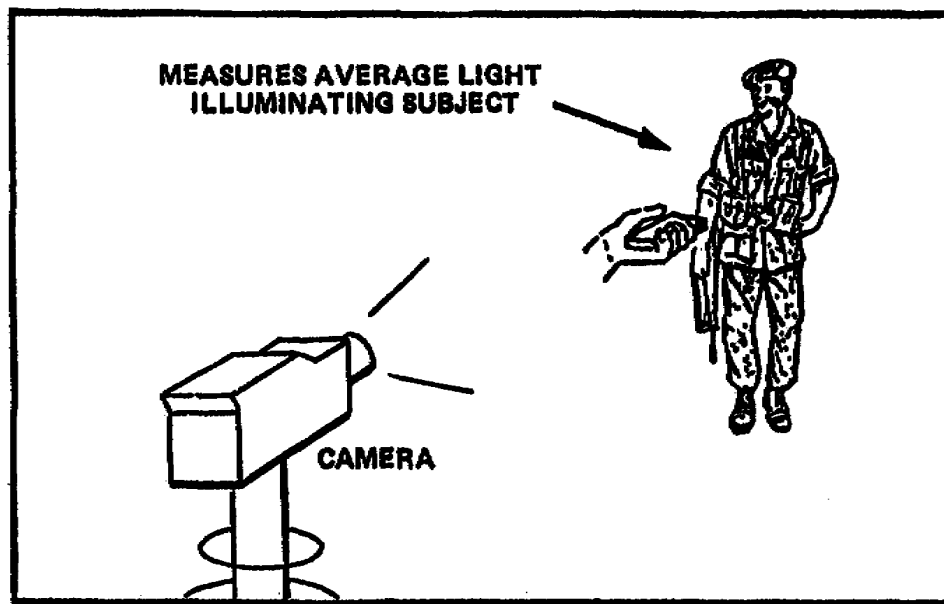


Figure 2-2. Incident light reading

6. Reflected light readings measure the amount of light reflecting or bouncing off of the subject or set area and are often used to measure the contrast ratio of a scene. These readings, if taken from the camera position as shown in Figure 2-3, measure the average light reflecting back to the camera.

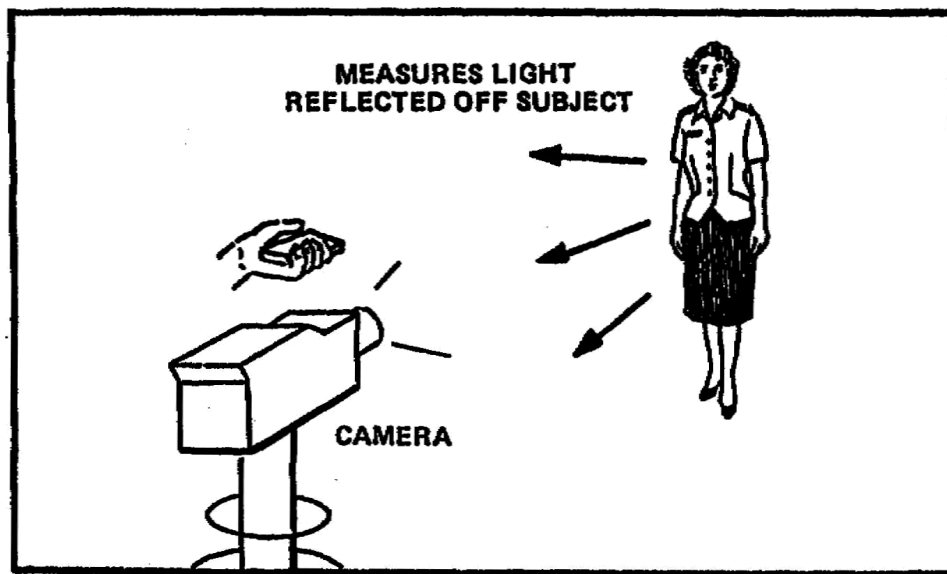


Figure 2-3. Reflected light reading

7. If reflected light readings are taken from specific parts of a scene (fig 2-3), they are used to measure surface brightness and tonal values, allowing accurate measurement of contrast ratios. This type of reflected light measurement is called the surface brightness method.

8. Refer to Table 2-1 for explanations of various methods used in measuring light, with the advantages and disadvantages listed for each method.

METHOD OF LIGHT MEASUREMENT		
INCIDENT LIGHT METHOD	REFLECTED LIGHT METHOD	SURFACE BRIGHTNESS METHOD
METER POSITIONED BESIDE THE SUBJECT POINTING AT LIGHT SOURCES.	METER POSITIONED BESIDE THE CAMERA, POINTING AT SUBJECT.	METER POSITIONED BESIDE THE CAMERA POINTING AT THE SUBJECT.
MEASURES LIGHT INTENSITY FALLING UPON SUBJECT FROM EACH LAMP DIRECTION IN TURN.	MEASURES AVERAGE AMOUNT OF LIGHT REFLECTED FROM SCENE AND RECEIVED AT CAMERA LENS.	MEASURES BRIGHTNESS OF SURFACE AT WHICH THE INSTRUMENT IS DIRECTED.
PROVIDING FOR (AVERAGE) SUBJECTS OF FAIRLY RESTRICTED TONAL RANGE TYPICAL INCIDENT LIGHT INTENSITIES AND BALANCE SUITABLE TO CAMERA CAN BE ASSESSED. BASE LIGHT, KEY LIGHT, FILL LIGHT, AND BACK LIGHT MEASURED IN TURN.	PROVIDING AVERAGE REFLECTED LIGHT LEVELS SUITABLE TO CAMERAS SENSITIVITY. MEASURE LIGHTEST AND (DARKEST TONES SEPARATELY AND USE MIDWAY READING FOR GUIDE EXPOSURE.)	PROVIDES READINGS BY MEASURING SURFACES KNOWN REFLECTANCE SKIN, (STANDARD WHITE AND BLACK). YOU CAN THEN DEDUCE THE SUITABILITY OF LIGHT INTENSITIES FALLING UPON THEM. ALSO ALLOWS SCENIC TONAL CONTRASTS TO BE MEASURED TO PREVENT OVER-CONTRASTY LIGHTING OVER LIT HIGH-LIGHTS UNDER LIT SHADOWS.
EASE OF OPERATION: METHOD IS SIMPLE AND CON CONSISTENT. DOES NOT REQUIRE EXPERIENCED INTERPOLATION WIDELY USED IN MOTION PICTURE LIGHTING.	EASE OF OPERATION: READINGS VARY WITH METER ANGLING AND EXPERIENCE IS NEEDED TO MAKE ALLOWANCE FOR SUBJECT TONES, AND CONTRAST. LARGE DARK AREAS CAUSE READINGS TO BE FALSELY LOW, ENCOURAGING OVEREXPOSURE OF HIGHLIGHTS. LARGE LIGHT AREAS GIVE HIGH READINGS WHICH MAY CAUSE UNDEREXPOSED SHADOWS	EASE OF OPERATION: METHOD REQUIRES SOME EXPERIENCE IN JUDGING THE IMPORTANCE OF INDIVIDUAL SURFACES BRIGHTNESS RELATIVE TO OVERALL EXPOSURE.
ADVANTAGES: WHEN A SHOW IS TO BE REPEATED ORIGINAL LEVELS CAN BE DUPLICATED READILY. BALANCE BETWEEN VARIOUS LIGHT DIRECTIONS READILY CHECKED.	ADVANTAGES: METHOD PROVIDES A QUICK ROUGH CHECK OF AVERAGE LIGHT LEVELS CAN FACILITATE EVENNESS OF LIGHTING.	ADVANTAGES: METHOD IS CAPABLE OF ASSESSING SURFACE BRIGHTNESS AND CONTRAST VERY ACCURATELY.
DISADVANTAGES: ARBITRARY ALLOWANCE HAS TO BE MADE FOR SUBJECT TONES. THE AMOUNT OF LIGHT REQUIRED DEPENDS UPON THE SUBJECT--WHICH THIS METHOD CANNOT ASSESS. METHOD ONLY DIRECTLY USEFULL FOR AVERAGE SUBJECT-TONES. DOES NOT TAKE INTO ACCOUNT TONAL VALUES PROPORTION OF TONES AND TONAL CONTRAST.	DISADVANTAGES: METER READINGS ARE ONLY OF AN AVERAGE NATURE WHICH VARIES CONSIDERABLY WITH TONAL VALUES AND PROPORTIONS. METHOD DOES NOT INDICATE CONTRAST RANGE OF SUBJECT OR LIGHTING. METER'S ANGLE-OF-VIEW SELDOM IDENTICAL WITH THE CAMERA-LENS WHERE 3 SINGLE SURFACE (E.G.A FACE) IS TO BE EQUALLY EXPOSED IN A VARIETY OF SETTINGS MEASURED EXPOSURE SHOULD BE CONSTANT BUT WILL VARY AS ADJACENT TONES CHANGE.	ADVANTAGES: SEVERAL SEPARATE READINGS ARE NECESSARY TO CHECK EVENNESS OF LIGHTING AND CONTRAST. METHOD MEASURES SCENIC TONES, BUT DOES NOT DISTINGUISH THEIR RELATIVE IMPORTANCE: AND HENCE THE DESIRED EXPOSURE. TONAL CONTRAST MEASUREMENTS MAY NOT SIGNIFY: IF THE TONES MEASURED DO NOT APPEAR TOGETHER IN PICTURE. IF THEIR PROPORTIONS ARE SMALL AND UNIMPORTANT. IF THEY MAY BE ACCEPTABLY CRUSHED OUT WITHOUT INJURING PICTORIAL QUALITY.
NOTE: WHERE METER IS HELD CLOSE TO SUBJECT, MEASURING INDIVIDUAL SURFACE BRIGHTNESS, METHOD BECOMES AS FOR SURFACE BRIGHTNESS METHOD.		

Table 2-1. Methods of light measurement

Learning Event 2:

DESCRIBE THE TECHNIQUE OF USING LIGHT METERS

1. As discussed in Lesson 1, it is necessary for us to measure both lighting ratios and contrast ratios.
2. Lighting ratios are realized by measuring the difference in light intensity being emitted by different lighting instruments. Lighting ratios are measured by using incident light readings. For example: to measure the lighting ratio between the key light and the fill light, when setting up three-point lighting, turn on just the key light and measure its light intensity. Then turn off the key light and turn on just the fill light. Now measure the fill light's intensity. If the key light intensity is 100 footcandles and the fill light's intensity is 50 footcandles, then the lighting

ratio between key light and fill light is 100:50 or more simply 2:1. This same procedure could be used to measure the lighting ratio for all lighting instruments in the studio.

3. Contrast ratios, on the other hand, are measured quite differently. When measuring contrast ratios, the important factor is the amount of light reflecting off the screen, rather than the amount of light falling on it. The surface brightness method of light measurement is used to measure contrast ratios. To measure contrast ratio, it is necessary to measure the scene in the different brightness areas (fig 2-3). If the lightest area of the scene reflects 200 footcandles and the darkest area of the scene reflects 20 footcandles, we have a contrast ratio of 200:20 or 10:1, well within the 30:1 contrast limits of today's color television cameras.

4. There are many different makes and models of light meters with varied options and functions. When working with your light meter for the first time, read the operating instructions and familiarize yourself with the light meter prior to taking important light readings.

5. Once familiar with your light meter, a little practice using the different methods of light measurement should enable you to measure the light levels on your set precisely and accurately.

6. The beginning lighting technician often becomes a slave to lighting measurements and ratios. Usually, a quick check of baselight levels is all that is needed for most lighting situations. In especially critical situations, it may be necessary to check reflectance of faces or bright objects. Some lighting technicians get so involved in reading the light meter that they forget to look into the monitor to see if the lighting looks the way it was intended. If you, as the lighting technician, use your knowledge of how the camera works and combine that knowledge with artistic sensitivity and especially common sense, you will not have the light meter tell you how to light; rather, you will use it as a guide to make your job more efficient.

Lesson 2
PRACTICE EXERCISE

1. You are measuring light intensity. Which of the following would you choose for accuracy?
 - a. Metric light gauge
 - b. The trained eye
 - c. Selenium calibrator
 - d. Light meter
2. Which two methods will you employ to measure light intensity?
 - a. Technical and aesthetic
 - b. Incident and reflected
 - c. Concentrated and diffused
 - d. Minimum and maximum
3. Which method of light measurement would you use to measure light falling on the set?
 - a. Aesthetic
 - b. Baselight
 - c. Incident
 - d. Technical
4. How do you measure contrast ratio?
 - a. On a waveform monitor
 - b. Using an f/stop
 - c. By measuring ASA
 - d. By measuring surface brightness
5. You are measuring light intensity emitted by different light instruments. Which ratio will you use?
 - a. Brightness ratio
 - b. Lighting ratio
 - c. Contrast ratio
 - d. Reflectance ratio
6. You are measuring the different brightness areas of your scene. Which ratio are you measuring?
 - a. Brightness ratio
 - b. Intensity ratio
 - c. Contrast ratio
 - d. Reflectance ratio

7. Which of the following is a standard contrast ratio for a color television?
- a. 60:1
 - b. 50:1
 - c. 40:1
 - d. 30:1
8. Which method of light reading would you use to measure the amount of light emitted from the object to the camera?
- a. Diffused
 - b. Optical
 - c. Reflected
 - d. Principal
9. Which method of light measurement would you use to measure the difference in light intensity between the key light and the fill light?
- a. Principal
 - b. Incident
 - c. Optical
 - d. Incandescent
10. The brightest area of your set reflects 200 footcandles whereas the darkest area reflects 20 footcandles. How would you best describe your contrast ratio?
- a. 20:20
 - b. 30:1
 - c. 20:1
 - d. 10:1

LESSON 3
DEFINE BASIC LIGHTING TECHNIQUES IN THE FIELD

TASK

Define lighting techniques in the field, describe the equipment used, and the differences between field and studio lighting.

CONDITIONS

Given information and illustrations relating to field lighting techniques.

STANDARDS

Demonstrate competency of the task skills and knowledge by correctly responding to 70 percent of the multiple-choice test covering field lighting techniques of a television production.

REFERENCES

None

Learning Event 1:

DEFINE LIGHTING TECHNIQUES IN THE FIELD AND DESCRIBE THE EQUIPMENT USED

1. When engaged in field or "remote" productions, you will not be working in the studio where all lighting equipment is in place and ready to go. Every piece of equipment; however large or small, must be hauled to the remote location and set up in places that always seem too small or too large for good television lighting. Also, there never seems to be enough time to experiment with various lighting setups in order to find the most effective one. Because of these factors, a lot of planning is necessary to complete a remote lighting task with the minimum amount of time and equipment.

a. Remote productions can vary from a simple interview in someone's office to highly complex scenes shot "on location." Regardless of how simple or complex the remote production is, you will soon find out that time is at a premium. Therefore, you must plan your lighting task within time and equipment constraints, be prepared to compromise, and strive for the best lighting possible, relative to the other production requirements.

b. When lighting for remote productions, you will find yourself confronted with both indoor and outdoor lighting requirements. Frequently, you will be using available light; that is, the illumination already present at the remote site. But there are many occasions when you must supplement the available light or provide the entire lighting for the production.

2. When shooting outdoors, the primary source of illumination is the sun. Even though we have no direct control over the sun, there are ways to make it work to our advantage. The sun's illumination can also be supplemented by using special lighting instruments and accessories.

3. The ideal light for shooting outdoors is an overcast day. The clouds act as diffusers for the hard, directional sunlight, providing an even illumination. Because the diffused light of an overcast day creates rather soft shadows and therefore slow falloff, shadows are not usually a problem. However, try not to position a person in front of a white or otherwise bright background. The auto-iris of the camera will read and adjust to the bright background rather than the person. Consequently, the person will be underexposed and appear as a silhouette in front of the properly exposed background.

4. Most outdoor lighting problems occur on bright, sunny days. During this type of day, the sunlight is highly directional and produces dense shadows (fast falloff). Here are some helpful hints of how to "shoot" in bright sunlight.

a. Whenever possible, shoot with the sun, not into it. That is, the sun should be in the camera operator's rear. If you shoot against the sun (backlit), the auto-iris in the camera lens will expose about two stops under the proper exposure causing the subject to be underexposed. If you must shoot your subject backlit, try to get as close a shot as possible and use a reflector to bounce as much light on your subject as possible (fig 3-1).

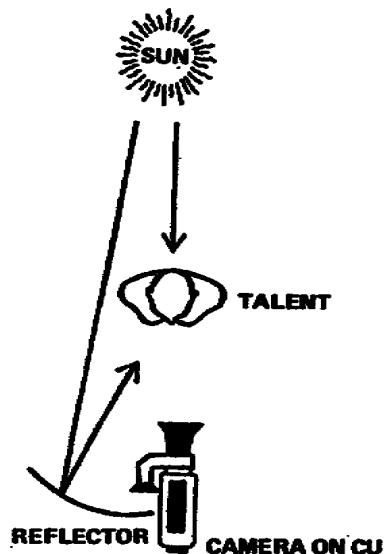


Figure 3-1. Shooting backlit

b. In bright sunlight, the problem of bright backgrounds is more severe than in the diffused light of an overcast day. Again, try to avoid shooting against a bright, sunlit background. Even if the camera is on manual iris control and is adjusted for this foreground figure, the bright background will

often push the contrast ratio beyond the 30:1 limit. This extreme contrast would cause background overexposure. If you cannot avoid the bright background, you may have to shoot the scene anyway. If this is the case, be sure your subject is exposed properly, by using the manual iris control on the camera, and allow the background to overexpose.

c. The dense shadows (fast falloff) on bright days can be lessened (slow down the rate of falloff) somewhat by using a reflector. The reflector bounces back some of the sunlight and renders the dense shadows more translucent (fig 3-2).

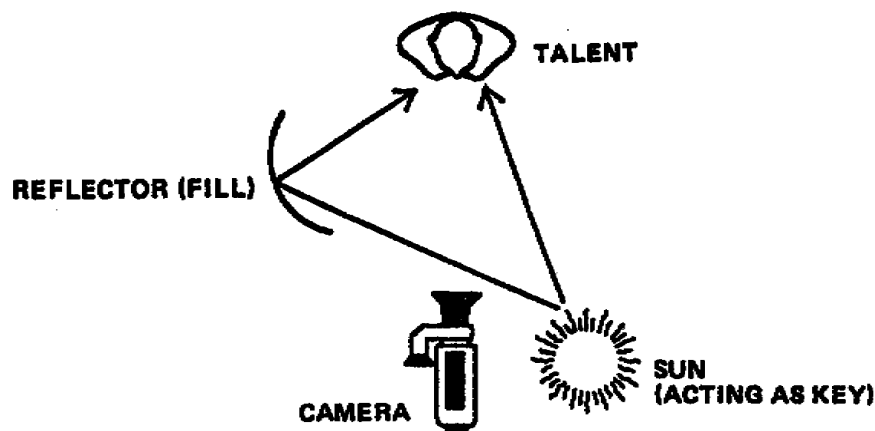


Figure 3-2. Use of reflector to lighten shadows

5. When shooting in inadequate outdoor illumination, try to keep the camera as steady as possible in order to minimize lag and comet-tailing. It is also important to note that when you are shooting under low light conditions, the camera iris must be opened much wider than when shooting under adequate lighting. This will shrink the depth of field, making the focus much more critical than when shooting in bright sunlight. This is because the amount the iris is open directly affects depth of field. When the iris on the camera is set to a wide opening, the depth of field is shallow, meaning that some parts of the scene will be in focus while others will not. In good lighting conditions, the iris will be set to a smaller opening, which increases the depth of field. If this knowledge is combined with the fact that the focal length of the camera lens also affects depth of field, (the longer the lens focal length the more shallow the depth of field will be); you should be able to shoot under low light conditions and still keep the important parts of the scene in acceptable focus.

Learning Event 2:

DESCRIBE THE DIFFERENCE BETWEEN FIELD AND STUDIO LIGHTING TECHNIQUES

1. Shooting outdoors may require the use of lighting instruments in addition to reflector. However, you will recall that most lighting instruments illuminate a color temperature of 3200 degrees kelvin. But outdoor illumination has

a color temperature of 5600 degrees kelvin. Television cameras can be adjusted to operate under either of these color temperatures but not both at the same time. Therefore, when using lighting instruments outdoors to supplement available sunlight, the color temperature of the available light and the lighting instruments used to supplement that light must be matched. Since we can't change the color temperature of the sun, we must match the color temperature of the lighting instruments to the sun.

a. The easiest method of changing a lighting instrument's color temperature is by attaching a dichroic daylight filter to the front of the lighting instrument. A daylight dichroic filter will change the color temperature of the illumination emitted by the lighting instrument to 5600 degrees kelvin, matching the color temperature of outdoor illumination. A blue gel can be used as a substitute for a dichroic daylight filter, but care must be taken to ensure that the gel does not change the illumination beyond 5600K. Otherwise, the scene will take on a bluish tint.

b. When shooting indoors, matching color temperatures of different light sources can be even more difficult than when shooting outdoors. Some interiors are illuminated by the daylight that comes through large windows, others with fluorescent lighting, and still others use desk and floor lamps to augment the daylight that is coming through windows. The major problem here is not so much how to supply additional light but how to match the various color temperatures.

2. The most difficult problem is having to shoot your subject with a large window in the background. Often a general wants to make his or her brief statement from behind a desk, and the desk may be located in front of a large viewing window. There are two lighting problems in this situation. First of all, there is a problem identical to that of a person in front of a bright background. If you set the iris according to the background brightness, the general in front tends to turn into a silhouette. If you adjust the iris to the general, the background is overexposed. Secondly, the color of the light coming through the window does not match the illumination used to light the room. If you adjust the camera to the daylight color temperature, the illumination will appear bluish. Let us take a look at some possible solutions to these problems.

a. The best method of controlling both of these problems is to draw the curtains or blinds and light the set using portable lighting instruments. Unfortunately, not all office windows have curtains or blinds. Another easy method of controlling these problems is to "shoot" your subject using only closeups, thus eliminating most of the background. The "closeup only" method is not always practical either. For instance, some people just do not look good when shown close up.

b. If you must shoot the scene with the window in the background, it is possible to cover the windows with large plastic neutral density and color correction filter sheets. Neutral density (ND) filters act like sun glasses, reducing the intensity of the light without changing color temperature. Color correction filters, on the other hand, change the color temperature of the light. A combination neutral density and color correction filter sheet can be

used to change light intensity and color temperature. Even though they are very effective, these filter sheets are not used very often primarily because of the cost associated with them, or the time that is required to put them in place.

c. Another possible method of handling this situation is to shoot your subject with the window to his side, rather than to his rear and use a reflector or a portable lighting instrument with a daylight dichroic filter attached to it as an additional light source (fig 3-3). By using this method, the daylight coming through the window is used as the key light and the additional light source or reflector is the fill light. As you can see, this allows the daylight coming through the window to be used as part of the set lighting, rather than a hindrance to it.

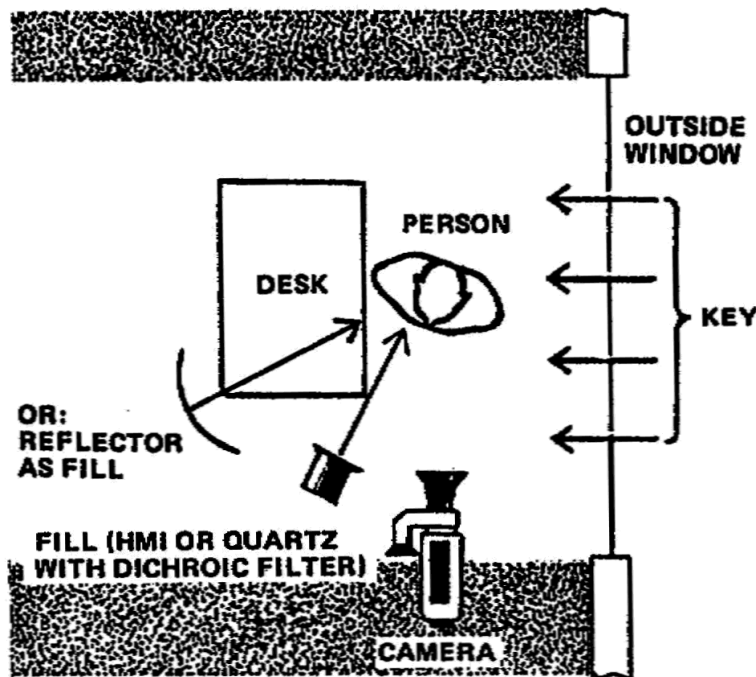


Figure 3-3. Using daylight from a window as the key light

3. The problem of working under fluorescent lights is their color temperature. It is always higher than the standard of incandescent lights (3200K). So, if you use additional lighting instruments, you are once again confronted with two color temperatures. Some lighting people advise turning the fluorescent lights off altogether when using quartz lights (3200K), but this is not always practical. If you are shooting a fast-breaking story, you just won't have time, first, to locate the building manager and persuade him to turn off the lights, then relight the scene before you start shooting.

a. If you have to use a quartz light for additional illumination, either boost the color temperature of the quartz light (using a dichroic filter) or adjust the camera using the illumination provided by the quartz light (3200K). Generally, a quartz light, such as a sun gun, is strong enough to "wash out" the bluish tint emitted by the fluorescent base light. Even if you could turn off the fluorescent lights, you might want to leave them on to

have enough base light. A higher base light allows you to work with smaller lens iris openings which increases depth of field, making it easier to focus.

b. When lighting large groups of people, such as commanders' calls or chaplains' briefings, the easiest and most efficient method to light is by establishing a general, nondirectional base light. Simply use two or three portable lights and bounce the illumination emitted by them off the ceiling or walls. If this is not possible, direct the light on the group but diffuse the light with scrims. The most efficient method is to use two or three small, high intensity lights, such as tota-lights and diffuse their beam with umbrellas (fig 3-4).

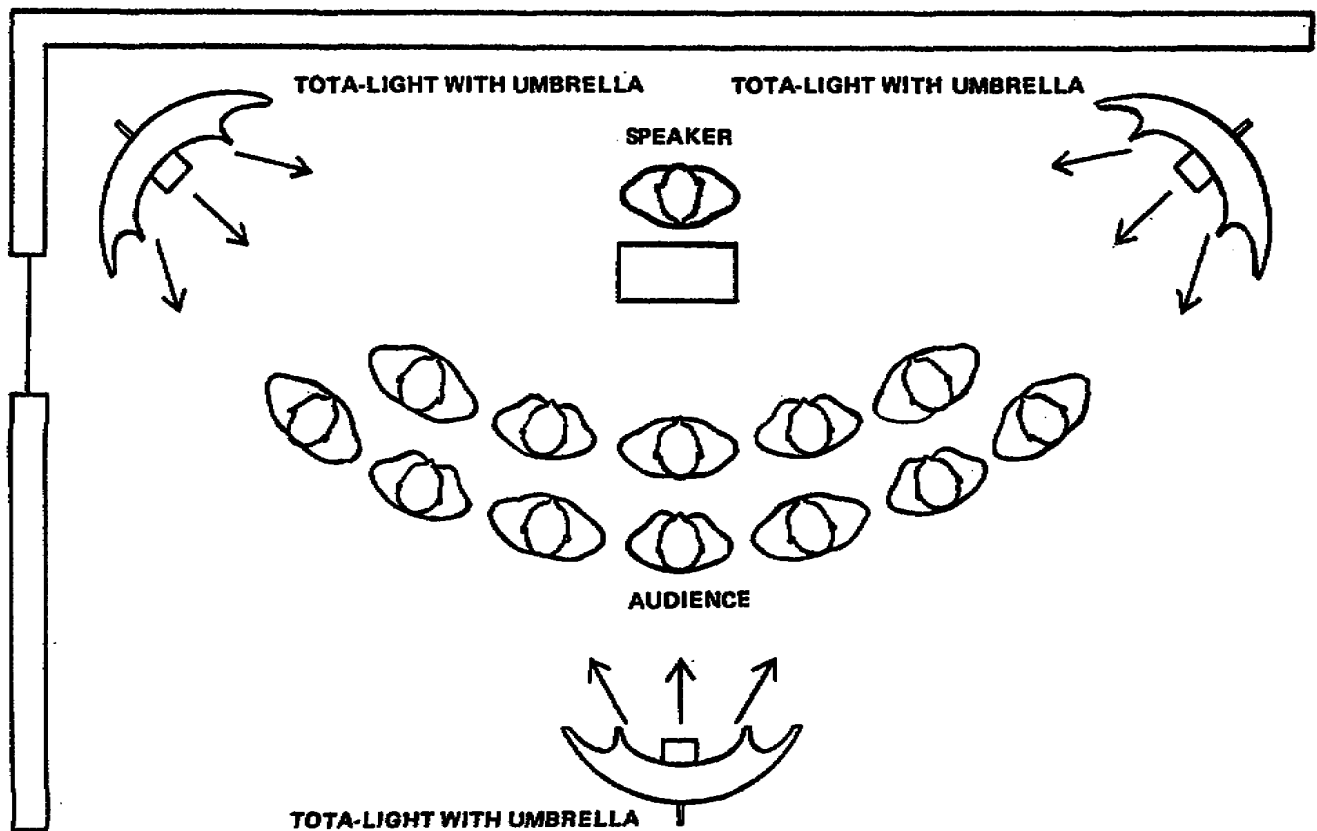


Figure 3-4. Lighting a large group

4. When time and equipment are available, the same basic lighting principles are used in field lighting as are used in the studio. If you refer to Figure 3-5, you see three-point lighting set up the same way it would be set up in the studio. In this situation, however, the portable lights are of a type that can be placed in either the spot or flood position. This lighting also shows the use of a background light.

a. It is worth noting that the background light is positioned on the same side of the subject as the key light. This is because the lighting should appear to be coming from the same direction, as if the scene were being illuminated by the sun. You will remember that in three-point lighting, the key light is the primary light source; therefore, in order to maintain directional continuity in our lighting, it stands to reason that any background lighting should come from the same direction as the key light.

b. Figure 3-5 also shows an alternative to using three lights to accomplish three-point lighting. If, because of electrical power restrictions or lack of enough lighting instruments, you cannot use three instruments, a reflector can be used in place of the fill light. The reflector will bounce enough light back on our subject to adequately fill in the shadow areas cast by the key light.

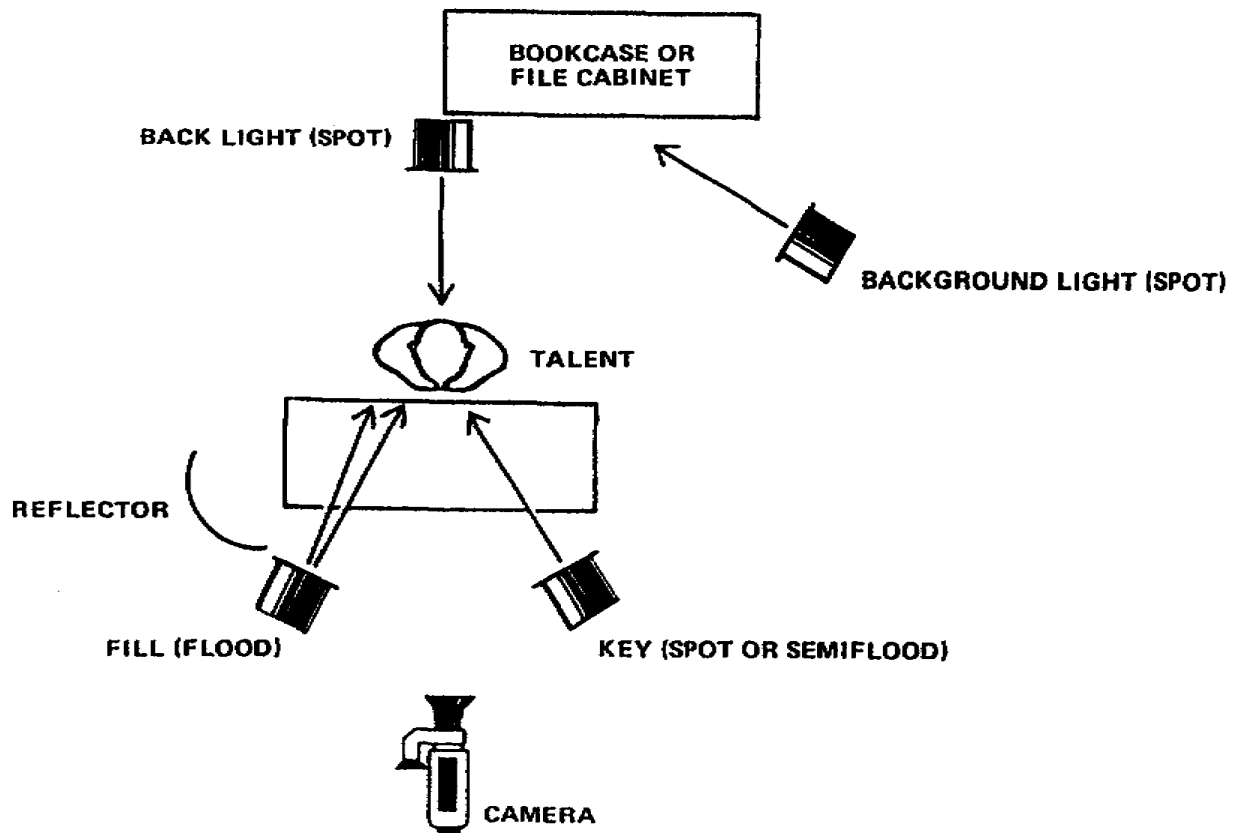


Figure 3-5. Three-point lighting in the field

5. There are many times when three- or four-point lighting is just not practical to use. A two-person interview is certainly one of those times. When lighting for this type of production, whether in the studio or on remote, it just is not practical to set up three-point lighting for each subject. Lighting this scene, using the three-point lighting setup would take six lighting instruments and a great deal of electrical power. Even if the lighting instruments and the electrical power are available, the intensity of the light from so many instruments would be extremely high causing "hot spots" on your subject.

a. A good alternative to using three-point lighting is shown in Figure 3-6. Here, the key light for the interviewer is also the backlight for the guest and the key light for the guest becomes the back light for the interviewer. This eliminates two lighting instruments while still meeting the key/back photographic principle.

b. Figure 3-6 further shows camera lights being used as the fill lights, although reflectors could be used to perform this function, further reducing the lighting instruments used.

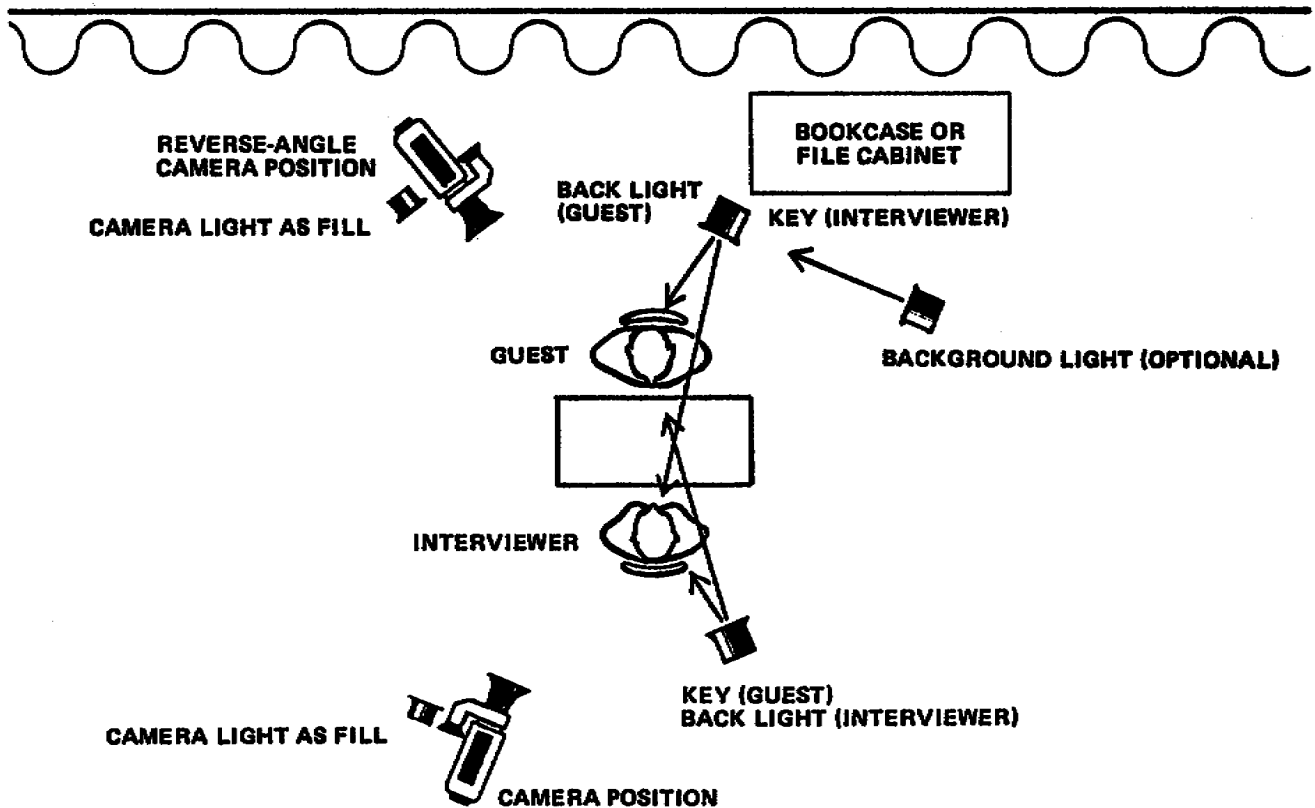


Figure 3-6. Lighting for a two-person interview

Lesson 3
PRACTICE EXERCISE

1. You are shooting outdoors, what is your primary source of illumination?
 - a. Sunbelt
 - b. Sun gun
 - c. Sun
 - d. Reflector
2. Which of the following would be the ideal situation for shooting outdoors?
 - a. An overcast day
 - b. Bright sunlight
 - c. Directional sunlight
 - d. Fast falloff
3. Your lighting situation is an overcast day with soft shadows. Which of the following best describes your falloff?
 - a. Fast falloff
 - b. Slow falloff
 - c. Medium falloff
 - d. No falloff
4. Whenever possible, what should be the position of the sun in relation to the cameraman?
 - a. Sun should be in rear
 - b. Sun should be directly overhead
 - c. Sun should be in front
 - d. Whichever the cameraman prefers
5. What will be the position of your auto-iris if you are shooting backlit?
 - a. One stop under the proper exposure
 - b. Two stops under the exposure
 - c. Three stops under the exposure
 - d. Four stops under the exposure
6. You are shooting outdoors in bright sunlight. What is the best way to lighten shadows by slowing down the rate of falloff?
 - a. Use a scoop
 - b. Use a cucalorus
 - c. Use a flag
 - d. Use a reflector

7. What is your depth of field if your camera iris is set to a wide opening?
 - a. Inverted
 - b. Long
 - c. Shallow
 - d. Great
8. Which type of filter should you attach to your lighting instrument to change your color temperature?
 - a. Neutral density
 - b. Diffusion filter
 - c. Dichroic daylight
 - d. Starburst
9. Your focal length also affects depth of field. Which of the following is a true statement?
 - a. The longer the focal length, the greater depth of field
 - b. The longer the focal length, the more shallow depth of field
 - c. The longer the focal length, the more intense the depth of field
 - d. The longer the focal length, the depth of field is inverted
10. Your subject is seated at a desk in front of a window and you adjust the camera to indoor illumination. What color will the illumination appear that is coming through the window?
 - a. Bluish
 - b. Reddish
 - c. Greenish
 - d. Brownish
11. Which filter should you use to reduce light intensity without affecting color temperature?
 - a. Diffusion
 - b. Dichroic daylight
 - c. Neutral density
 - d. Starburst
12. What is the color temperature rating of your quartz light?
 - a. 5600°K
 - b. 4800°K
 - c. 3400°K
 - d. 3200°K

13. You are positioning your background light. Where should it be positioned in relation to the key light?
- a. On the same side as the key light
 - b. Opposite from the key light
 - c. Above the subject and the key light
 - d. Below the subject and the key light
14. What is your primary light source in three-point lighting?
- a. Base light
 - b. Fill light
 - c. Key light
 - d. Back light
15. You are using three-point lighting for an on-site production. There are two lighting instruments available. What is the best alternative?
- a. Delay production
 - b. Use a reflector as a key light
 - c. Use a reflector as a fill light
 - d. Adjust for indoor illumination

ANSWERS TO PRACTICE EXERCISES

Lesson 1

1.	d	LE 1	para 3	pg	2
2.	b	LE 1	para 4	pg	2
3.	b	LE 1	para 4	pg	2
4.	a	LE 1	para 5	pg	3
5.	a	LE 1	para 4a	pg	2
6.	d	LE 1	para 6a	pg	3
7.	d	LE 1	para 5a	pg	3
8.	b	LE 1	para 6b(2)	pg	4
9.	d	LE 1	para 8b	pg	5
10.	d	LE 1	para 8c	pg	6
11.	a	LE 1	para 8e	pg	7
12.	d	LE 1	para 9b	pg	8
13.	a	LE 2	para 2a	pg	11
14.	d	LE 2	para 3a	pg	12
15.	b	LE 2	para 4	pg	13
16.	c	LE 2	para 4c	pg	14
17.	a	LE 2	para 4d	pg	14
18.	d	LE 2	para 5b(2)	pg	15
19.	c	LE 2	para 5b(2)	pg	15
20.	c	LE 2	para 5b(4)	pg	16

Lesson 2

1.	d	LE 1	para 1	pg	21
2.	b	LE 1	para 4	pg	21
3.	c	LE 1	para 5	pg	22
4.	d	LE 2	para 3	pg	25
5.	b	LE 2	para 2	pg	24
6.	c	LE 2	para 3	pg	25
7.	d	LE 2	para 3	pg	25
8.	c	LE 1	para 6	pg	24
9.	b	LE 2	para 2	pg	24
10.	d	LE 2	para 3	pg	25

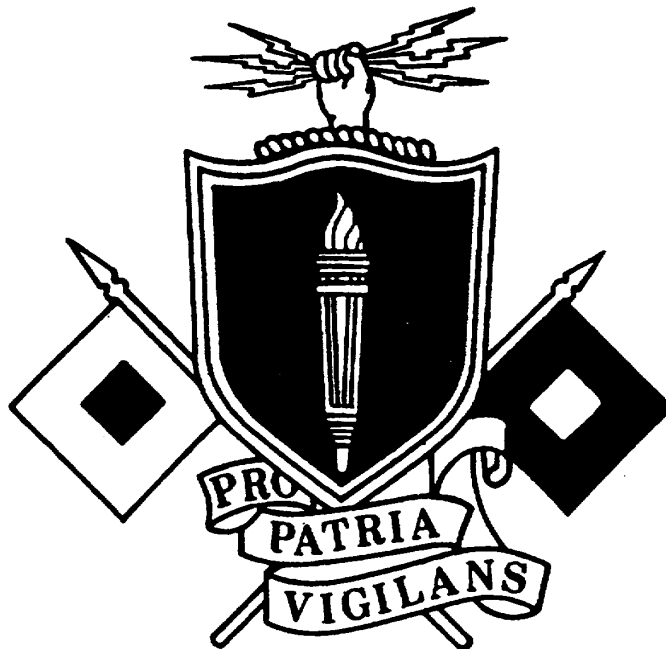
(Table 2-1)

Lesson 3

1.	c	LE 1	para 2	pg 29
2.	a	LE 1	para 3	pg 29
3.	b	LE 1	para 3	pg 29
4.	a	LE 1	para 4a	pg 29
5.	b	LE 1	para 4a	pg 29
6.	d	LE 1	para 4c	pg 30
7.	c	LE 1	para 5	pg 30
8.	c	LE 2	para 1a	pg 31
9.	b	LE 1	para 5	pg 30
10.	a	LE 2	para 2	pg 31
11.	c	LE 2	para 2b	pg 31
12.	d	LE 2	para 3	pg 32
13.	a	LE 2	para 4a	pg 34
14.	c	LE 2	para 4a	pg 34
15.	c	LE 2	para 4b	pg 34

FILMING CONTROLLED ACTION

(DEVELOPMENT DATE: 30 SEPTEMBER 1988)



**THE ARMY INSTITUTE FOR PROFESSIONAL DEVELOPMENT
ARMY CORRESPONDENCE COURSE PROGRAM**

**A
I
P
D**

**READINESS /
PROFESSIONALISM**



**THRU
GROWTH**

US ARMY AUDIO/TELEVISION PRODUCTION SPECIALIST
MOS 84F SKILL LEVEL 1 COURSE

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FILMING CONTROLLED ACTION

SUBCOURSE NO. SS0550-8
(Developmental Date: 30 September 1988)

US Army Signal Center and Fort Gordon
Fort Gordon, Georgia

EDITION 8
CREDIT HOURS: 2
NEW: 1988

This subcourse is designed to enhance your knowledge and performance of tasks relating to filming controlled action. Information in this subcourse is also available in the resident motion picture course taught in Advanced Individual Training (AIT) for MOS 84C. This subcourse is intended to provide transition and merger training for soldiers holding MOS 84F (Audio Television Production Specialist). The course is presented in two lessons, each lesson corresponding to a terminal objective listed below.

Lesson 1: PREPARATION FOR FILMING CONTROLLED ACTION

TASK:

Prepare outline and equipment for filming controlled action.

CONDITIONS:

Given information and diagrams relating to preparation for filming controlled action.

STANDARDS:

Demonstrate competency of the task skill and knowledge by correctly responding to 80 percent of the multiple-choice test questions concerning preparation for filming controlled action.

Lesson 2: FILMING TECHNIQUES

TASK:

Filming controlled action.

CONDITIONS:

Given information and diagrams relating to filming controlled action.

STANDARDS:

Demonstrate competency of the task skill and knowledge by correctly responding to 80 percent of the multiple-choice test questions covering filming techniques for controlled action photography.

These objectives are supported by these tasks:

113-577-1064	Prepare a Scene Breakdown Sheet for Controlled Action Photography
113-577-4035	Operate Camera Set Motion Picture B&H 70 HR
113-577-4040	Perform Motion Picture Filming Techniques for Television
113-577-4048	Operate Camera Set 16mm Motion Picture Arriflex 16S for a Production

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Whenever pronouns or other references denoting gender appear in this document, they are written to refer to either male or female unless otherwise indicated.

INTRODUCTION TO FILMING CONTROLLED ACTION

These two lessons on filming controlled action are designed to teach you the methods of filming controlled action within your unit. The techniques are based on the use of a motion picture camera, however, these lessons are equally adaptable to television camera usages. The television camera operators can and should use these same techniques. Increasingly, Army visual information units are becoming more tactically oriented and will require efficient motion picture filming and television documentation. Most of this filming will be performed in the field. Your ability to support the Army with useable motion picture footage or television documentation may spell the difference between mission failure and mission accomplishment.

***** IMPORTANT NOTICE *****

THE PASSING SCORE FOR ALL ACCP MATERIAL IS NOW 70%.

PLEASE DISREGARD ALL REFERENCES TO THE 75% REQUIREMENT.

LESSON 1
PREPARATION FOR FILMING CONTROLLED ACTION

TASK

Prepare outline and equipment for filming controlled action.

CONDITIONS

Given information and diagrams related to preparation of filming controlled action.

STANDARDS

Demonstrate competency of the task skill and knowledge by correctly responding to 80 percent of the multiple-choice test concerning preparation for filming controlled action.

REFERENCES

FM 11-82

INTRODUCTION

Controlled action cinematography is simply using the skills and techniques acquired through school or on-the-job training, and applying them in a situation where you control the entire aspect of the production: music, sound effects, special effects, dialogue, action, and targeted length of the project. You probably will not be filming a major production, but you will still need careful planning and preparation to make your production effective and informative. Training productions do not have to be dry, dull and boring. It is your job as the cameraman/director to make sure that the images on the screen, whether 16mm, 35mm or videotape, are clear, well composed and framed, and shot from a variety of angles to add interest and help the flow of continuity. And you may do as many retakes of a scene as needed to get it right.

The term "visual information" has replaced "audiovisual" in the Army of Excellence.

Learning Event 1:
PREPARE TO FILM CONTROLLED ACTION

1. As the name implies, in controlled action photography, while working from a carefully developed script, you control all aspects of the production, including the actors and their actions. If the actors have lines to speak, the dialogue is in the script; if the action is described by a narrator, the narrator's lines are in the script. Examples of controlled action film include training films, portions of documentaries or historical records, and many publicity and recruiting films.

2. Essentially a motion picture is another medium for telling a story. One can compare the camera to a typewriter. Each is a simple tool by which the cinematographer or author expresses himself. Many people consider motion pictures to be merely a form of photographic medium, but it is a narrative one also.

a. Basic photographic techniques include the technique of storytelling. To ensure that every film story has the required elements of story construction; central theme, introduction, buildup, climax, and ending, it is advisable that an outline be prepared.

b. Scripts, as outlines are called, vary considerably in content and degree of detail. The script is the blueprint of the production and to make your job easier, as well as ensure a smooth production, it should be carefully and thoroughly prepared.

c. Depending on the size of the production company, there may be from 5 to 25 people on the set, not including actors. The military crews usually have from four to eight. On a small production set the camera crew may consist only of a director and a camera operator.

3. Types of military productions suitable for controlled action filming may be shot on film or video tape and may be of any length, from three minutes to one hour. Training films are usually developed to assist soldiers to improve performance of critical tasks such as:

- a. Weapons maintenance
- b. Electronic/mechanical repair
- c. Safety
- d. Battlefield orientation
- e. New equipment operation
- f. Common tasks for all soldiers

4. Joint Optical Information Network (JOIN). The U.S. Army Recruiting Command uses controlled action film scripts to show candidates the type of work each military occupational specialty (MOS) offers in training and duty opportunities. These productions are normally 3 to 6 minutes in length.

5. The rules of controlled action filming are that there are no rules or limits to what can be created through your own imagination and efforts. However, no matter how brilliant your ideas may be, you will always need a plan from which to build your production.

Learning Event 2: PLAN A PRODUCTION

1. Categories of style. Generally, there are two styles of filming; fantasy and fact.

a. Fantasy is the product of imagination, and in book form it would be called fiction.

b. Factual film depicts events or activities that did, or do, take place.

(1) Films can be instructional, training or showing "how-to-do-it". They can also be documentaries - factual stories on people, places or things.

(2) A second type of factual style would be historical films, which are renderings or reconstructions of certain eras or events.

2. Preplanning your production. As with most endeavors, filming controlled action is only as good as the planning that goes into the effort. A great deal of time and money can be wasted if a person tries to complete a task without first planning how he or she will accomplish it. Generally, the more planning that is done before starting a task, the faster and more efficient will be the final outcome.

a. Preplanning must include such things as: researching the subject, writing a shooting outline, notifying team members, assembling equipment, coordinating with other agencies that may be involved with the mission, contacting the public affairs office if necessary, and ordering transportation.

b. As part of your preplanning you will want to find out if there are any special or abnormal situations that may cause problems with filming or taping. Also, it is important to keep in mind that climatic extremes can pose technical problems for the operator and his equipment. You may be stationed at a post where the temperature is 70 degrees and the sun is shining, but where you are going the temperature is 10 degrees and snow is falling. It is up to you to ensure that you and your equipment are prepared for any climatic extremes at the area you will be working in.

3. Research your material.

a. Once you are informed of the mission you can start your research. First of all, familiarize yourself with the subject matter. You may want to go to the library, look up the subject, find out what it is, where it is at, how it is played, how it works, how it is done, or how to operate it. The more you know about the subject, the more insight you will have in your filming. It would be difficult for you to film "Field Strip an M-16," if you did not know what an M-16 looked like. It is the same with any assignment; an effective cameraman understands the subject. Research makes the difference between a good product and a poor one.

(1) There are many sources for material on any given subject. If it is a military subject, you may be able to obtain the information you need in unit publication files, technical orders, or regulations. You may have a unit on your base or post that does essentially the same job as your subject and you may be able to get the basic facts about the job there.

(2) Do not forget about the post library; it is an invaluable source of facts and information.

b. After all of the necessary data has been assembled, it is time to write a shooting outline. The outline is not a script one might use in a production. It is a plan of what scenes you want to use to document a complete story. The shooting outline is one of the first steps to take in preparing to film a story.

c. Secondly, you will want to go to the various locations where you intend to film, and locate the best shooting positions. Some things to check are: location of the sun (try to keep it behind you); if indoors, is power available for lights or will equipment such as portable sun guns be necessary; what areas would be best for filming, and what angles will be best.

Learning Event 3: WRITE A SCRIPT OUTLINE FOR CONTROLLED ACTION

1. Before you can shoot a controlled action scenario, you must have a plan. The first part of planning is gathering the data necessary, then decide what script format will be used, A or B.

a. The class A script, also called the Hollywood format, is a one-column script used only when new or original footage is required. Scene description (visual) comes first and runs the full width of the page, margin to margin. The narration or dialogue (audio) follows and is indented well back from each margin. An example of a Hollywood "A" script follows:

INT. DAY. THE OFFICE OF THE FIRST SERGEANT, WHO IS SEATED AT HIS
DESK, WRITING A REPORT. THERE IS A KNOCK ON THE DOOR.

FIRST SERGEANT

Come income in.

THE DOOR OPENS AND PFC WINTERS ENTERS, DRESSED IN HIS BDU CLOTHES, WALKS TO THE DESK AND ASSUMES A PARADE REST STANCE.

PFC Joseph Winters, reporting as ordered, First Sergeant.

FIRST SERGEANT

At ease, PFC Winters. Have a seat.

PFC WINTERS NODS, AND SITS IN THE DESIGNATED CHAIR BY THE DESK.

WINTERS

Thank you, First Sergeant.

FIRST SERGEANT

(Picks up the paper he's writing)

Relax. You're my 25P. I've got a little job for you to do.

WINTERS

(obviously less tense, now)

Great, sir...I mean, First Sergeant...Film or video?

FIRST SERGEANT

Film. The colonel needs some new opening footage shot for the "Welcome to Fort Halliday" visitor's briefing.

THE FIRST SERGEANT RISES AND WALKS TO THE WINDOW. HE BECKONS PFC WINTERS TO FOLLOW HIM. THEN HE POINTS OUTSIDE.

FIRST SERGEANT

Somewhere over there on the parade ground. The first camera man's work was too flat and dark. Try to pick a good vantage point, and with people going in and coming out of the main door. Got it?

WINTERS

Yes, sir...I mean, First Sergeant. I've been waiting for a chance to put my school training to work.

FIRST SERGEANT

When did you sign in?

WINTERS

Yesterday.

NOTE: Scenes with actors and dialogue are usually shot with a MASTER shot, continuous action from one camera vantage point; then on subsequent shots, close-ups of each actor are filmed that may be edited in later. It is extremely important that each actor duplicates his previous movements for each "take", For example, if a master shot showed an actor holding a half filled glass of water on a certain line, you must ensure the same the same amount of water is in the glass on the same line when you shoot him or her for reverse angles or medium close-ups which show the glass. And make sure the same hand holds the glass as in the previously filmed shot, and at the same height or location. For the sake of continuity, polaroid camera shots are usually taken at each new scene setup to check on clothing, ties, props used, and hair styles, etc. It is not unusual to film a sequence over that may have been shot originally a few days or even weeks in the past.

b. The class B script is in a two-column format and is used when most or all of the film will be made up from stock footage. The division is vertical with scene description on the left and narration on the right. With certain "nuts-and-bolts" films, the class B format is used even though original shooting is required. Let's follow the storyline established in the A script format, with an example of the Hollywood B script format:

SCENARIO

AUDIO

EXT.DAY

Pick up PFC Winters as he comes out of the headquarters building, carrying a camera case and tripod. As he comes to front walk he hesitates, then turns to his right. (Do not PAN). Let actor make a clean exit out of the frame.

Winters: (Thinking aloud) SOME ASSIGNMENT.

SHOOT A STUPID SHOT OF

THE FRONT OF A BUILDING.

Head-on shot of Winters
as he walks a few steps,
then stops and looks to his
left. Hold until he smiles.

POV Winters. Shoot from
Winter's position a view of
the parade ground. Slowly PAN
left, then back to the right.
Stop at the Statue.

(Change Angle) Pick up Winters
crossing the street and follow
him as he heads towards the
statue.

(Change angle) Winters stops and
puts camera down and begins to
set up the tripod. Hold until he
leans over to pull down a tripod
leg.

(Change Angle) Start shot on the
boot area and hold until he sets
the tripod leg tip on the ground.

(Change Angle) Pick up Winters
extending all of the tripod legs
to the proper height.

Start shot as the platform head
of the platform is raised to
the level of Winter's nose. Hold
until Winters places a hand on
top of platform, then leans down.

Pick up hand as Winters adjusts
the knob on the tripod legs.

(Change angle) Winters stands up,
puts the tripod in place and
pushes on it from the top, with
both hands to check its stability.

WELL, NO ONE PROMISED
EVERY FILM ASSIGNMENT
WOULD BE "RAMBO III."

MAY AS WELL LOOK AT THE
OLE "H.Q" FROM GENERAL
HALLIDAY'S PERSPECTIVE.
NOT BAD. GOOD STARTING
POINT.

SUN'S NOT TOO BRIGHT.
DON'T THINK I'LL
NEED FILTERS.

GLAD I PRE-OPPED THIS
THING. IT NEEDED A
LITTLE LUBE JOB.

WHAT WAS IT INSTRUCTOR
BROWN SAID--SET THE
TRIPOD UP TO CHIN OR
NOSE...YEAH.....
AND ALWAYS TIGHTEN THE
LEGS.

OK. C'MON, ARRIFLEX
16S, LET'S GET TO WORK

Then he reaches for the camera case.

"SARGE" WANTS AN

ACADEMY AWARD WINNING

SHOT FOR THE COLONEL'S

BRIEFING.

NOTE: When using A or B script formats, the left margin information may be typed in or handwritten by the director. The choice of camera shots, long shot (LS), medium shot (MS), close-up (CU), and point of view (POV), and scene numbers, are usually written in by the director after he reads the script for the daily shoot.

c. Production scripts are basically a breakdown from the master script, or a shooting script. In order of presentation, the shooting script contains; the title, project number, requesting agency, project office, technical advisor, running time, and scene breakdown. The shooting script also shows the camera position (LS, MS, CU, ETC.); day, and a brief description of the action. A special script is simply a "retake" of some shot areas to pick up cut-ins or cutaways, or other transition-type shots to be edited into the film at some future time.

2. Sources of film material. There are a number of sources of film material. It can be original shooting, animation (the same as used for cartoons), or stock footage. Stock footage is the same way books are kept in a library. Each U.S. Armed Service maintains a film depository. The Army depository is at Tobyhanna Army Depot, PA. Historical film shot by all of the services is stored at the National Archives in Washington D.C.

3. Prepare equipment. After the outline is written, you must get your equipment together.

a. By analyzing your outline you may realize that you will need more than one camera and cameraman. This is the time to go to your NCOIC and present your outline. The NCOIC may modify it to use less equipment or personnel, but a good outline will justify itself in terms of manpower and equipment requirements.

b. In addition to camera equipment, you will need film or tape, batteries, and an extra microphone and cable.

c. No matter which position you either assign or fill yourself, the correct camera, film, and equipment must be selected.

(1) For instance, if you will be shooting from a stationary position with a tripod-mounted camera, you will need large magazines or several 3/4-inch tapes. If hand-held, you usually film 16mm or portable 3/4-inch video. So you would need to carry at least one spare film pack or two extra video tapes.

(2) Are sufficient spare parts and extra expendables available for the mission? Extra batteries are always first on a list of spare parts, followed by extra film reels and cables, spare light bulbs for lamps, extension cords, and filters. Something as simple as a broken take-up reel could completely stop a filming session. The last thing you want to happen is to run out of film, tape, or to have the batteries die. Select your equipment, test it, and make sure your film is of the right ISO and matches that of the other cameramen. A good cameraman has everything necessary to perform the mission well and to keep it going in case of equipment failure.

4. Duties of a camera crew

In order to properly film a scripted movie it is necessary to have a closely knit, well functioning crew. One person cannot possibly carry out all the jobs that must be done, unless he has extensive training and experience in each of the jobs. Now, lets look briefly at the duties of a working camera crew:

a. Director. As with all large groups there must be one central person who is in charge, in a motion picture production this person is the "director". He is in charge of the motion picture personnel, sound personnel, editorial personnel and laboratory personnel during the production of the film.

b. Director of photography. The director of photography, sometimes called the first cameraman, is responsible for the pictorial quality of the production. He also supervises the lighting of the set. The director of photography does not, as a rule, manipulate the control of the camera. That is the job of the assistant cameraman or camera operator.

c. Camera operator. The camera operator or assistant cameraman is responsible for the movements and settings of the camera. He receives instructions from the director of photography, operates the camera being used, checks that the film core is correct, and assures proper loading of the camera. As a cameraman, you, and you alone, are responsible for what comes out of your camera. In order to make sure the product is correct, it is necessary to check and double check each item before the camera rolls.

d. Assistant cameraman. On large productions there may be an assistant cameraman. His job is to assist the camera operator and may handle the follow-focus duties. Follow-focus is a technique where the cameras focus is changed while the camera is operating. You may have a scene where an actor must walk toward the camera from a long distance. This requires the camera focus to change. A good "follow-focus" assistant is a valued technician on any crew.

e. Soundman (mixer). If you are filming sound, you will have a soundman.

f. Grip. The grip is a general handyman on the set. He moves sets, scenery and props, makes general repairs, lays down camera tracks for trucking shots, and pushes the camera dolly during takes.

g. Gaffer. The gaffer is an electrician. He wires the set, provides power as necessary, and when required, brings in power generators.

5. Checklist of items to remember before, during, and after filming.

a. Prior to shooting:

- | | |
|---------------------------|---|
| (1) Preshooting inventory | Check to make sure everything needed is available for the production. |
| (2) Setting up | Secure camera, adjust lenses, work controls, clean camera aperture and lenses. |
| (3) Film scratch test | Run a short piece of film to assure there are no scratches (also called a slop test). |

b. During shooting:

- | | |
|-------------------------|---|
| (1) Focus measurement | A tape measure is used to get an exact measurement. |
| (2) Lens aperture stops | Verify that f/stop is correct on every scene. |
| (3) Shutter | Correct shutter speed and degree shutter opening (DSO) must be verified on every scene. |
| (4) Tachometer | Check the tachometer for correct film speed while filming each scene. |

(5) Filters

Verify that the correct filters and filter factors are being used.

(6) Film jams

If a film jam occurs, make every effort to correct it on camera. If this is impossible, take the camera to the loading room and save as much film as possible.

c. End of shooting day:

(1) Disassemble equipment

This includes a thorough cleaning of aperture, film chamber, lenses, and magazines.

(2) Store equipment

In proper cases, boxes, or cartons.

(3) Secure equipment

This includes both physical security of equipment (camera equipment is a favorite target of thieves) and placing equipment so that it will not fall or otherwise unintentionally cause harm.

Lesson 1
PRACTICE EXERCISE

1. Which type of controlled action film or videotape does the recruiting command use?
 - a. Soldier common task orientation films
 - b. Historical film productions or videotapes
 - c. Joint optical interservice network productions
 - d. Documentaries that show recruits what the Army was like in WWII, Korea, and Vietnam
2. What are the lengths of controlled action films?
 - a. 5 to 10 minutes
 - b. 3 minutes to 1 hour
 - c. 1 minute to 5 minutes
 - d. 30 seconds to 1 minute
3. There are five basic elements of story construction. Introduction, buildup, and ending are three of them. What are the other two elements?
 - a. Mood and location
 - b. Music and sound effects
 - c. Central theme and climax
 - d. Dialogue and action
4. What are the minimum number of technicians needed for a military controlled action production?
 - a. 25
 - b. 15
 - c. 6
 - d. 2
5. What must you always be prepared for when filming or taping a controlled action production?
 - a. Climatic extremes in the weather
 - b. Long delays due to transportation foul-ups
 - c. Interference from local unions or guilds
 - d. All of the above
6. You are told to shoot a master shot. What would you do?
 - a. Film a set series of LSs, MSs, and CUs
 - b. Film a continuous shot of an entire sequence
 - c. Shoot a series of reverse angles and long shots
 - d. Shoot CUs, LSs, and cutaways

7. What is the one thing a camera operator can do in a controlled action film that cannot be done in an uncontrolled action film?

- a. Shoot special effects footage
- b. Shoot as many retakes as needed
- c. Shoot sound on film in a 70mm camera
- d. Shoot cut-ins, cutaways, and re-establishing shots

8. Who writes in the scene numbers and type of shot to be used in the script's left margin?

- a. The chief cinematographer
- b. The director
- c. The author
- d. The cameraman

LESSON 2
FILMING TECHNIQUES

TASK

Filming controlled action.

CONDITIONS

Given information and diagrams relating to filming controlled action.

STANDARDS

Demonstrate competency of the task skill and knowledge by correctly responding to 80 percent of the multiple-choice questions covering filming techniques for controlled action photography.

REFERENCES

FM 11-82

Learning Event 1:
USE BASIC SEQUENCE

1. The foundation of good camera technique is referred to as the "basic sequence." This applies to both film and TV cameras. A basic sequence is a set of simple points used by professionals to achieve good footage. If you want to tell a story, you must put together a wide variety of shots to obtain a smooth, meaningful, visual flow of action. The basic sequence is the most important of all the camera techniques that you will learn in your motion picture or television course. In short, you must understand your medium as well as your camera; you must know pictorial continuity. Pictorial continuity is the framework of every well-constructed motion picture, whether it is a Hollywood epic, newsreel, documentary, or service training film.

2. Continuity in cinematography.

a. The main goal of a cinematographer is to present the scenes he films in such a manner that they convey a complete idea to the viewer. To accomplish this requires considerable thought and planning. Individual scenes, each presenting an idea or part of an idea, must be arranged in logical sequence. Related scenes should flow one into another so that there will be no gap in continuity. Unrelated scenes must be joined into the film with

smooth transitions so that they are accepted by the viewer as part of the story continuity. A well-filmed sequence, like a good story, starts with an interest-exciting introduction, progresses smoothly through its story, builds up to a climax, and reaches a reasonable conclusion.

b. As a motion picture or television cameraman, you will contribute the most vital element to a film production. You will supply the footage of the action and also film the footage needed for transitions that allow the editor to maintain continuity. You will work from a script when shooting controlled action, and you will furnish the scenes called for.

3. Basic sequence.

a. Every motion picture or television story is made up of one or more sequences. A sequence is a series of related scenes photographed with the long shot, medium shot, and close-up technique. Each sequence is a complete story within itself.

b. In recording activity, the need for sequences becomes even more apparent. It is important that sequences be photographed with the idea that they will portray a completely understandable story when they are put together and projected on the screen. In other words, the story must be developed in the long shot, medium shot, and closeup, and not be left to the imagination of your audience.

(1) A good cinematographer will employ the three basic sequence shots of scenes, the long shot (LS), medium shot (MS), and close-up (CU). Let's examine the long shot first. As the name implies, this is a shot taken at some distance from the subject. In the case of a man standing, it would most likely be a full-figure shot and would probably include some sky and foreground area. Second, the medium shot of the same person would probably cover from the top of his head to just below his waist line. Third, the closeup would most likely be of the person's head and shoulders.

(2) In many cases the three basic sequence shots are expanded to include the extreme long shot (ELS) and the extreme-closeup (ECU). An extreme long shot of a standing person might show him as being quite small in relation to the rest of the picture. As an example, you can visualize an extreme long shot of a boat on the shore of a lake with a small figure of a man approaching it. The LS, MS, and CU show him getting in the boat, sitting down, and preparing to start the motor. Then an extreme closeup of his hands on the starter.

(3) When shooting the basic sequence, you should bear in mind that the size of the subject in relation to the full picture area is purely relative. The camera-to-subject distance will vary for any particular long shot, depending on the size of

the original subject being photographed. For example, the distance required for a long shot of a hummingbird would be an extreme closeup of a man's face. The main point to remember is that the size of the subject, in relation to the area it occupies on the screen, determines whether it is a long shot, medium shot, or closeup. You may find it hard to differentiate between these shots. Where does a long shot end before it becomes a medium shot? There is no hard-and-fast rule governing it. Your own good judgement and opinion is the only answer.

c. A typical example of events in their logical sequence might be to place a camera in the position of a soldier when he walks into an orderly room to pick up his leave papers. His first impression is a broad general view of the room and the people in it; this is the long shot. Next, he walks closer to the first sergeant who is talking to the company clerk. The soldier approaches the group and the usual greetings are exchanged. That is your medium shot. Finally, the soldier walks up close to the first sergeant to pick up his leave papers and directs his conversation exclusively to him. At this point you see only the first sergeant's head and shoulders. Now you have your closeup. If this series of events were to be filmed, the camera lens would take the place of the soldier's eyes and normally would record the same sequence of events.

(1) To impress this concept firmly in your mind, let us repeat the entire sequence once more, only this time see Figure 2-1 as a guide.

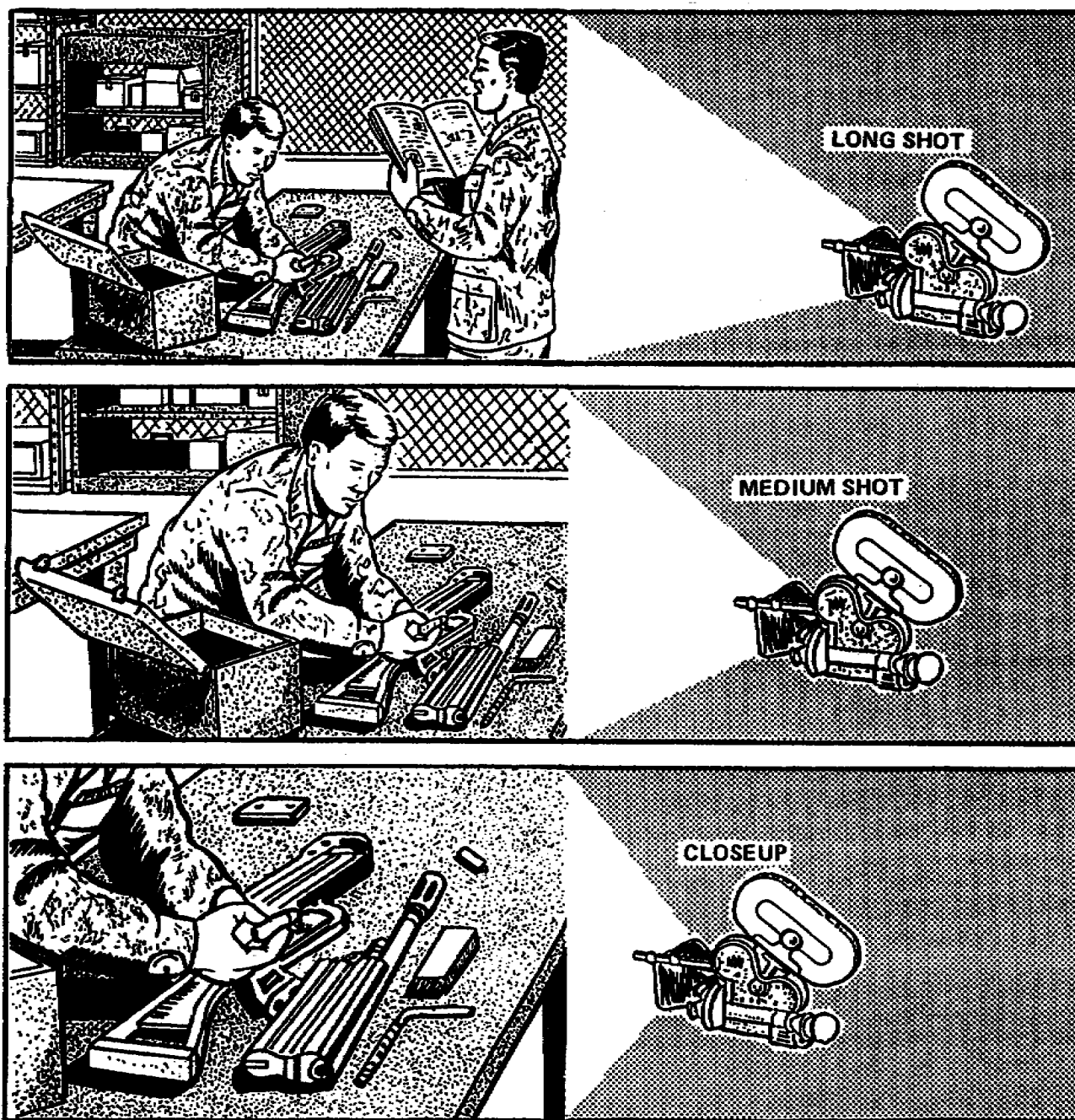


Figure 2-1. The three basic shots

(1) continued)

You can see that this scene shows a soldier field-stripping a rifle. This is basically what the long shot shows--the man is leaning over the table with the rifle parts spread out. If you are interested in this action, you would move in for a closer look, and, as you approach, at one point you would get an intermediate view of the action which is pictorially represented by the medium shot. Then when you finally arrive at the scene of the action, you see it represented by the close-up. Each shot shows the action in more detail until, in the close-up, you can

see every bit of the action. In Figure 2-1, this would be the soldier taking the weapon apart under the guidance of his squad leader.

(2) The shot breakdown, long shot, medium shot, and close-up are transitions intended to take the viewer from a distant point to the place where the action is taking place and to do it in reasonable, believable steps. There are other means of accomplishing this and they will be mentioned later.

(3) At this point you may be wondering if changes to the LS, MS, and CU sequences can be made. Can you start with the CU? Yes, you can. After you have gained some experience, you might try such a technique.

(a) To illustrate, say you are shooting a training sequence for the military police. The first shot in the sequence might show a closeup of a gun lying on the floor. Then the camera might back up and a medium shot would show an over-turned lamp and table. Immediately the viewer assumes that some act of violence has occurred. Where has this taken place? Up to this point, until he sees the long shot, the viewer doesn't know. The LS establishes the fact that the action has taken place in, say, the library of an old home, and perhaps the police are just entering the room. Notice how the 1, 2, and 3 pattern (LS, MS, and CU) has changed to a 3, 2, 1 (CU, MS, LS) pattern. One word of caution: before you try this reversal technique, be sure you are familiar with the normal pattern. The reversal technique is generally used to obtain a special effect only; it should not be overdone.

(b) You may wonder if you can use a 3, 1, 2 order. The answer is that it generally produces an incoherent sequence and tends to confuse the audience. This is not to imply that it cannot be done. Almost anything can be done to the basic sequence, but any variation of technique is dependent on the story. Be sure there is a logical reason when you deviate from the normal pattern. Remember that in most cases, the audience wants to see the action as if they were actually there.

4. There is one approach to cinematography that you must consider at all times. Anytime you are taking motion pictures, you should feel that you are actually seeing for your audience. The simple fact is that if you don't shoot a scene, your audience won't see it. As soon as you stop shooting, your audience stops seeing; and if there are gaps in the continuity, your viewers cannot fill them simply by looking around. The audience will see only what is on the screen. In the above mentioned mystery story, the culprit may have left by an open window, but the viewer won't know this unless you show the window on film. If the open window is important to the story, you must show it. Otherwise, a vital part of the story will be lost. Rather than risk

forgetting the first important point in shooting successful motion pictures or television, let's briefly review the important reasons for including all three of the basic shots.

a. The long shot. This normally is the first shot of the sequence, and establishes the locality of the area the audience is viewing; hence this shot is sometimes called an establishing shot. It also gives the audience some background knowledge to prepare them for the scenes that follow. Without the long shot your audience may wonder where they are, and where the action is taking place. The locale must be set for every sequence, and the long shot is the technique used to accomplish this purpose.

b. The medium shot. While the long shot sets the scene, the medium shot introduces the action and the audience becomes aware of who, or what, the center of interest is. In addition, the medium shot allows for smooth transition from the long shot to the closeup. Remember in our earlier orderly room scene, the long shot showed the first sergeant and the company clerk. The MS then led the viewer's attention away from the room as a whole to a group of three people. The MS also provided a smooth transition to a closeup of the main actors. A smooth transition from LS to CU is most necessary. Can you imagine the confused faces of the audience if you went from a LS of the whole room to a CU of the first sergeant's face?

c. The close-up.

(1) The close-up takes the viewer right to the action. Everything is eliminated from the scene except the particular thing you are bringing to the viewer's attention. The CU can create a feeling of intimacy and warmth. The next time you are talking to someone, notice how you are constantly looking at their face and picking out various details. Certainly you don't back off about 20 feet while talking with them. The same principle applies when shooting your film.

(2) The close-up is the most important shot of a sequence. It shows detail of the action, thereby holding the interest of the audience. You might consider it the climax of the sequence, for just as a story has its introduction, build-up, and climax, each sequence has its LS, MS, and CU, with the CU being the most dramatic of them all.

(3) But there are other applications of the close-up. For instance, in training films, the close-up shows the viewer what he is supposed to learn. Through the close-up, the actual performance of a task can be demonstrated in such a way that the viewer has little difficulty understanding it, and complex operations can be made comparatively simple. Situations of this sort usually call for a series of close-ups, perhaps three or four. After that, it is necessary to re-establish the scene to remind the viewer of the action as a whole.

5. There is, in the art of cinematography, what is known as the Absolute Rule. This rule states, "Whenever the camera is stopped, change the angle and/or image size before you resume filming." Sometimes it is preferable to change both. This rule must be followed at all times when shooting action of any type. About the only time it is not used is when you are filming animation or inanimate objects.

a. With the filming of sequences comes the problem of visual retention versus close-ups. The average person viewing a film or tape on a screen will ordinarily retain only one or two scenes immediately preceding the scene being projected. With so much of the surroundings being eliminated in close-ups, the audience occasionally must be reoriented in relation to those surroundings. Close-ups without reorientation will tend to confuse, and may even completely "lose" the spectator; especially where several close-ups appear consecutively. This reorientation is accomplished by making what is generally termed the re-establishing shot. This will be explained in the next learning event.

b. When we speak of the extended sequence we mean the basic sequence, that is; long, medium, and close-up, with the addition of extreme long shots and extreme close-ups.

c. A final point to remember is that the entire sequence can be reversed. Start with a close-up and move back to the long shot.

6. Sequence development.

a. The basic sequence technique is the fundamental step in producing a good storytelling documentation. Remember that your job is to tell a story. The basic sequence breakdown, camera angles, and overlapping action all play an important part in maintaining continuity of the story. In a motion picture, continuity is the continuous and coherent flow of the action and story. If you shoot the proper amount of overlapping action, the transition from one scene to the next is unnoticeable, thus contributing to a smooth flow. All of these things play a large part in the production of a good documentary. However, this isn't the entire offering of a good story. Many other factors must still be considered.

b. Maintaining audience interest is the main consideration of a good motion picture or television story. The picture is a failure and is not doing the job it was designed to do if the interest of the audience is lacking. In the case of an instructional or research film, the result is more than just a loss in entertainment value. A new rifle can look good, it can be sturdily constructed, and it can have the latest features; but, if it won't shoot, it's like a movie that can't keep the audience interested -- it just is not doing the job it was designed to do.

Learning Event 2:

SHOOT RE-ESTABLISHING SHOTS (RS) AND CAMERA ANGLES

1. Re-establishing shots.

a. An audience usually has difficulty remembering more than one scene back. The experienced cameraman reorients his audience from time to time by furnishing scenes for this purpose. These scenes are called re-establishing shots (RS).

(1) A series of related shots make a sequence and sequences joined together make a story. Sequences should be joined together with an RS. This makes the story clear, unbroken, and results in a smooth flow of action.

(2) The RS usually is a medium or long shot. It often follows a close-up and is used to re-establish the general scene. In other words, it reminds the audience of where they are.

(3) The RS is used to tie sequences together and to keep the audience from getting confused or lost since it can rarely keep in mind more than one scene at a time. The RS will help keep audiences oriented, reminding audiences how a small scene fits into the larger scene that includes it.

b. Re-establish the scene when the subject is moved from an old to a new location. Use the RS to end a sequence.

(1) In the RS, the camera is moved back from the closeup position and a scene is made in which the spectators once again will see where the close-ups were taking place in relation to the surroundings. Usually a medium or medium-close shot will serve very well for re-establishing, after which it is perfectly permissible to move in again for more close-ups. Not only does the RS keep the audience oriented at all times, but it lends variety in camera positions, which is always a desirable factor.

(2) Instead of ending a sequence with a closeup, use an RS. This leaves the spectator with the satisfied feeling that he has seen all the important details as the sequence ends, and is not left "hanging in midair" on a close-up while expecting a continuation of the action.

(3) Re-establishing is also used to tie two sequences together.

(a) one way of accomplishing this is to re-establish at the end of one sequence and have the person walk out of the scene. Now, by showing the person entering in the establishing scene of the second sequence, a definite relationship has been achieved between the two separate actions even though there may be some distance between the locations of the two sequences; the audience accepting the fact that the story has continued uninterrupted up to this point. This technique is called "moving out and in the frame."

(b) Another technique of tying two sequences together is to make a re-establishing shot, then pan with the person as they move from the location of the first sequence. By using the pan shot as the opening scene of the second sequence, and continuing the second sequence with medium and closeup shots, the two sequences are tied together.

c. Where two sequences take place near each other, a reestablishing shot can be made in which both locations can be seen. When sequence number 1 is finished, move the camera back to include the location of both number 1 and 2, thus establishing the second location in relation to the first location. The camera can then be moved in for the story taking place at location number 2. This conveys to the spectator the exact distance between the two locations.

2. Methods of re-establishing.

a. Re-establishing a scene. There are three methods of re-establishing a scene.

(1) The first is by pulling back; we pull or move the camera back away from the subject. In other words, we go from a closeup to a medium or long shot. We could possibly go from a medium to a long shot.

(2) The second method is pulling back and panning. This method is used to follow a subject from one location to another. This is normally used for covering short distances only.

(3) The third method is shooting a reverse angle. This is done by turning the camera around 180 degrees from the preceeding shot. It is usually used to show a subject changing location over a great distance.

b. Re-establishing action. Transitional devices are sometimes used to re-establish action. These devices are: gesture or implication; in and out of frame; clean exit and entry; and optical effects.

(1) The gesture or implication is used to show that something is about to happen and the audience knows by the gesture or implication what is going to happen next.

(2) Several in and out of frame scenes with clean exits and entries will carry the subject to a very long distance.

(3) Clean exit and entrance used once will carry a subject to a nearby location.

c. Optical effects are mechanical methods done in the laboratory to re-establish action and make transitions between sequences. The most common opticals are fade-in and fade-out, wipes, dissolves, and swish pans. The swish pan is a panning shot in which the camera moves so fast that the action is blurred and unrecognizable. These effects can be made with a television editing system when shooting TV tape.

3. These techniques are all part of filming a production. That is, you control all the action. You must first understand what makes a good film. Once you have mastered the techniques, then you will find it rather simple to make good films or tapes.

4. Using camera angles and techniques. By combining three different techniques--changing camera angles, varying subject distance, and changing camera height--you reach the ultimate in getting the most interest and variation from the basic sequence. This is not to say that you must use all the variations at all times. Each separate scene will vary as to shooting possibilities, and it is impossible to make definite rules, or if they were made, they would be impossible to follow. Rely on your judgement, and eventually your experience, to make decisions on camera angles and techniques.

a. Camera angles. Although the subject of camera angles is different from that of the basic sequence breakdown, the two are very closely tied together. Look again at Figure 2-1 and examine the soldier field-stripping a rifle. If these three scenes had been shot a little differently, the quality of the sequence could have been greatly improved. A simple way to build interest at this point is to change the camera angle between each of the scenes. When you bring the camera closer for each scene, change its angle at the same time, as shown in Figure 2-2.

(1) Very often mechanical features of the terrain force you to make a change in your camera angle. Using Figure 2-1 as an example, it is possible that an object such as a cabinet might be in the way, causing you to shoot from the rear of the table instead of the side.

(2) When changing camera angles, be careful that you do not suddenly reverse or change the camera position to an excessive degree between any two scenes. If the reversal or change is too abrupt, the scene may look as if an entirely different subject is used. By the time viewers realize what has happened, they may have lost the plot. A good rule to follow is never change angles more than 45 degrees between shots.

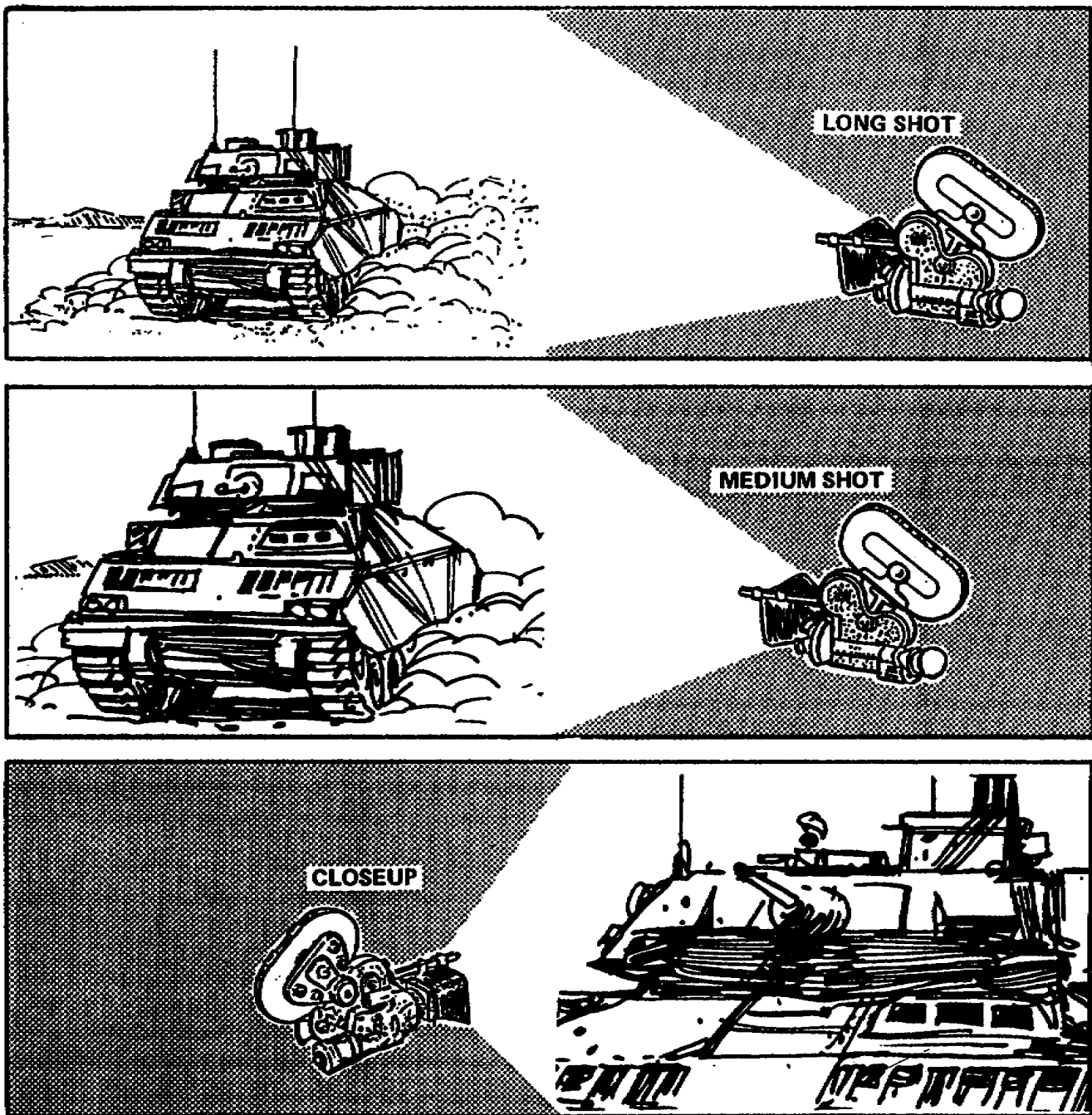


Figure 2-2. Angle and distance variation

(3) By regulating the angle at which the action passes across the axis of the lens, angle shots can serve to speed up or slow down action. Objects moving at right angles to the axis of the lens appear to be the fastest, while objects approaching the lens directly, or going straight away from it, are the slowest. Any degree of apparent speed can be obtained by selecting some angle between these two extremes.

b. Varying subject distance. It should be apparent there is a definite improvement in the sequence when you change not only the camera angle but also the subject distance. If you merely change distance, the only variation between the scenes of the sequence is the change of subject size. Moreover, slight differences in action will be more noticeable on the screen and a change of camera angle will minimize this. Another advantage of changing the camera angle is that it provides variety in your scenes and makes the overall production much more interesting.

c. Changing camera height. While you are changing the angle between scenes during the basic sequence breakdown, another variation possibility exists--you can also vary the height of the camera. For example, both the LS and MS are shot at eye level, and then, when you are coming in for the CU, you lower the camera to almost ground level. Any type of variation would be suitable here, depending on the circumstances of the sequence and the mood you are trying to convey.

(1) You will find that a low camera angle tends to make the subject higher and seem more important, while a high viewpoint tends to reduce both the size and apparent importance of the subject. Here again, a too-abrupt change of angle can cause audience confusion. Unless you are after a special effect, 45 degrees should be the maximum.

(2) The mood of a scene and its psychological effect on an audience can be molded by a proper choice of angle. For example, in some of the horror movies you have seen, the villain is usually shot from a low angle to make him seem huge and menacing, while the heroine would be seen from a high angle to emphasize her helplessness. The scene now gives you the feeling that the villain is all powerful and cannot be overcome. But when our hero comes to the rescue, he is given the low angle treatment making him the strong personality.

d. One very important point to remember when using angle shots is to be careful that your angles are not obvious. Your audience should be aware only of the action and the mental impression being conveyed. If they admire the terrific angles in your sequence, the main objective--telling the story--is lost. In the various camera angles that carry a sequence of scenes from a long shot to a closeup, each shot must match the other so closely that anyone viewing the picture on the screen will feel as though he had actually stepped closer to the person or object shown.

Learning Event 3:
USE CUT-INS AND CUTAWAYS

1. Accepting the premise that the motion picture or television audience has difficulty in recalling more than one scene immediately preceding that which is currently being screened (a fact which the reader may personally check) the cameraman may insert a special scene (or even entire sequences), between two scenes which otherwise, following in rapid succession, would interrupt story continuity. These scenes of slight, yet important, differences intended to divert audience attention are classified as either "cut-ins" or "cutaways".

2. Cut-ins.

a. A technique for maintaining continuity and bridging gaps in action is that of shooting a cut-in. As the name implies, the cut-in cuts into the action taking place and is usually a closeup or extreme close-up. In a sequence showing two people meeting, a close-up of their handshake is a cut-in. If your subject is packing for a vacation, and you wish to show how well-traveled he is, an extreme closeup of hotel labels on his bag constitutes a cut-in.

(1) For another illustration; suppose you are filming an Armed Forces radio and TV public service announcement that uses a golf game as the theme. The highlights of the action in a golf game are the drives, the various approach shots, and, of course, the putts. Then, walking is part of the game, but it would be ridiculous to try to show it all because you and the audience would be bored. Here's where the cut-in technique can make an interesting sequence out of one that would otherwise be unbearable. Your cut-in could be the shot shown in Figure 2-3.

(2) The next scene of the series most likely would be another long shot showing a continuation of the action. The golfer might approach the ball, stop, and sight the cup before making his putt. Another variation of the same technique could be a cut-in filmed in slow motion of the club hitting the ball. Or, you could use a closeup of the golfer's grip on the handle of the club. Any number of variations of the cut-in are possible.

b. Use your imagination, but do not overdo a good effect. Remember, a cut-in does just that, it cuts into the action and must have been established in the previous scene.

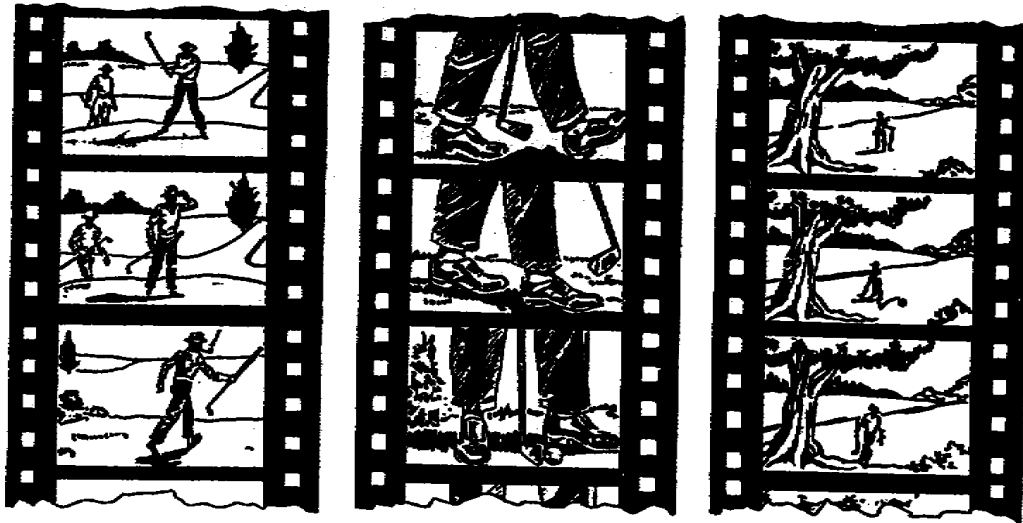


Figure 2-3. The cut-in

3. Cutaways.

a. An opposite, but also effective, technique from the cut-in is the cutaway. In a cutaway, the camera is directed away from the main action to show some parallel action that is taking place at the same time. For example, while filming a troop review, a shot of the audience is a cutaway. It is related to the main action, and although not part of it, it is a part of the story and must be shown. The cutaway smooths out the continuity by bridging gaps and is used to cover up major jumps in action.

b. The cutaway is also used to build atmosphere and stimulate the interest or the imagination of the audience. For instance, while filming a sequence in a training film about missile launching, cutaways of the block house and the strained faces of the engineers might transmit the feeling of excitement to the audience.

c. During a long story, the cutaway also helps to reorient the audience in essential parts of the plot that are not being shown at the moment. A cutaway of action taking place at widely separated locations can be included even though the scene shifts from one area to another if the transition is smooth and acceptable. A simple illustration of the effective use of the cutaway is shown in Figure 2-4. Variety and interest in a golf game are increased by a cutaway to the caddy showing him removing the flag from the cup.

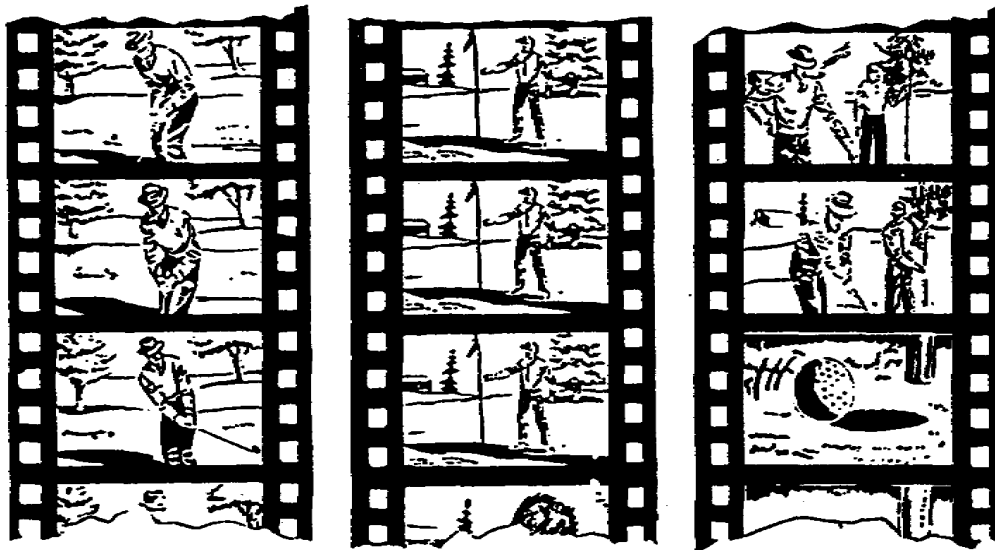


Figure 2-4. The cutaway

4. Requirements and limitations of cut-in and cutaway scenes.

a. In order for scenes to be considered suitable for use as cut-ins or cutaways, they must meet certain requirements. These limitations are three-fold:

(1) The scenes must change audience attention from what otherwise would be a loss of continuity in order to prevent audience distraction. Losses of continuity can be prevented by footage which includes jumps in action, changes of screen direction, or allowance for time passage.

(2) The scenes must be part of the immediate action (a cut-in) or pertain to the story (a cutaway). Footage which does not contribute to the story is not suitable for use. Rather than aid in keeping the audience oriented to what is occurring, such footage would only serve to confuse the viewers and contribute to the loss of continuity.

(a) If the cut-in or cutaway is to be useful in maintaining audience orientation, it must be clearly established in the audience's mind. The two methods by which this may be accomplished are by either visual awareness on the part of the audience or by suggestion resulting from reasoning or expectation of the audience. For example, a long shot of the grounds where a training film fire sequence was taking place, would show some spectators who would normally be expected at the site of a catastrophe. Later, close-up scenes of one or more of these bystanders could be used as cutaways.

(b) The audience had previously been made aware of onlookers by actually seeing them (visual awareness).

(c) The cameraman could then film close-ups of any "extras" (actors) as cutaways, providing they had concerned looks on their faces.

5. Because a cut-in must have been clearly brought to the attention of the audience, as well as having appeared in the immediately preceding scene, the cameraman cannot be satisfied with merely having the cut-in material included in the first scene. The camera angle, image size, and action must be such that where the cut-in is screened, the audience will immediately recognize and understand it. Being part of the immediate action and having been included in the preceding scene, the cut-in is usually a medium shot or close-up.

6. Cutaways, not part of the immediate action, but pertaining to the story, do not necessarily appear in the preceding scene, but must have been established, either visually or by suggestion at any earlier point in the story. Therefore, a cutaway may be anything from an extreme long shot to an extreme close-up.

Learning Event 4:

MAINTAIN SCREEN DIRECTION

1. What screen direction is.

a. In motion pictures, your subject spends considerable time moving about. When the subject is seen on the screen going from one place to another, the direction it takes is known as screen direction. It seems obvious that once your subject establishes the direction he is going to take, the audience should see him move in that direction until there is some logical reason for him going in another direction. The audience should then be made aware that the subject is changing direction.

b. To illustrate, suppose you are making a training film that starts with a parade and your camera is set up as shown in Figure 2-5. The troops are moving from left to right in front of your camera and will move from left to right across the screen. If you cross the street and pick up the same subjects (fig 2-6), you reverse their screen direction. Even though the parade is still going in the same direction down the street, it is crossing in front of the camera from right to left, and will take that same screen direction. To the viewer, it will look as though the parade is returning to its starting point. He may be completely confused. Thus, you owe it to your viewer to keep him oriented.

2. Maintaining screen direction.

a. It is not difficult to maintain screen direction when you are shooting controlled action that behaves in a predictable manner. A simple method for establishing and maintaining screen direction is to use an imaginary line drawn through the direction of travel. In the case of the parade (fig 2-7), the imaginary line is from the rear through the front of the car, or, left to right. If all your shooting is done from the same side of the imaginary line there is no problem. All your shots will have left to right screen direction.

b. Sometimes it is necessary to take up a camera position on the opposite side of the action. And sometimes it is necessary to have your subject change direction. In either case, you must let your audience know that the change is taking place. Some of the ways that you can show or mask changes in screen direction are:

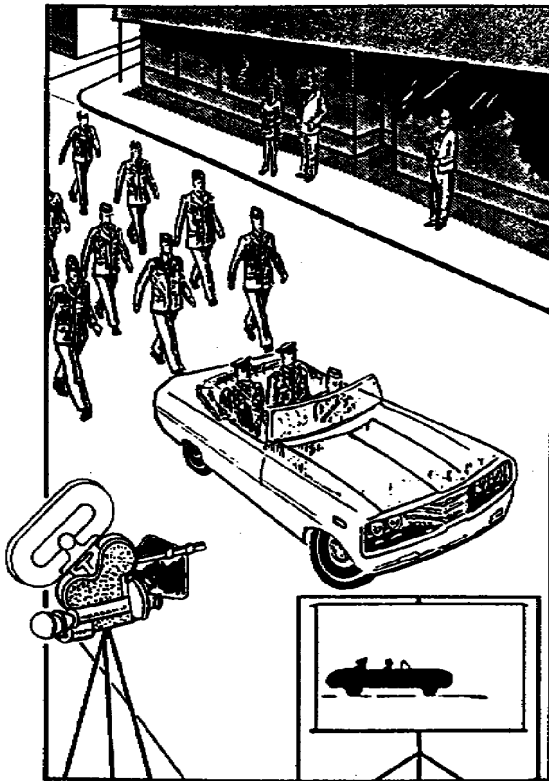


Figure 2-5. Screen direction

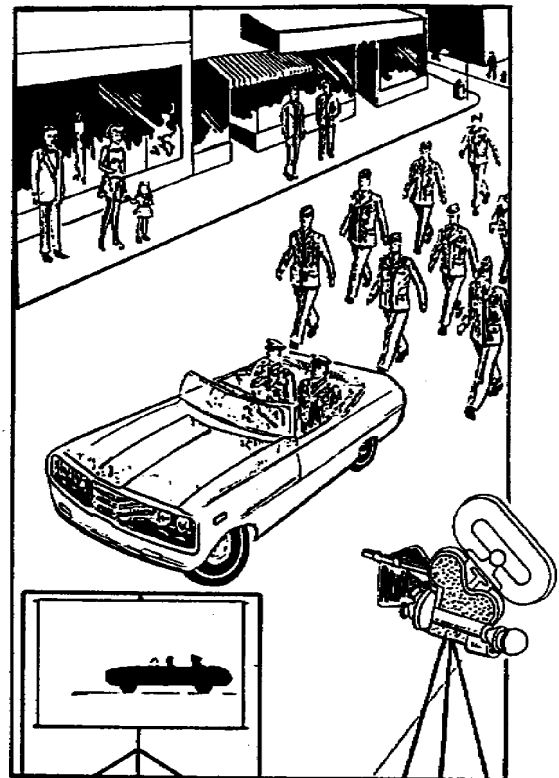


Figure 2-6. Screen direction reversed

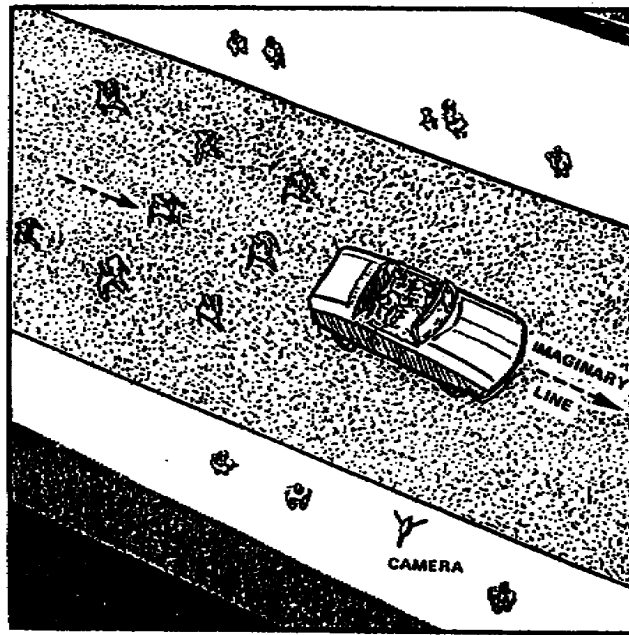


Figure 2-7. The imaginary line

(1) Have your subject actually change direction and show the change on the screen. If you film a sequence showing a sentry walking his post, show him moving in one direction; then pick him up as he is doing an about face and show him moving in the opposite direction.

(2) Gradually film around your subject and include a neutral shot. In the parade scene mentioned previously, if you film from the other side of the street you could have worked around the vehicle. This of course will change screen direction. Before crossing the street you would have to move out in front for a "head-on" shot, or behind for a "tail away" shot, either shot is neutral in direction. Now you can pick up the action from the opposite side of the street. The screen direction is reversed, but the audience knows how it came about. Remember not to change your angle too abruptly or it will cause a shock to the audience. Gradually working around the subject is the key to this technique.

(3) Introduce a scene (cutaway) to divert your audience. The attention of the audience can be diverted from the screen direction of the subject by the use of a cutaway. Again using our parade scene as an example, to conceal the change in screen direction, a cutaway shot of a person watching the parade will serve to divert the audience awareness in the change of screen direction. It is always better to use two or more cutaway scenes in a diversion situation, thereby utilizing the audience's inability to remember more than two scenes back.

(4) Use of a prominent object to orient the audience to the movement of your subject. Use a reference point that the

audience can recognize, as, for example, our subjects in the parade marching toward a prominent statue. One cameraman filmed the scene from one side and another cameraman filmed the action from the other side. These two scenes edited together would have contrasting screen direction. By seeing the statue in both scenes the audience will accept the fact that the subject is still going in the same direction.

3. Contrasting screen direction. Abrupt changes in screen direction are sometimes used to create special effects.

a. For example, scene 1 is a sports car speeding from left to right across the screen. Scene 2 is a fast passenger train crossing the screen from right to left. Scene 3 cuts back to the car, and scene 4 shows the train again. The audience begins to realize the car and the train are coming together and a crash is imminent. But, the car's direction must remain from left to right, and the direction of the train must remain from right to left. The whole effect will be lost should the car or train change direction. Contrasting screen direction creates suspense.

b. In travel sequences, be map conscious. If you have a plane, car, or person going from New York to California, they should move from right to left on the screen, as you would picture it on a map. Conversely, if a person, boat, or plane is going from New York to England, the object should move from left to right on the screen; again as you would picture it on a map. This is known as map direction.

4. Dynamic screen direction is shown as moving bodies either from left to right or right to left, while neutral screen direction is moving away from or towards the camera. A static direction is that of a body at rest. Remember that even the static body must show screen direction. Remember also the imaginary line. Crossing improperly will change screen direction and cause confusion. Finally, clean entrances and exits are important when introducing or eliminating different elements, whenever a series of moving shots are filmed against different backgrounds, or when a subject moves from one room to another.

5. You can now establish a few rules to help maintain screen direction.

a. Remember the direction in which your subject is moving at the end of a scene. Maintain that direction in the following scene. Use the imaginary line.

b. Show the subject making changes in direction, whenever possible.

c. Visually explain the change to your audience so they can maintain continuity.

Lesson 2
PRACTICE EXERCISE

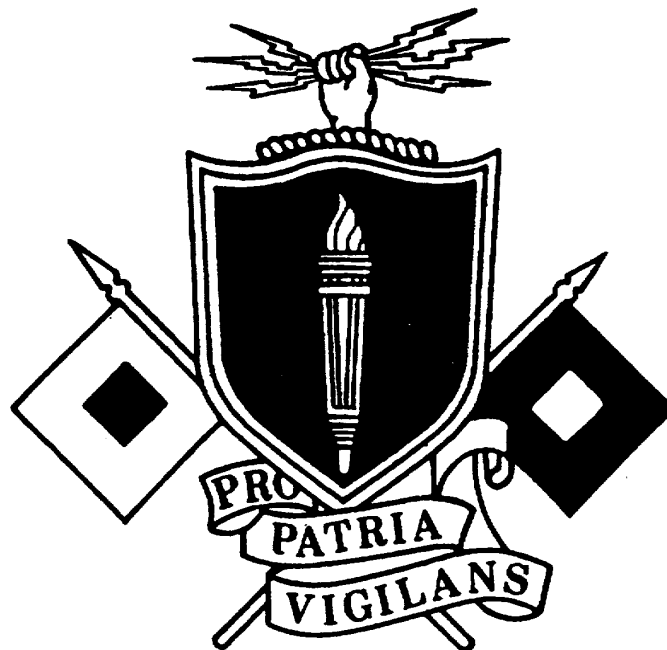
1. What is included in an extended sequence that is NOT in the basic sequence?
 - a. Long shot
 - b. Close-up
 - c. Re-establishing shot
 - d. Extreme close-up
2. What is the foundation of good camera technique?
 - a. Shoot everything
 - b. Basic sequence
 - c. Different angles
 - d. Various shooting speeds
3. Which is the main goal of a cinematographer?
 - a. Cover scenes
 - b. Expose total film
 - c. Shoot basic sequences
 - d. Convey a complete idea
4. Which shot is used to re-orient the audience?
 - a. Change in angle
 - b. Extreme close-ups
 - c. Cut-ins or cutaway
 - d. Re-establishing shots
5. You want to show a person as powerful and tall. Which technique will you use?
 - a. Close-up
 - b. Medium shots
 - c. Shoot from the left
 - d. Shoot from a low angle
6. In the final analysis of a motion picture, what is the main consideration?
 - a. Good exposure
 - b. Complete basic sequence
 - c. Maintaining audience interest
 - d. Total use of cut-ins and cutaways

7. You want to divert the audience's attention. Which technique will you use?
 - a. Distractive scenes
 - b. Cut-ins or cutaways
 - c. Extreme long shots
 - d. Extreme close-ups
8. What is one purpose of the cutaway?
 - a. Show specific action
 - b. Cover major jumps in action
 - c. Complete a basic sequence
 - d. Maintain screen direction
9. How can you show or mask changes in screen direction?
 - a. Film around your subject
 - b. Shoot an extreme long shot
 - c. Shoot an extreme close-up
 - d. Shoot a reverse angle
10. You want to show an imminent disaster. Which filming technique can you use?
 - a. Rapid basic sequence
 - b. A series of cut-ins
 - c. Long shots and close-ups
 - d. Contrasting screen direction
11. When should you use contrasting screen direction?
 - a. To show distraction
 - b. To cover jumps in action
 - c. To create suspense
 - d. Confuse the audience

ANSWERS TO PRACTICE EXERCISES

Test Question Number	Correct Response	(Learning Event	<u>Reference</u> Paragraph	Page)
Lesson 1				
1	c	1	4	2
2	b	1	3	2
3	c	1	2a	2
4	d	1	2c	2
5	a	2	2b	3
6	b	3	1a (note)	6
7	b	1	1 (intro)	1
8	b	3	1b (note)	8
Lesson 2				
1	d	1	5b	20
2	b	1	1	14
3	d	1	2a	14
4	d	2	1a	21
5	d	2	4b (1)	25
6	c	1	6b	20
7	b	3	1	26
8	b	3	3a	27
9	a	4	2b (2)	31
10	d	4	3	32
11	c	4	3	32

**APPLICATION OF TV TEST EQUIPMENT
DEVELOPMENTAL DATE; SEPTEMBER 1986)**



**THE ARMY INSTITUTE FOR PROFESSIONAL DEVELOPMENT
ARMY CORRESPONDENCE COURSE PROGRAM**

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**THRU
GROWTH**

U.S. ARMY RADIO/TELEVISION SYSTEMS SPECIALIST
MOS 26T SKILL LEVEL 1

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APPLICATION OF TV TEST EQUIPMENT

SUBCOURSE NO. SS0602-6

(Developmental Date: 30 Sep 86)

U.S. ARMY SIGNAL CENTER
Fort Gordon, Georgia

Six Credit Hours

GENERAL

The Application of TV Test Equipment block is a major part of the Radio/Television System Specialist, MOS 26T Skill Level 1 course. This subcourse is designed to teach the knowledge necessary to perform tasks related to maintenance and repair of television system equipment. Information is provided on several tasks which are performed at increasing levels of difficulty at Skill Levels 1 and 2. The subcourse is presented in three lessons, each lesson corresponding to a terminal objective as indicated below. This subcourse will assist personnel in MOS 41E to merge into MOS 26T30 as prescribed by AR 611-201.

Lesson 1: APPLICATION OF TEST METERS

TASK: Describe and identify theory and terminology used in the application of test meters.

CONDITIONS: Given the information and illustrations about terms and theory relating to application of volt/ohmmeter for TV maintenance.

STANDARDS: Demonstrate competency of the task skills and knowledge by correctly responding to 80 percent of the multiple-choice test covering theory and terminology of the application of test meters.

Lesson 2: DEFINE THE THEORY AND APPLICATION OF AN OSCILLOSCOPE

TASK: Describe the theory and terminology related to maintenance procedures for the oscilloscope.

CONDITIONS: Given the information and illustrations about terms and theory relating to application of the oscilloscope.

STANDARDS: Demonstrate competency of the task skills and knowledge by correctly responding to 80 percent of the multiple-choice test covering theory and terminology of using an oscilloscope.

Lesson 3: DESCRIBE THE APPLICATION OF GRATING GENERATOR, DOT BAR GENERATOR, AND VIDEO SWEEP MARKER GENERATOR

TASK: Describe the theory and terminology of maintenance with the application of video sweep marker generator, grating generator, and dot bar generator.

CONDITIONS: Given information and illustrations about terms and theory relating to the application of video sweep generator, grating generator and dot bar generator.

STANDARDS: Demonstrate competency of the task skills and knowledge by correctly responding to 80 percent of the multiple-choice test covering theory and terminology of the application of video sweep marker generator, grating generator, and dot bar generator.

This subcourse supports the following MOS 26T tasks:

113-575-0021	Troubleshoot and Repair a Television Receiver
113-575-0038	Troubleshoot and Repair Video Pulse Distribution Amplifier
113-575-0040	Troubleshoot and Repair a Sync Generator
113-575-0041	Troubleshoot and Repair a Character Generator
113-575-0042	Troubleshoot a Reel-to-reel Audio Tape Recorder/Reproducer
113-575-0043	Troubleshoot a Color Television (TV) Camera
113-575-0044	Troubleshoot a 3/4-inch Video Cassette Recorder/Reproducer (VCR)
113-575-0045	Troubleshoot a Television Transmitter
113-575-0046	Troubleshoot a Television (TV) Video Switcher
113-575-0049	Troubleshoot a Time Base Corrector
113-575-2040	Perform Functional Check of a Color Television (TV) Film Chain Camera
113-575-2041	Perform Functional Check of a Color Television (TV) Camera System
113-575-2042	Perform Functional Check of a Color Television (TV) Studio Camera Colorplexer
113-575-2043	Perform Functional Check of a Color Television (TV) Studio Camera
113-575-2044	Perform Functional Check of a Small Format Television (TV) Recording System, Using a 3/4-inch Video Cassette Recorder/Reproducer (VCR)
113-575-2045	Perform Functional Check of a Time Base Corrector (TBC)
113-575-2047	Perform Functional Check of a Television (TV) Transmitter
113-575-3029	Perform Daily Maintenance on a 3/4-inch Video Cassette Recorder/Reproducer (VCR)
113-575-3031	Perform a Complete Color Convergence of a Color Television (TV) Receiver
113-575-3033	Perform Measurement of the Visual and Audio Transmitter Carrier Frequency

113-575-3035	Perform Daily Maintenance of a Television (TV) Video Switcher
113-575-3036	Perform Preventive Maintenance of a Character Generator
113-575-4010	Replace a Color Picture Tube (CRT)
113-575-4011	Replace Faulty Television (TV) Studio Camera Cable
113-575-4012	Replace RF Transmission Lines Between Antenna and RF Modulators
113-575-8017	Perform Alignment Check of a Wave Form Monitor

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Whenever pronouns or other references denoting gender appear in this document, they are written to refer to either male or female unless otherwise indicated.

INTRODUCTION TO APPLICATION OF TV TEST EQUIPMENT

The complexity of today's electronic technology requires that a technician become as knowledgeable and experienced in as many facets of his/her career field as possible. The purpose of this subcourse is to provide the technician, MOS 26T soldier, with an overall view of some of the test equipment used in this field with some guidelines on how to use it to troubleshoot any equipment, including what to look for, how to check it out, and a few procedures to be followed. It is also meant to assist MOS 41E personnel to merge into MOS 26T30, as prescribed by AR 611-201, and to help anyone cross-train into the 26T career field.

LESSON 1
APPLICATION OF TEST METERS

TASK

Describe and identify theory and terminology used in the application of test meters.

CONDITIONS

Given the information and illustration about terms and theory relating to application of volt/ohmmeter for TV maintenance.

STANDARDS

Demonstrate competency of the task, skills and knowledge by correctly responding to 80 percent of the multiple-choice test covering theory and terminology of the application of test meters.

REFERENCES

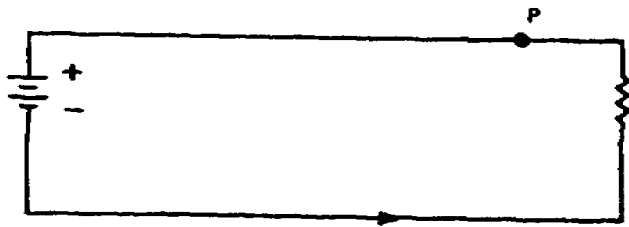
None

Learning Event 1:

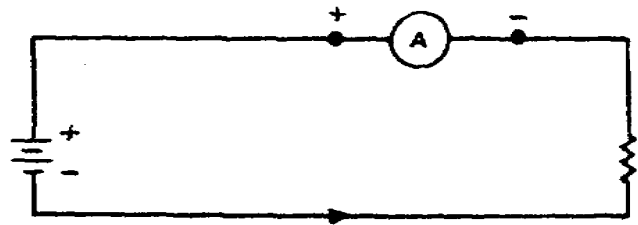
DETERMINE WHAT A MEASURING INSTRUMENT IS

1. Measuring Instruments. The primary measuring instrument that you use in performing maintenance tasks are the ammeter, the voltmeter, and the ohmmeter. These three instruments are basically current measuring devices. The main difference in construction is that an external resistance is connected with respect to the moving element in different ways.

2. Ammeter. The electrical instrument used to measure the current in an electrical circuit is called an ammeter. It is connected to measure the current passing a given point. Figure 11b illustrates how you connect an ammeter into the circuit to measure the current passing point P of Figure 1-1a. When you connect an ammeter between the source and the load shown in Figure 11b, it is in a series.



A. SERIES CIRCUIT WITHOUT AMMETER



B. AMMETER CONNECTED IN SERIES

Figure 1-1. Connection of an ammeter in a circuit

a. You must observe polarity when connecting an ammeter into an electrical circuit. To do this properly, you must trace electron flow from the negative (-) side of the battery through the circuit and back to the positive (+) side of the battery.

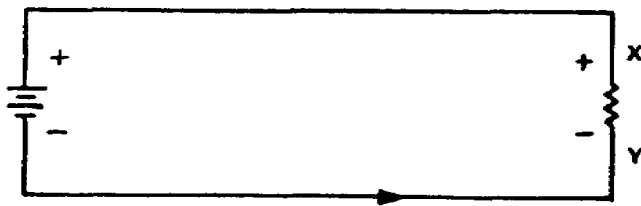
b. Then break the circuit and connect the ammeter so that electrons enter the negative side and exit through the positive side into the load (fig. 1-1b).

c. An ammeter that measures smaller amounts of current is called either a milliammeter or a microammeter, depending upon the amounts of current to be measured.

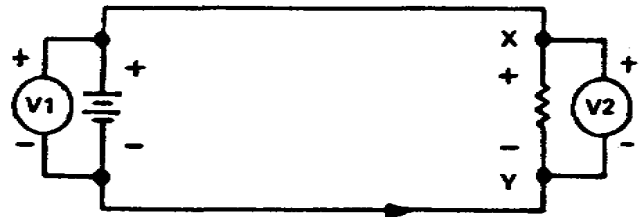
3. Voltmeter. The electrical instrument used to measure difference of potential, or voltage, is a voltmeter. It is connected so it measures the difference of potential between two points. Figure 1-2b illustrates the proper connection of a voltmeter.

a. To measure the electromotive force of the battery, you must connect voltmeter V1 (fig 1-2b), while observing polarity. To measure the potential difference between points X and Y of the circuit (fig 1-2a), it is necessary to trace the electron flow and observe the polarity between points X and Y.

b. Note that the side of the resistor that the electrons enter is the negative side. A meter that is connected across a difference of potential (fig 1-2b), is in parallel.



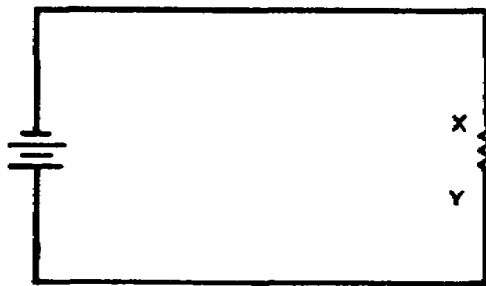
A. SERIES CIRCUIT WITHOUT VOLTMETER



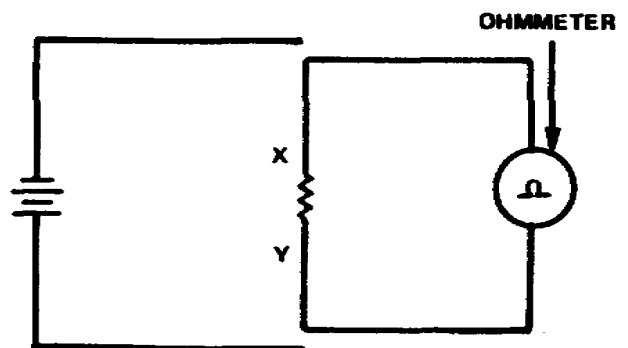
B. VOLTMETER CONNECTED IN PARALLEL

Figure 1-2. Connection of a voltmeter in a circuit

4. Ohmmeter. An electrical instrument which is used to measure resistance is an ohmmeter. Figure 1-3b illustrates the connection of an ohmmeter to measure resistance.



A. RESISTOR CONNECTED IN SERIES CIRCUIT



**B. MEASURING THE RESISTANCE OF THE RESISTOR
RESISTOR WITH AN OHMMETER**

Figure 1-3. Connection of a ohmmeter in a circuit

a. In order to measure the resistance of resistor XY in Figure 1-3a, the resistor XY must be disconnected from the remainder of the circuit.

b. Then the ohmmeter is placed across the resistor as shown in Figure 1-3b.

5. For convenience, more than one electrical measuring device may be combined in one instrument. An instrument of this type is variously called a multimeter, a multitester, a voltohmmeter, etc. The term meter is frequently used in scientific literature and may designate any of the above.

NOTE: The combination meter will be discussed later in this section.

6. Meter Circuitry. You may recall that you connect ammeters in series in that part of the circuit where the current is to be measured. The voltmeter must be connected in parallel with the component between the two points where a potential difference is to be measured. The ohmmeter must not be connected into a hot (power-source-applied) circuit.

a. Ammeter. If you connect a 0-to 10-milliampere meter coil in a circuit carrying 10 amperes, not only is the meter coil incapable of measuring such large values of current, but it will be severely damaged.

(1) To measure larger amounts of current than the coil itself can safely carry, you connect a resistance in parallel with the coil, as shown in Figure 1-4a. The current being measured divides between the coil and resistor, with a small portion flowing through the coil (R_m) and the remainder through the parallel resistor, called the meter shunt (R_s). The shunt may be built into the meter or it may be mounted externally.

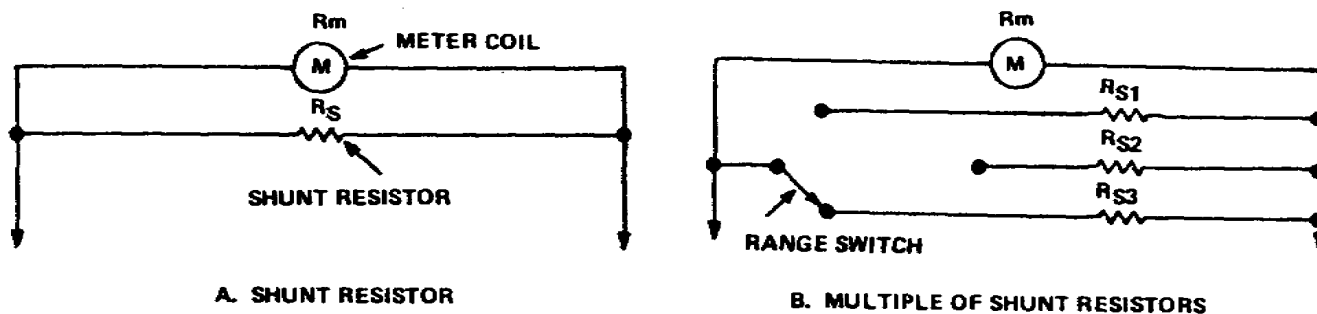


Figure 1-4. Typical ammeter circuit

(2) Ammeters which are designed to measure several ranges of current use a shunt for each range. The shunts are mounted on a common terminal board and are connected to a multiple switch, as shown in Figure 1-4b. Setting the switch to the desired range connects the proper shunt into the meter circuit. Shunts usually contain only a fraction of an ohm of resistance and consist of a few inches of a metal alloy having a low temperature coefficient. The alloy is drawn into a wire and is wound around a piece of mica or fiber and mounted on a terminal board.

(3) The accuracy of an ammeter reading depends upon the relative magnitudes of the meter resistance and the circuit load resistance (resistance of the circuit into which the meter is connected). For example: if the meter resistance (R_x) equals the circuit load resistance (R_L), as shown in Figure 1-5a, the value of actual circuit current is twice that of the measured current, representing an error of 50 percent. If you decrease the meter resistance as shown in Figure 1-5b, you also decrease the percentage of error. If the meter resistance is considerably smaller than the load resistance, the percentage of error becomes so small that for practical measurements it can be disregarded. Thus, for any given circuit conditions, the accuracy of the ammeter reading is greater if the total meter resistance is much less than the ohmic resistance of the load.

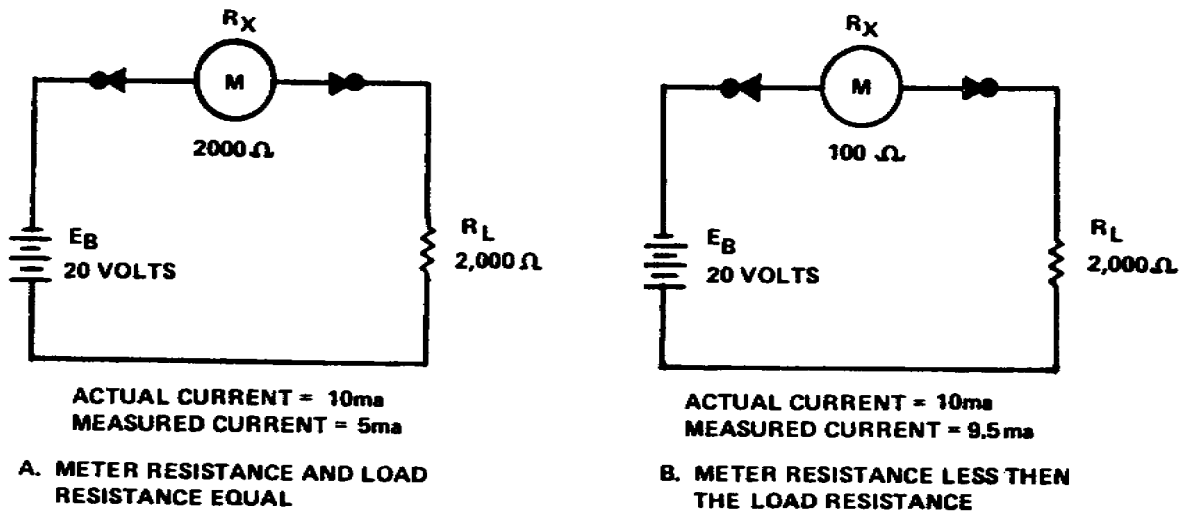


Figure 1-5. Error in ammeter readings

b. Voltmeter. The meter movement discussed above can be used either as an ammeter or a voltmeter. How is this possible? You can measure voltage with the ammeter just described by placing resistance in series (not parallel) with the meter coil and measure the current flowing through the coil. In other words, a voltmeter is a current-measuring instrument designed to indicate voltage by measuring the current through a resistance of known value.

(1) A typical voltmeter circuit, shown in Figure 1-6a, is a simple-series circuit. As with the ammeter, it is possible to obtain various voltage ranges with a voltmeter. To obtain more than one range, various sized resistors, called "multipliers," are added in series with the coil, as shown in Figure 1-6b.

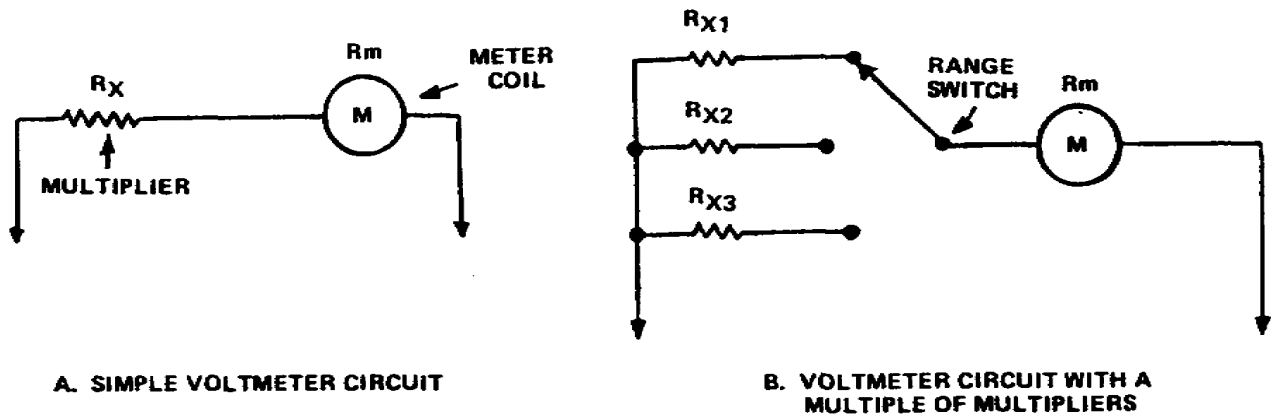


Figure 1-6. Typical voltmeter circuit

(2) The accuracy of any measurement made with a voltmeter depends, for the most part, upon the relationship between the total resistance in the meter circuit and the value of resistance across which the voltage is measured. This fact can be seen from a study of the circuit in Figure 1-7, showing both the actual voltage and the measured voltage as well as percentage of error. Observe that the voltage measured is two-thirds the actual voltage across R_M , an error of 33.3 percent, since the meter resistance is only one-half the value of the total resistance in the circuit.

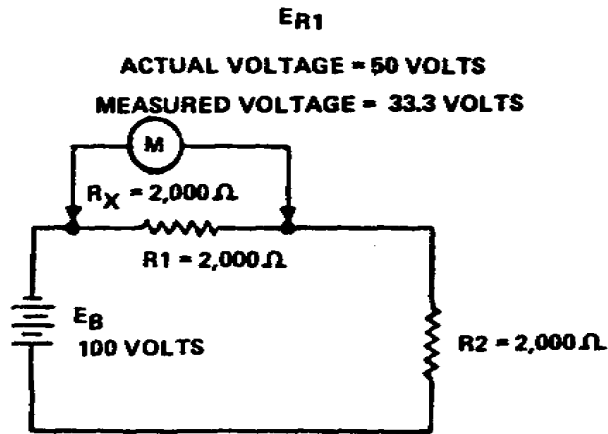


Figure 1-7. Error in voltmeter readings

(3) If you double the meter resistance (increase to 4000 ohms), the error in the voltage reading diminishes to 30 percent (40 volts across R_1). If you increase the ratio between the meter resistance and load resistance even more by increasing the meter resistance you obtain a point where the voltmeter error can be tolerated.

(4) For practical purposes, the voltmeter error can be tolerated when the voltmeter resistance is ten times as great as the resistance across which the voltage is measured.

c. Ohmmeter. The ohmmeter is a device that uses a current-actuated meter and a fixed source of voltage for measurement of resistance (refer to Figure 1-8). It is used for practical work where simplicity, portability, and ease of operation are more important than a high degree of precision. There are two types of ohmmeters, the series type and the shunt type. The series type has the resistance to be measured connected in series with the meter movement. The shunt type has the resistance to be measured connected in parallel with the meter movement.

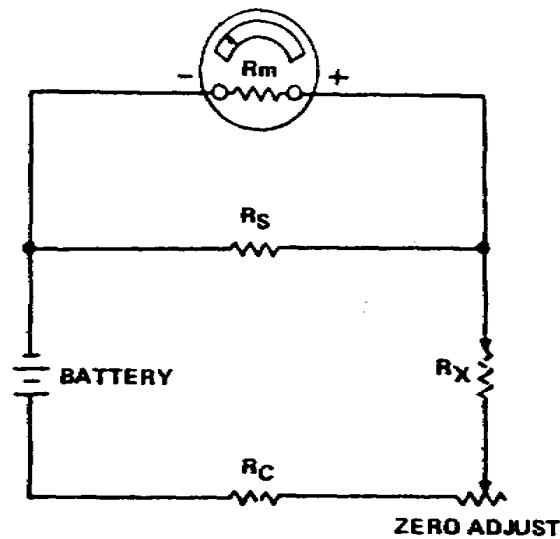


Figure 1-8. Typical ohmmeter circuit

(1) For any given ohmmeter, mid-scale deflection (one-half the maximum deflection distance) is obtained when the current through the meter is one-half the value of the current at full-scale (zero ohms) deflection. This condition exists when the resistance being measured is equal to the total meter circuit resistance. Analysis of the series-type ohmmeter circuit in Figure 1-9 shows that full-scale deflection is obtained when the meter test probe are shorted, and that less than full-scale deflection is obtained when the resistance to be measured is connected into the circuit.

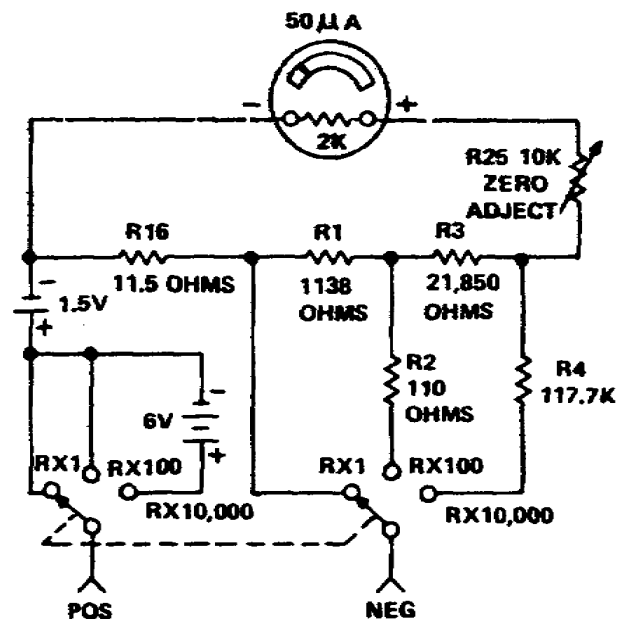


Figure 1-9. Circuit of a series ohmmeter

(2) Since the ohmmeter is calibrated at mid-scale, the mid-scale portion represents the most accurate portion of the scale. However, the usable range extends, with reasonable accuracy, on the high end to 10 times the mid-scale indication, and on the low end to 1/10th of the mid-scale indication.

(3) To extend the usable high range of the series-type ohmmeter, shunt R_s (fig 1-8), can be removed from the circuit, and the value of the series-dropping resistor R_c increased 10 times. This permits a mid-scale reading with a resistance of 10 times R_x . The limitations which prevent a further increase in the usable high range of the ohmmeter are fixed voltage (battery) and the sensitivity (current necessary for full-scale deflection) of the meter mechanism. You can obtain a higher range by increasing the battery voltage or by using a more sensitive meter mechanism. The former method is practical, and is used in some commercial test equipment.

(4) You can extend the usable low range of the ohmmeter by installing meter shunt R_s and decreasing R_c until the current in the circuit and the internal resistance of the battery limit any further extension of the range. Excessive current can extend the low range by decreasing the battery voltage, but this method is not feasible. Instead, a shunt-type ohmmeter is used.

d. The shunt-type ohmmeter (fig 1-10), measures low and medium values of resistance. The shunt-type ohmmeter scale is calibrated in the reverse direction from the series type because full-scale deflection is obtained with test probes open.

(1) Mid-scale deflection occurs when the combination of the meter resistance and the shunt R_s is equal to R_x , the resistance to be measured.

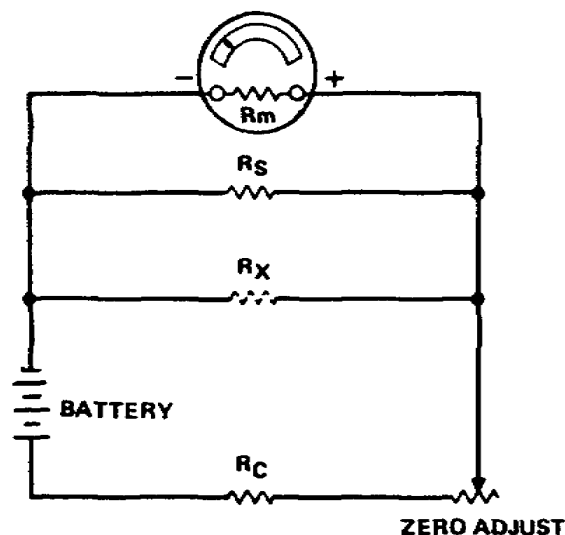


Figure 1-10. A shunt ohmmeter

(2) Limitations which prevent a further decrease in the range are:

(a) Internal resistance of the battery which becomes an appreciable part of the total circuit resistance, causing errors in readings to increase with battery age.

(b) Excessive current drain which decreases the life of the battery, and which could in some cases cause damage to the components under test.

(3) It is impractical to measure very low values of resistance with an ohmmeter. The ohmmeter, in itself, is only a means of approximating resistance values, where practical electronic work requires a convenient and speedy method of checking resistances.

Learning Event 2:

DETERMINE WHEN AND HOW TO USE METERS

1. When using a voltmeter or an ohmmeter you must use a range that is high enough to keep the deflection less than full scale. Before measuring a current or voltage, you should have some idea of its magnitude. Then switch to a large enough range or start with the highest range.

NOTE: Many voltmeters or ohmmeters have been ruined by attempting to measure amperes. Therefore, be sure to read the lettering either on the dial or on the switch positions, and choose the proper range before connecting the ammeter in the circuit.

2. When connecting the voltmeter (or ammeter) in the circuit, you must observe proper polarity. Current must flow through the coil in a definite direction in order to move the indicator needle up-scale. Wrong polarity (or reversal of current) results in a bent meter needle. You can avoid improper meter connections by remembering that the black meter leads are the negative leads and the red meter leads are the positive leads.

3. There are other precautions to observe with both the ammeter and the voltmeter. When using an ammeter, you must observe two important precautions.

a. Always connect an ammeter in series with the element through which the current is to be measured.

b. Never connect an ammeter across a source of voltage, such as a battery or a generator.

c. Remember that the resistance of an ammeter, particularly on the higher ranges, is extremely low and that any voltage, even a volt or less, may cause very high current through the meter, and severely damage the meter.

4. When using a voltmeter you must observe one additional precaution along with those already mentioned. Always connect a voltmeter in parallel across

the portion of the circuit in which voltage is being measured. If you observe these precautions when using an ammeter or voltmeter, you can obtain reliable results from these instruments.

5. If you wish to use a voltmeter and an ammeter in the circuit at the same time, there are two possible ways to connect them, but each produces an error.

a. If the meters are connected as shown in Figure 1-11a, the voltmeter reads the voltage across the resistor and the ammeter.

b. If the meters are connected as shown in Figure 1-11b, the ammeter reads the current through the resistor R_1 and the voltmeter.

c. Both methods further emphasize the fact that the resistance of the ammeter must be very low to keep the voltage across it small, and that the resistance of a voltmeter must be large enough to keep the current through it small.

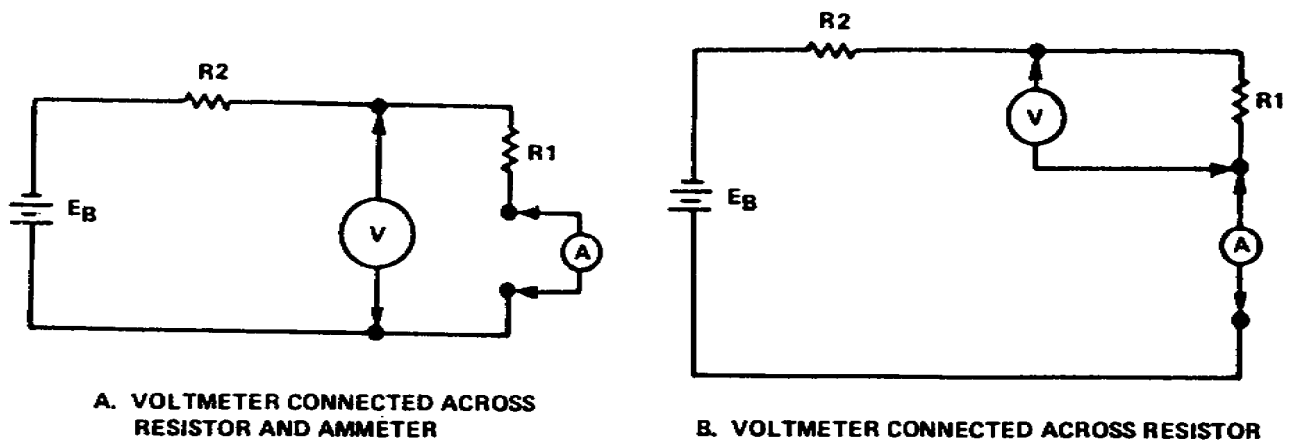


Figure 1-11. Measuring current and voltage simultaneously

6. In either of the above cases, the correct connection to use is the one leading to the least error and that depends on the relative values of resistance. If the resistance of the circuit is small (approaching the resistance of the ammeter), use the second circuit (fig -1-11b). If the resistance of the circuit is large compared to the voltmeter resistance, use the first circuit (fig 1-11a). For intermediate values of circuit resistance, either circuit connection is satisfactory.

7. You can determine the resistance of a circuit element by first measuring the current through it with an ammeter, then the voltage across it with a voltmeter, and finally apply Ohm's law. It is much more practical, however, to use an ohmmeter from which you can read resistance directly from a scale.

8. When using an ohmmeter to measure resistance, proceed as follows:

a. Choose a range which you think contains the resistance of the element that you are measuring or use a range in which the reading falls in the upper half of the scale.

b. Short the leads together and zero the meter, using the zero adjustments. If you change ranges at any time, remember to readjust to zero ohms.

c. Never attempt to measure resistance in a circuit while it is connected to a source of voltage.

d. Connect the unknown resistance between the test leads and read its resistance from the scale. When applicable, disconnect at least one end of the element being measured to avoid reading the resistance of parallel paths.

9. In addition to measuring resistance, the ohmmeter is very useful for checking continuity in a circuit. Often when troubleshooting electronic circuits or wiring a circuit, you cannot visually inspect all parts of the current path. Therefore, it is not always apparent whether a circuit is complete or whether current may be flowing in the wrong part of the circuit because of contact with adjacent circuits. The best method of checking a circuit under these conditions is to send a current through it.

a. If the conductor makes a complete circuit, current flows through the circuit. The ohmmeter is ideal for checking circuits. It provides the power to cause the current and it provides the meter to indicate the amount. To check, first study the circuit diagram, then check the corresponding parts of the circuit itself with the ohmmeter. The ohmmeter should indicate perfect conduction, partial conduction (resistance), or no conduction at all.

b. Ohmmeters are not always available, and even when they are, they are often of little value. The most common cause of a useless ohmmeter is a dead battery, which is usually caused by leaving an ohmmeter on the low-ohms scale. On this scale the meter draws current continuously. Another common carelessness is to leave a multimeter on the "ohmmeter" position and to permit the test leads to short circuit.

10. Since an ohmmeter may not be available, you must understand another way of determining resistance. There are two procedures you can use for measuring resistance without an ohmmeter.

a. One is the voltmeter-ammeter method. Connect the voltmeter and ammeter (fig 1-11(a)). After connecting the meters, use the voltmeter and ammeter reading to calculate resistance by Ohm's law.

voltmeter reading (volts)
R1=-----
ammeter reading (amperes)

b. If the resistance is high, the voltmeter method can be used. With the voltmeter method, a voltmeter with known resistance is connected in series with the unknown resistance (fig 1-12).

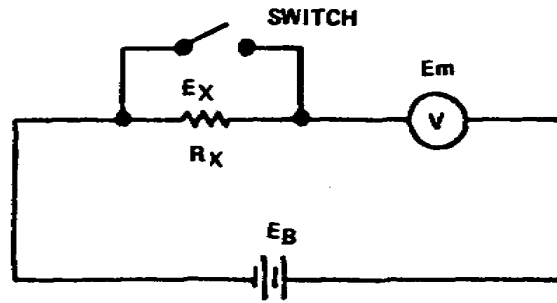


Figure 1-12. Determining value of unknown resistance of voltmeter

When power is applied, the voltage (E_m) across the meter can be read on the voltmeter. Then by shorting out resistor R_x (fig 1-11), the voltmeter indicates the applied voltage (E_b). Thus the voltage (E_x) across the unknown resistor is equal to the difference between the two measured voltages.

$$E_x = E_b - E_m$$

c. The voltages across the resistor and the meter are

$$E_x = IR_x \text{ and } E_m = IR_m$$

d. By dividing the first equation by the second equation, the currents cancel out:

$$\frac{E_x}{E_m} = \frac{R_x}{R_m} \text{ or } R_x = R_m \frac{E_x}{E_m}$$

e. But since E_x is equal to the difference between E_m and E_b ($E_b - E_m$) the unknown resistance is

$$R_x = R_m \frac{E_b - E_m}{E_m}$$

f. Since E_b , E_m , and R_m are unknown, the above equation can be solved for the value of the resistance R_x .

Learning Event 3:
DETERMINE METER SENSITIVITY

1. We have said that the voltmeter and ammeter have various ranges and also that you determine the resistance of the meter to decrease errors in readings. This points to the conclusion that meters are delicate devices which can respond to small forces.

2. The resistance of a meter movement and the maximum current permitted to flow through it are so small that the use of an unshunted meter movement as a measuring device is very limited. A typical meter movement has 50 ohms of resistance and gives full-scale deflection with 1 milliamperes of current through the meter coil. Such a meter movement has a 50 millivolt voltage across it at full-scale deflection as shown by the formula:

$$E = I \times R = 0.001 \times 50 = 50 \text{ millivolts}$$

The above meter movement is limited to measuring current values from 0 to 1 milliamperes and voltage from 0 to 50 millivolts.

3. How is it possible to have sensitive ammeters and voltmeters that can measure much larger values of current and voltage? Let's discuss sensitivity in more detail and see how it is possible to measure large values of current, voltage, and resistance with the applicable meters.

a. Ammeters. The sensitivity of a meter movement is inversely proportional to the amount of current that causes the indicator to deflect full scale. The smaller the current required for full-scale deflection, the more sensitive the meter movement. For measuring current in electronic equipment, ammeters with a sensitivity of 0.1 ampere or even 1 milliamperes are used. Meters with a sensitivity of 100 microamperes are common.

(1) To understand how to determine applicable shunt resistors for an ammeter, let's study the circuit in Figure 1-13. Since current through the two parallel branches divides in a ratio inversely proportional to the branch resistances, it is possible to calculate the current through the coil as well as the total current in the circuit in which current is being measured.

(2) In the circuit shown in Figure 1-12 you can find the current in the shunt (I_s) and the total current (I_t) in the circuit. For example, if the shunt resistance (R_s) is equal to 1/5th the value of the resistance of the coil (R_c), and current through the coil (I_c) is 0.5 milliamperes, there is 5 times as much current through the shunt (I_s) as through the coil (I_c), because the current divides in inverse proportion to the resistance; therefore, the current through the shunt is $2.5(5 \times 0.5)$ milliamperes. The total current in the circuit is 3 ($0.5 + 2.5$) milliamperes. The total current in the circuit is 3 ($0.5 + 2.5$) milliamperes.

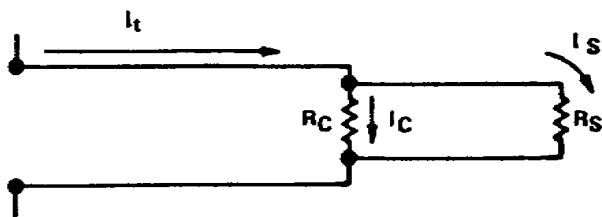


Figure 1-13. Shunt resistor current range

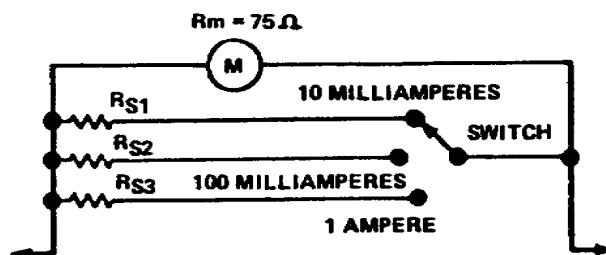


Figure 1-14. Determining shunt resistors

(3) Calculations such as those involved in this example enable you to determine the size of the shunt required to extend the range of an ammeter. Although in actual practice you seldom make these calculations, you must know how meters having the same movement are constructed with different ranges, and how a range switch on the same meter changes the current range of the meter.

(4) Assume that you want to make an ammeter with the ranges of 0 to 10 milliamperes, 0 to 100 milliamperes, and 0 to 1.0 ampere, as shown in Figure 1-14. Also assume that the meter sensitivity is 1 milliampere and the coil resistance is 75 ohms.

(5) You can determine the values for R_{s1} , R_{s2} , and R_{s3} since the shunt and meter form a simple parallel circuit. As you know, the voltages across the shunt and meter are equal, as in the following formulas:

OR

OR

$$\begin{aligned} E_s &= E_m \\ I_s R_s &= I_m R_m \\ R_s &= \frac{I_m R_m}{I_s} \end{aligned}$$

(6) Where R_s is the shunt resistance, " I_s " is the current through the shunt at full-scale deflection, R_m is the coil resistance, and I_m is the current through the coil for full-scale deflection. Thus, the shunt resistance required to produce the ammeter shown in Figure 1-14 are 8.33 ohms, 0.758 ohm, and 0.0751 ohm respectively.

4. Voltmeter. In constructing a voltmeter with various ranges, you must determine the size of the multiplier to place in series with the meter coil.

a. For this discussion, we can use the same meter as used for the ammeter. The meter sensitivity is 1 milliampere and coil resistance is 75 ohms. Assume we need to determine the correct multipliers for ranges of 0 to 10 volts, 0 to 100 volts, and 0 to 500 volts (fig 1-15). Since 1 milliampere causes a full-scale deflection, the total resistance of the meter ($R_1 + 75$) must be such that the voltage across it is 10 volts (0-to 10-volt range) when 1 milliampere current is flowing. Thus:

$$R_1 = \frac{E}{I} \quad \text{or} \quad R_1 + 75 = \frac{10}{0.001}$$

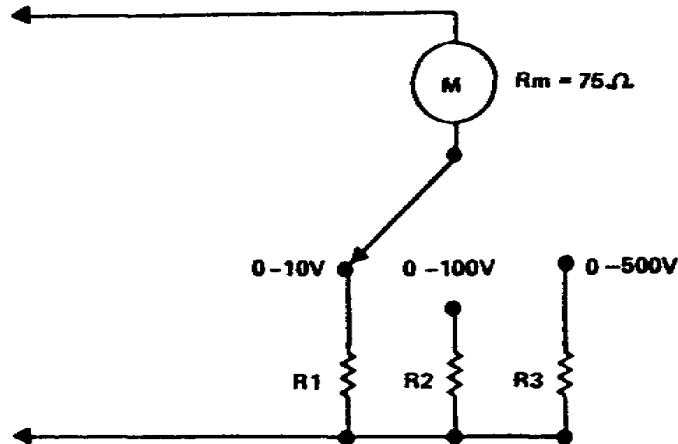


Figure 1-15. Determining multipliers

b. The total resistance is 10,000 ohms and the resistance of the multiplier (R_1) is 9925 ohms. The resistance of the other two multipliers (R_2 and R_3) can be determined in a similar manner.

c. A term which you frequently encounter while troubleshooting television systems is voltmeter sensitivity. The sensitivity of a voltmeter is expressed in ohms per volt and is determined by dividing the resistance of the meter and the multiplier by the full-scale reading in volts. It is just another way of stating what current can cause full-scale deflection.

d. A voltmeter should have very high resistance so it draws very little current and affects the circuit as little as possible during voltage measurements. Sensitivity, therefore, is an indication of the measuring quality of a voltmeter. Generally, a meter with a 100-ohms-per-volt sensitivity is satisfactory. However, for good accuracy in circuits with high resistance, you must use a meter with a sensitivity of 20,000 (or more) ohms per volt.

e. To extend the range of a voltmeter, add a series resistor (multiplier). Normally this requires you to calculate the resistance of the multiplier. Then you merely add the required resistance in series so that the total resistance of the meter is satisfactory for the new range. You may wonder why you need to know how to increase the range of a voltmeter. In some cases you are required to measure extremely high voltages with a meter that does not have the required range. By determining the multiplier resistance and adding this resistance in series with the meter movement, you can measure these voltages.

f. As we have stated, the voltage indicated by the meter is somewhat in error, depending on the meter sensitivity. This error is due to the loading effect which the meter has on the circuit in which the voltage is being measured. To understand just how a meter affects (or loads) a circuit, observe the circuit shown in Figure 1-16. According to the values indicated, the total current in the circuit is 0.001 ampere.

$$I_t = \frac{120}{50,000 + 70,000} = 0.001 \text{ ampere}$$

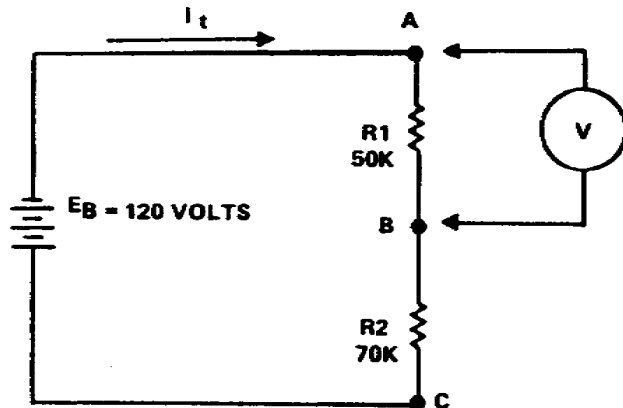


Figure 1-16. Leading effect

g. The applied voltage divides across the two resistors--50 volts across $R1$ and 70 volts across $R2$.

h. When you connect a voltmeter across (from point A to point B) the resistor $R1$, you naturally expect the meter to read 50 volts. However, depending upon the sensitivity of the meter, it may indicate less than the 50 volts you expect. For example, suppose you are using a voltmeter with a sensitivity rating of 1000 ohms x 100, or 100,000 ohms. To find the resistance of a voltmeter, multiply the sensitivity rating by the full-scale voltage.

i. When you connect this voltmeter across the 5000-ohm resistor in the circuit, you put the meter in parallel with this resistor. The total resistance of the circuit effectively becomes 103,333 ohms. Thus the total current increases to approximately 1.16 milliamperes, the voltage across R2 increases to approximately 81.2 volts, and the voltage reading on the meter is approximately 38.8 volts.

j. You can avoid loading a circuit by using a voltmeter in which the resistance is large compared with that of the circuit element across which you are measuring voltage. If a voltmeter with such high sensitivity is not available, you can improve accuracy by using a higher range on the voltmeter. For example, if you used the 0-to 500-voltage range on the meter, the voltage across the resistor R1 would read approximately 47.2 volts.

5. Ohmmeter. Despite its usefulness as a resistance-measuring device, the ohmmeter is comparatively inaccurate. It is used only where resistance measurements need not be extremely accurate. A good rule to remember when you are using an ohmmeter, such as shown in Figure 1-17, is that the highest reading that can be obtained with acceptable accuracy is approximately ten times the mid-scale reading, and the lowest reading is approximately one-tenth of the mid-scale reading.

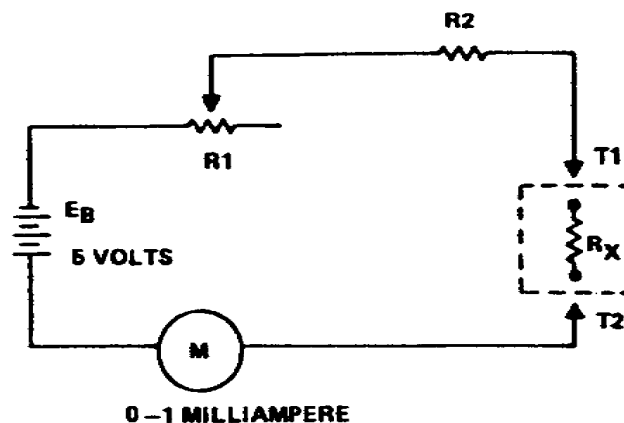


Figure 1-17. Typical ohmmeter scale

a. To determine the range of resistance within the above limits, you must determine what the total resistance of the meter circuit is to limit the current to 1 milliampere (full-scale deflection) when points T1 and T2 are connected together (short-circuited). Full-scale deflection is obtained when R1 is 5000 ohms.

$$R_1 = \frac{E_b}{I_t} = \frac{5.0}{0.001} = 5000 \text{ ohms}$$

b. Where E_b is the battery voltage and I_t is 1 milliampere (meter sensitivity), the above calculation reveals that the sum of the adjustable

and limiting resistor must be 5000 ohms if we are to obtain full-scale deflection. Full-scale deflection indicates zero resistance, and the meter scale is marked "0" ohms at 1 milliamperes point (fig 1-10). When a resistor (Rs) is placed between terminals T1 and T2, the total resistance of the circuit is increased, and a smaller current flows through the meter.

c. For mid-scale reading, the size of Rx (fig 1-17) between terminals T1 and T2 must be of a value to limit current to 0.5 milliamperes. Thus the total resistance of the circuit of half-scale deflection is 10,000 ohms.

$$R_t = \frac{E_t}{I_t} = \frac{5.0}{0.0005} = 10,000 \text{ ohms}$$

d. Therefore, Rx must be 5000 ohms for mid-scale reading when Rx is placed between T1 and T2. This leads to an interesting conclusion. The midscale resistance reading of an ohmmeter is equal to the internal resistance of the meter, and the scale may be so calibrated.

Learning Event 4:
DETERMINE VOLTS AND OHMS READING ON THE PSM-6

1. Multimeter PSM-6. As an aid to our discussion and for simplification, we will use the ME-70 PSM-6 multimeter illustrated in Figure 1-18.

2. The sensitivity of the PSM-6 voltmeter is the ohms-per-volt rating of the meter circuit, either 1000 ohms per volt or 20,000 ohms per volt. Ordinary voltmeters are not extra-sensitive, since the energy they use is only a very small percent of the energy produced by the current of the circuit being tested. For accurate readings of delicate network circuits where normal current is small, the current which energizes the meter becomes such a large percentage of the total current that erroneous readings and circuit malfunctions occur when you use a common voltmeter.

3. Reading the multimeter. Look at the dotted line shown on the meter face in the illustration in Figure 1-18. It shows an imaginary line where the pointer of the meter comes to rest. Suppose the function switch is turned to the direct-current voltage position, 20,000 ohms per volt (20K). This indicates that the middle scale (black) is to be read. Now suppose that the range switch is on the 50 volts position. This indicates that the maximum deflection of the meter needle represents 50 volts. Therefore, make your reading on the 5 scale, since there is no 50 scale, and 50 is a multiple of 5. The multiple selected is always 1/10th, 10, 100, etc. However, instead of the indicated numbers 1, 2, 3, 4, and 5, visualize this scale as reading 10, 20, 30, 40, and 50 volts respectively. Each numbered segment of the arc has a value of 10 volts. Therefore, each small division of the scale has a value of 1 volt. Thus the reading is one increment past the number 2 (visualized 20). It, therefore, represents a value of 21 volts direct current.

a. Suppose that we turn the range switch to 250 and, checking a circuit, we notice that the needle again comes to rest as shown. There is no maximum reading of 250 on the direct-current scale, but we can use the 2.5 scale. This time we visualize the indicated numbers 0.5, 1, 1.5, 2, and 2.5 as readings of 50, 100, 150, 200, and 250 volts respectively. Each number segment of the scale has a value of 50 volts; therefore, each small increment has a value of one-tenth of 50, or 5 volts.

b. Turn the function switch to the 1000 ohms per volt, alternating-current voltage position and make the reading on the AC scale, which is the lower one and is red. Take the reading with the range switch on the 500 position (fig. 1-18) making it on the 5 scale. The numbered positions of the scale are visualized as representing 100, 200, 300, 400, and 500 volts. Then with each increment of the scale representing 10 volts, you are reading 240 volts.

4. The dual external shunt shown in Figure 1-18 extends the direct current range of the instrument from its normal range (0.5 to 1000 milliamperes---1000 milliamperes equal 1 ampere) to provide either a 0-to 2.5-ampere range or a 0-to 10-ampere range. Three terminals provided at each end of the molded plastic are standard pin jacks which accommodate the test lead

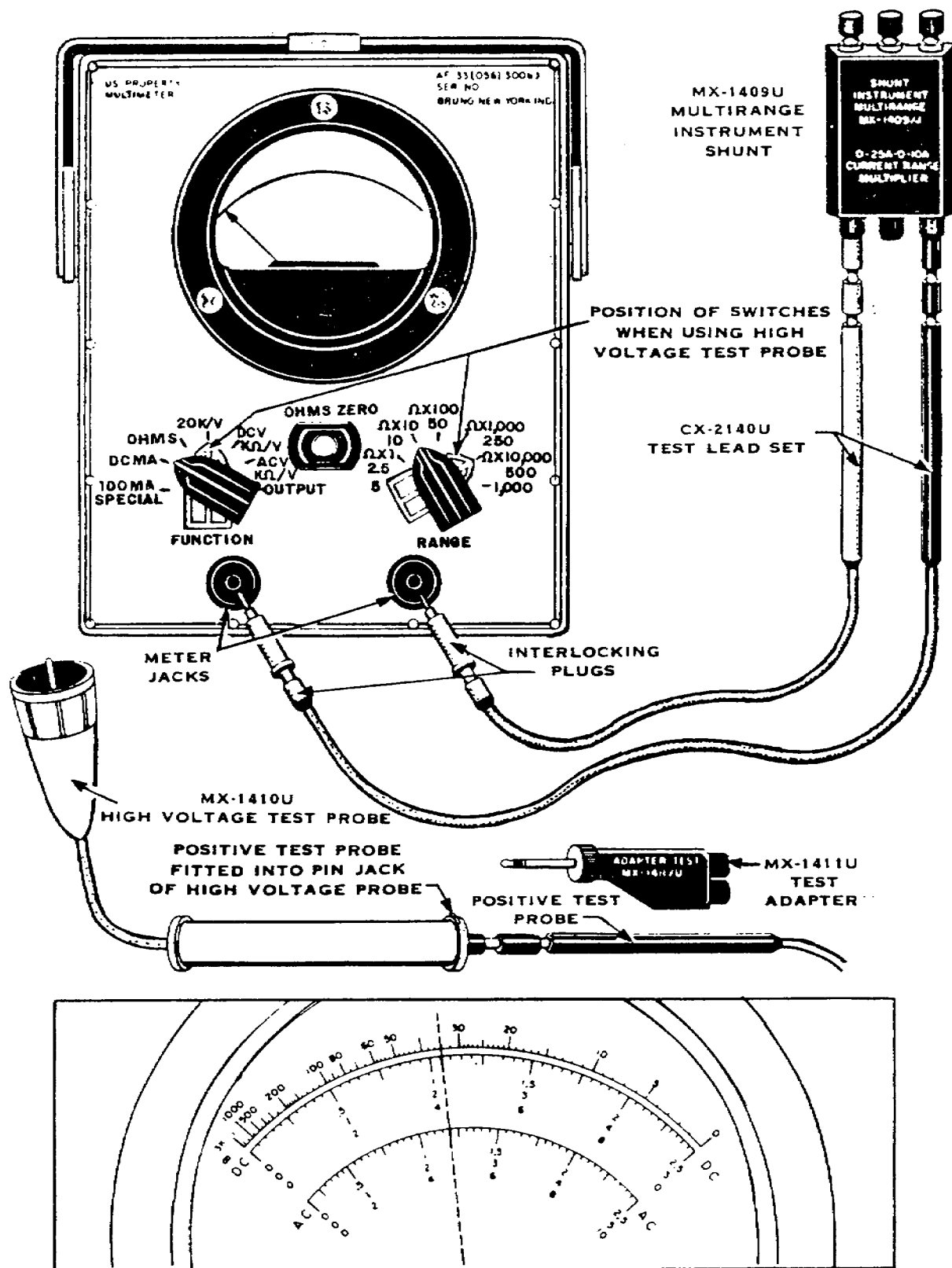


Figure 1-18. ME-70 PSM-6 multimeter

probe. The two lead wires are shown attached to correctly measure the current of a circuit. Make all connections with voltage not applied. After checking all connections, turn the circuit on and read the meter.

5. MX-1410U, the high-voltage test probe (fig 1-18), extends the DC voltage range to 5000 volts. Notice that the function switch is in the 20K position, the range switch must be set at 500, and the high voltage test probe is connected to the positive test lead.

6. The MX-1441U test adapter (fig 1-18) is used to make crystal current measurements requiring a 1000-ohm load as seen from the plug end of the adapter.

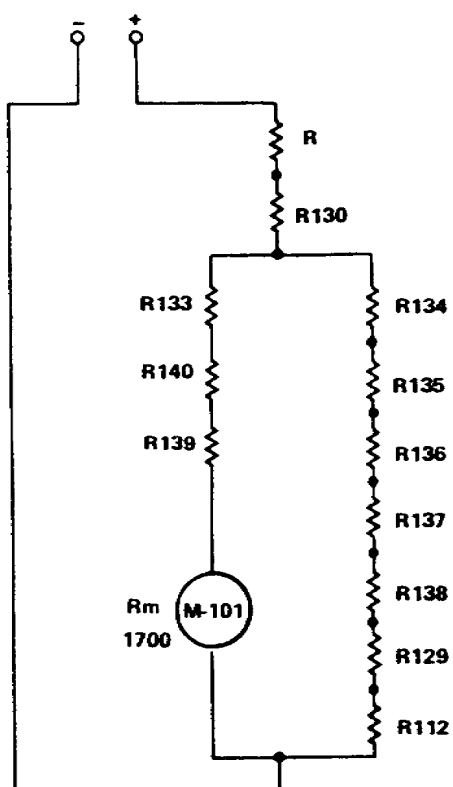
7. The CX-2140U test Lead set (fig 1-18) includes a pair of four-foot test leads. These test leads have interlocking plugs installed at their set ends and test probe tips at the other end. Detachable alligator clips are also provided to fit over the test probe, to hold a component or clip on to a part of the circuit.

Learning Event 5:

DETERMINE THE VALUE OF R IN FUNCTION AND RANGE SETTINGS

1. The PSM-6 has a range switch allowing you to select DC voltage ranges of 0.5, 2.5, 10, 50, 250, 500, and 1000 volts. Further, since DC voltage may be checked at a sensitivity of either 1000 ohms/volts or 20,000 ohms/volts as selected by the function switch on the panel of the instrument operation (primarily the same regardless of whether the 20,000-ohms/volt or the 1000-ohms/volt function is selected), we will only discuss the 1000 ohms/volt operation. Figures 1-19 and 1-20 illustrate and identify both simplified circuits; if you know the operation of one, you can easily understand the other.

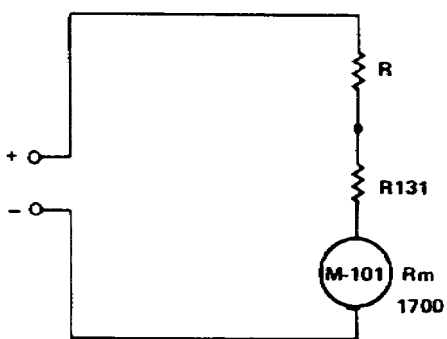
2. With the function switch set at the DCV Kohm/V position and the range switch at any position, the simplified circuit in Figure 1-19 shows the basic circuit configuration used to check DC voltages. Note in the diagram the range settings are obtained by the selection of resistors of various sizes. For example, when the range switch is in the 50 position, the value of R is such that 50 volts applied across the meter provides full-scale deflection. If the range switch is changed to position 10, then the value of R is such that 10 volts applied across the meter causes full-scale deflection, etc.



RANGE SETTING	VALUE OF R
.5	0
2.5	2,000
10	8,500
50	48,500
250	248,500
500	499,000
1,000	999,500

1,000 OHMS / VOLT

Figure 1-19. 1000-ohms/volt simplified circuit



RANGE SETTING	VALUE OF R
.5	0
2.5	40,000
10	180,000
50	890,000
250	4,980,000
500	8,980,000
1,000	19,980,000

20,000 OHMS / VOLT

Figure 1-20. 20,000-ohms/volt simplified circuit

3. The circuit illustrated in Figure 1-20 is, for all practical purposes, identical to that in Figure 1-19 except for the resistance values used. For instance, when the function switch is set at 20K ohm/V and the range switch at any position, the circuit reduces to the simplified diagram illustrated in Figure 1-20. Again, the value of R depends upon the position of the range switch, as shown in the accompanying table. The total resistance, including the 1700 ohmmeter resistance, provides a 20,000 ohms-per-volt sensitivity for all ranges selected.

4. While we are talking briefly about DC voltage measurements, note two simple things that can cause damage to the meter movement. Refer to Figure 1-21 and note what happens when the meter leads are connected backwards in the circuit. The meter needle deflects in the opposite direction and is damaged because it is driven into the stop, or, forced off scale.

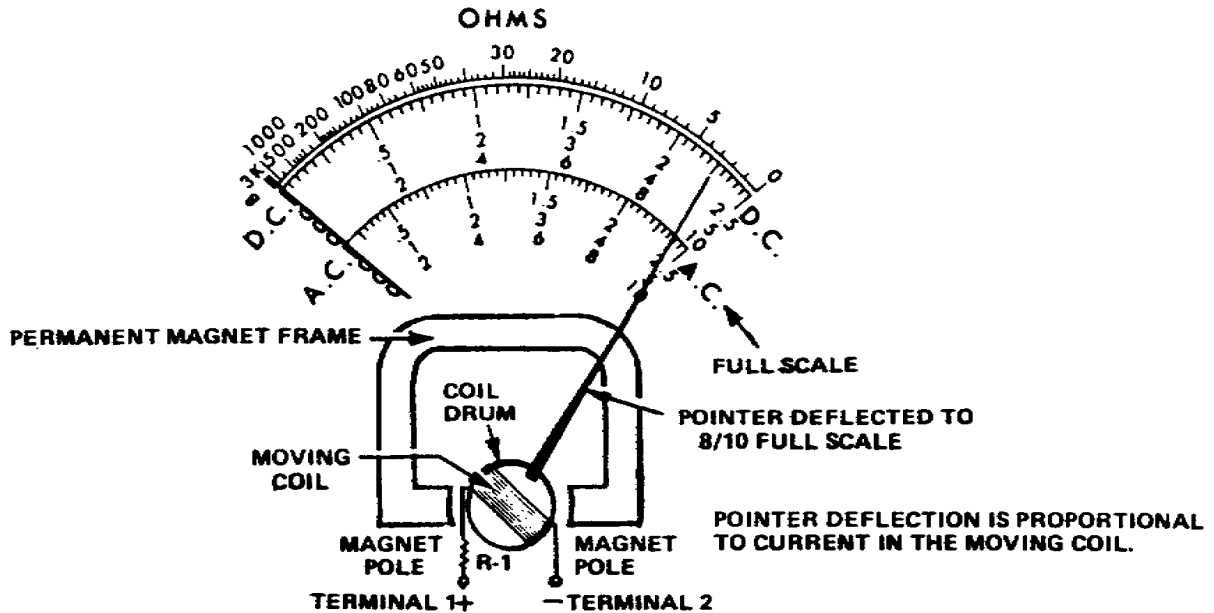
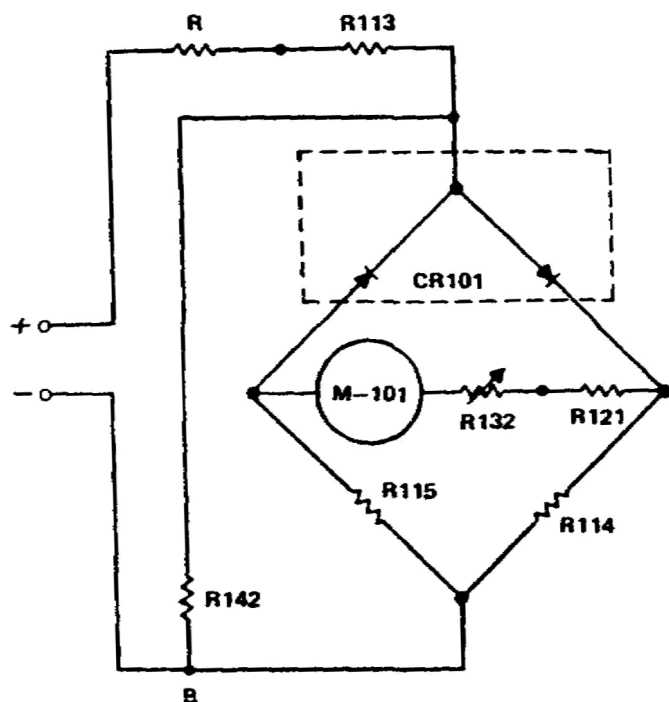


Figure 1-21. Meter damage

5. Suppose the meter is connected to a source of voltage greater than that which produces full-scale deflection. In this case the current through the movable coil exceeds the 1mA for which the coil is designed and forces the meter needle off the scale and may burn out the meter coil.

Learning Event 6:
DETERMINE THE VALUE OF R FOR AC VOLTAGE MEASUREMENTS

1. The measurement of AC voltage is a procedure very similar to the DC voltage measurement procedure just discussed. Again, the controls on the front panel of the PSM-6 are the function and range switches. With the function switch set at ACV and the range switch at any position, the circuit is basically the one shown in Figure 1-22, with the values of R as shown in the accompanying table. The ACV ranges are also designed for a sensitivity of 1000 ohms/volts, and the total resistance between points A and B should therefore be 450 ohms. The two rectifier sections of CR101 rectify the incoming AC voltage, and the resulting pulsating DC is read on the meter. Resistor R132 is a variable resistance, set at the factory, to provide compensations for variations in rectifier characteristics and temperature correction.



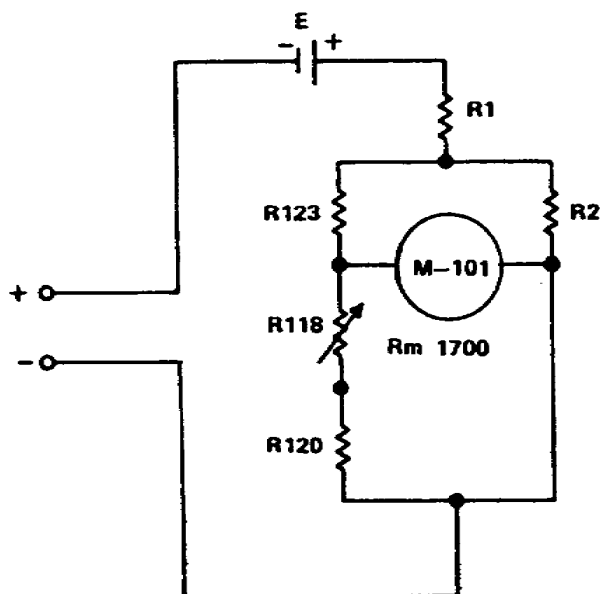
RANGE SETTING	VALUE OF R
.5	0
2.5	2,000
10	9,500
50	49,500
250	249,500
500	499,500
1000	999,500

Figure 1-22. AC voltage measurement circuit

2. The same basic precautions applying to AC voltage measurements apply to DC measurements except that it is not necessary to observe polarities. One additional precaution that should be observed, however, is one not necessarily related to safety but one which results in proper use of the meter in AC voltage measurements. The AC voltmeter section of the PSM-6 is designed to handle frequencies up to about 1000 hz. Above this frequency the voltage readings are subject to inaccuracies due to inductive reactance.

Learning Event 7:
DETERMINE THE RANGE SELECTION USED IN RESISTANCE MEASUREMENT

1. Although it uses the same basic meter movement, as shown in Figure 1-21, the circuitry is quite different. The circuit contains a battery in series with the meter, as shown in Figure 1-23. The ohms zero control R118 allows you to zero the meter for considerable drops in battery voltage. With the meter leads shorted together, adjust the variable resistor to produce a full-scale reading on the meters.



RANGE SETTING	VALUE OF R1 (Ω)	VALUE OF R2 (Ω)	E (VOLTS)
X1	54	23.75	1.34
X10	17.5	234.8	1.34
X100	175	2,583	1.34
X1000	1,750	OPEN	1.34
X10,000	226,750	OPEN	13.4

Figure 1-23. Resistance measurement circuit

a. The full-scale reading indicates zero resistance. When you insert a 50-ohm resistor between the leads, the current in the circuit is reduced and the meter no longer reads full scale. In other words, the size of the resistor inserted between the leads determines the current through the meter and the amount of meter deflection.

b. The scale is calibrated to read directly in ohms. A range switch allows you to select ranges of x1, x10, x100, or x10,000. For example, a direct reading of 67 on the scale with the range switch at x100 means that the circuit has a resistance of 67×100 or 6700 ohms.

2. Look at Figure 1-24 and see what else we should recall about measuring resistance with the meter. This figure shows a portion of the synchronizing circuit located in a typical modulator. Notice that the ohmmeter is connected across R630. Should you expect to get a reading of 100 on the meter? No, you should not! If you analyze Figure 1-24 more closely, you will see that the current from the meter has two paths. One path is from point A to terminal 7 to T603, through the transformer winding to terminal 8, and return to point B.

Therefore, the current from the meter is flowing through two parallel paths, and the resistance measured by the meter is the less than total resistance of R630. To prevent this situation you must disconnect one end of R630 and then measure its resistance. In this way you can measure the true value of R630. Remember that when you measure a specific resistance, you should eliminate any parallel paths in order for the reading to be accurate.

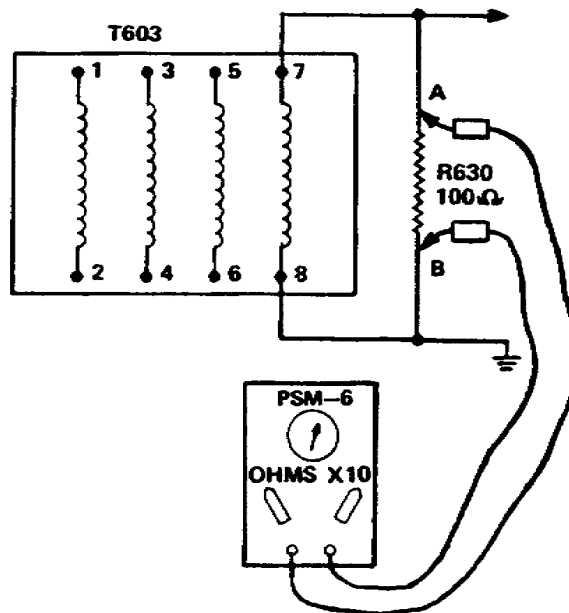


Figure 1-24. Resistance measurement proper circuit conditions

3. Another point you should remember when measuring resistance with an ohmmeter is illustrated in Figure 1-25, which shows a portion of a typical voltage regulator circuit. Suppose that you want to measure the resistance of potentiometer R1. Of course the circuit power is turned off, and parallel paths have been eliminated by disconnecting leads X and Y. Now all you have to do is measure the resistance of R1. However, in this case the terminals of R1 are hard to reach; so you place your fingers on the metal tips of the meter leads in order to hold the leads on the potentiometer terminals. The meter has only about a 1.34-volt or 13.4-volt battery, so you will not get a shock. You have overlooked one little detail. You have placed yourself in parallel with R1. You will probably obtain a resistance reading of 150,000 to 200,000 ohms, which is the sum of a parallel circuit made up of you and R1. Although there is no safety factor involved in this example, you have obtained an erroneous meter reading which would probably lead you down the wrong trail when troubleshooting a circuit of this type. This in turn wastes time and can cause unnecessary replacement of components or parts.

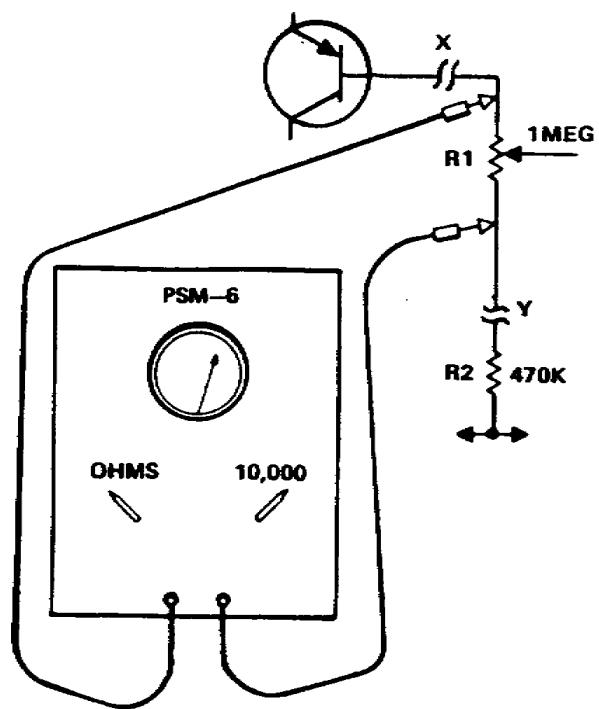


Figure 1-25. Ohmmeter connection

Learning Event 8:
ANALYZE METER OPERATIONS

1. The remaining major capability of the meter is, of course, the current measurement function. When using the PSM-6, direct current up to 1 ampere may be measured. To do this, set the function switch to the DC MA position and set the range switch at one of its positions.

2. Refer again to Figure 1-22, the basic meter movement. As discussed earlier, the amount of current through the movable coil determines the amount of meter deflection. In the case of PSM-6, 50 microamperes of current through the coil is necessary to cause full-scale deflection. What would happen if we put 100 microamperes through the coil? This would damage or burn out the coil. The resistance allows only 50 microamperes through the coil if the range switch is set for higher than the total current in the circuit. For example, when the range switch is set at 50 and a current of 50 milliamperes are measured, 49.95 milliamperes flow through the resistor and 50 microamperes flow through the coil. This condition produces a full-scale deflection for that range setting and reads 50 milliamperes on the scale. In the actual circuit of the meter, different values of shunt resistors are used for each setting of the range switch.

3. Here, as with voltage measurements, be extremely careful to ensure that a range setting of sufficient amplitude is obtained so that the meter needle will not be pegged. If the needle does not deflect far enough to obtain an accurate reading, the range setting can always be decreased.

Learning Event 9:
MATCH OHMMETER READINGS TO CAPACITOR OR INDUCTOR CONDITIONS

1. Reactive components can become open or shorted. In either case the component is useless because it cannot store energy. Coils and capacitors can also become only partially efficient because of partial shorting or leaking.

2. Capacitor troubles. A leaky capacitor is equivalent to a partial short. The dielectric gradually loses its insulating properties under the stress of applied voltages. A good capacitor has very high resistance (in the megohms). A shorted capacitor shows zero resistance, while a leaky capacitor indicates less than normal resistance.

a. When the ohmmeter is initially connected, its battery charges the capacitor. Maximum current flows at the first instant of charge and the meter indicates low resistance. As the capacitor charge slows, less current flows, and the meter indicates more resistance. When the capacitor has charged to the meter potential, the charging current is zero, and the ohmmeter reads only a small leakage current through the dielectric. This capacitor action is normal.

b. Troubles in a capacitor are indicated as follows:

(1) When the ohmmeter reading is immediately zero and stays there, the capacitor is shorted.

(2) When the capacitor shows a charging action but the final ohmmeter reading is less than normal, the capacitor is leaking.

(3) The electrolytic capacitor must be checked by taking a normal reading, then reversing the ohmmeter leads and taking another reading. The higher reading indicates the true condition of the component.

(4) If the capacitor shows no charging action and immediately indicates a high resistance, it is open.

3. Inductor checks should be made with the component disconnected from the circuit if we are to set a true indication. The most common trouble in coils is an open, which is indicated by an infinite reading on the ohmmeter.

a. Less common troubles are a short between turns, a short between primary and secondary turns in a transformer, and a short to an iron core.

b. A coil has a DC resistance equal to the resistance of the wire used in the winding. For RF coils with inductance values up to several millihenrys, the 10 to 100 turns in the coil have a DC resistance of 1 to 20 ohms. Inductors for lower frequencies have several hundred turns and a range in resistance from 10 to 500 ohms, depending on the wire size.

4. When checking a transformer with four or more leads, check the resistance across the two primary leads, and across any other pairs of leads for additional secondary windings.

a. For an autotransformer with three leads, check the one lead to each of the other two. When an open is indicated in a coil, the connection from the external terminals to the coil should be checked. Often these can be re-soldered to make the coil reusable.

b. Shorted turns cannot be definitely checked with the ohmmeter because a few shorted turns will only slightly reduce the DC resistance. When shorted turns are suspected because of a reduced resistance, the unit should be replaced. Excess heat across the short can eventually create an open in the coil.

5. The resistance between separate windings in a transformer is normally infinite. If the ohmmeter is connected between the primary and secondary windings and reads a low resistance, this indicates a short between the primary and the secondary. Similarly, the resistance between the winding and the core or frame should be infinite. If a low reading is shown between these points, this indicates a short.

Learning Event 10:

IDENTIFY DIODES, CATHODES, AND ANODES, TO DETERMINE SERVICEABILITY

1. The solid-state diode may be thought of as a resistor that has a high resistance in one direction and a very low resistance in the other direction. As you remember, the end of a diode which current can easily enter is the cathode, while the end through which current leaves is the anode. A diode may become open or shorted. In either case, the diode is useless. We will discuss some of the common procedures for checking a diode.

2. There are several physical differences in diodes, but even if we know these differences, we may still be unable to discern between a diode and a resistor. One sure way to tell the difference is to check with an ohmmeter. A resistor has the same resistance to current in both directions. As shown in Figure 1-26, a diode exhibits a different resistance when reversing lead positions.

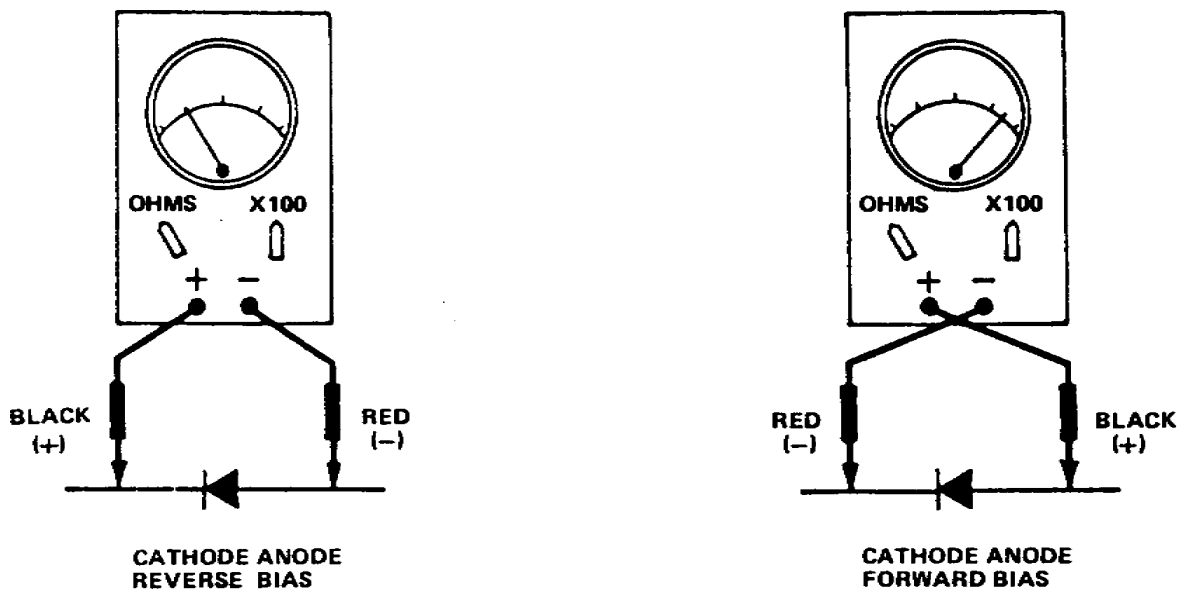


Figure 1-26. Forward-bias and reverse-bias diode

a. When the ohmmeter function on the PSM-6 is selected, the polarity of its leads reverses. The black lead becomes positive and the red lead becomes negative. In order to make the meter deflect in the proper direction, current must enter the meter through the black lead. To accomplish this on the ohms function, the internal battery is connected with its negative terminal to the red lead, and its positive terminal to the black lead.

b. The markings on a diode case often become illegible, and it is impossible to tell from visual inspection which lead is the cathode and which is the anode. In a situation such as this, it is possible to determine the cathode and anode of a diode by using an ohmmeter such as the PSM-6. To forward bias a diode, you must place a negative potential on the cathode. Therefore, when checking a diode for resistance ratio, if you know which lead is negative and which is positive, you can determine which lead is the cathode and which is the anode.

Learning Event 11

IDENTIFY SOME COMMON PROCEDURES FOR CHECKING TRANSISTORS

1. Transistors may be thought of essentially as two diodes mounted back to back. In this project you will use the PSM-6 to check the condition of transistors and determine their types. A transistor may become open or shorted. In either case, it is useless. The PSM-6 may be used to check the condition of the transistor. The following discussion will acquaint you with some of the common procedures for checking a transistor.

2. While using an ohmmeter to check the condition of a transistor, it is also possible to determine its type (PNP or NPN). Since a transistor is essentially two diodes mounted back to back, to check its condition you must measure the resistance ratio (about 10 to 1) of each junction emitter to base and collector to base, then measure the resistance between the emitter and the collector. Remember, when using the PSM-6 as an ohmmeter, the meter leads reverse polarity according to the way the internal power source is connected. The red lead becomes the negative lead, and the black lead becomes the positive lead.

a. Also, a transistor must be isolated from its related circuit before you can check its type or condition with an ohmmeter. In many cases this requires the transistor to be desoldered from the circuit and it is possible to obtain an erroneous ohmmeter indication. One example is shown in Figure 1-27.

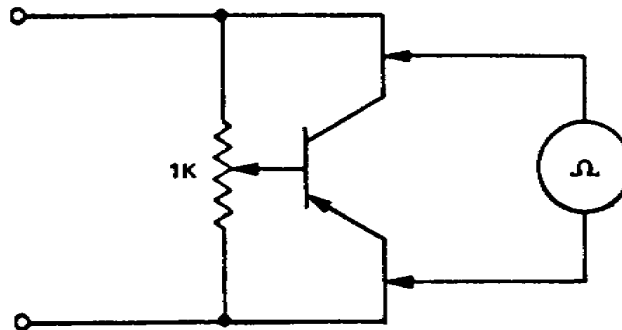


Figure 1-27. False ohmmeter reading

b. With the meter connected across the emitter-collector circuit with an open condition, the meter measures 1K since the current flows out the negative lead through the 1K resistor to the positive meter lead. For this reason, whenever you check a transistor, two of the three leads must be disconnected from the circuit.

c. A transistor, like a diode, has a low-resistance junction when it is forward-biased and a high resistance when it is reverse-biased. When the meter leads are connected red to base and black to emitter, the lowest value of resistance is measured. This indicates a forward-biased condition.

d. When the E-B junction is forward-biased, a negative potential is applied to the base. You remember from your study of diode testing, this indicates that the base is constructed of N-type material and that the emitter is constructed of P-type material. Once you know the type of material that the base and the emitter, or collector, are made of, you can determine the type of transistor. Since we know the emitter is P-type material and the base is N-type, this must be a PNP-type transistor.

Lesson 1
PRACTICE EXERCISE

1. What are two of the three principal measuring instruments used to perform maintenance?
 - a. Voltmeter and frequency counter
 - b. Ammeter and ohmmeter
 - c. Voltmeter and oscilloscope
 - d. Oscilloscope and frequency counter
2. To measure large amounts of current you must put what in the circuit?
 - a. Impedance matching device
 - b. Shunt device
 - c. Temperature coefficient
 - d. Capacitance device
3. What must you observe when connecting a meter in circuit?
 - a. The current
 - b. Voltage
 - c. Impedance
 - d. Polarity
4. To determine full-scale deflection for a voltmeter, you use what formula?
 - a. $R_x = R_m \frac{E_b - E_m}{E_m}$
 - b. $E = 1 \times R = 0.001 \times 50$
 - c. $R_s = \frac{I_m R_m}{I_s}$
 - d. $I = R + E$
5. What must you do to extend the range of a voltmeter?
 - a. Add a shunt device
 - b. Add a parallel resistor
 - c. Add an impedance device
 - d. Add a series resistor
6. What are the two sensitivity settings of a PSM-6 voltmeter?
 - a. 500 ohms per volt and 20,000 ohms per volt
 - b. 1000 ohms per volt and 20,000 ohms per volt
 - c. 1000 ohms per volt and 10,000 ohm per volt
 - d. 500 ohms per volt and 10,000 ohms per volt

7. If your meter is set at 10 volts DC and you read across a 50-volt line, what happens to the meter?
 - a. Coil may burn out
 - b. Nothing will happen
 - c. Waveform is all right
 - d. Syn lock is all right
8. The maximum frequency the PSM-6 can handle to measure AC voltage is how many Hz?
 - a. 400 Hz
 - b. 800 Hz
 - c. 1000 Hz
 - d. 1400 Hz
9. What should you expect to read on your meter if your leads are as shown in Figure 1-24?
 - a. 100 ohms
 - b. Nothing
 - c. Parallel path
 - d. Correct waveform
10. To determine what type of transistor you are checking you do what first?
 - a. Check emitter to base
 - b. Check collector to base
 - c. Check emitter to collector
 - d. Remove from the circuit

LESSON 2
DEFINE THE THEORY AND APPLICATION OF AN OSCILLOSCOPE

TASK

Describe the theory and terminology related to maintenance procedures for the oscilloscope.

CONDITIONS

Given the information and illustrations about terms and theory relating to application of the oscilloscope.

STANDARDS

Demonstrate competency of the task skills and knowledge by correctly responding to 80 percent of the multiple-choice test covering theory and terminology of using an oscilloscope.

REFERENCE

None

Learning Event 1:

DESCRIBE THE PRINCIPLES OF OPERATION OF AN OSCILLOSCOPE

1. The cathode-ray oscilloscope is a test instrument using a cathode-ray tube (CRT). It is one of the most important units of test equipment in maintenance and service. It is used to give a visual presentation of circuit waveforms which, by comparison, show the operation efficiency level of a portion of a circuit or a complete circuit contained in the system being tested.

2. When using the oscilloscope, you compare actual waveforms against optimum-efficiency waveforms which are permanently printed and located either at the equipment test points or on schematic diagrams in the applicable technical manuals. Scope patterns periodically taken at the test points are compared with those printed waveforms. Differences between the optimum waveform and the scope pattern indicate that the circuit (and the equipment) is below the optimum performance level and that corrective action should be applied.

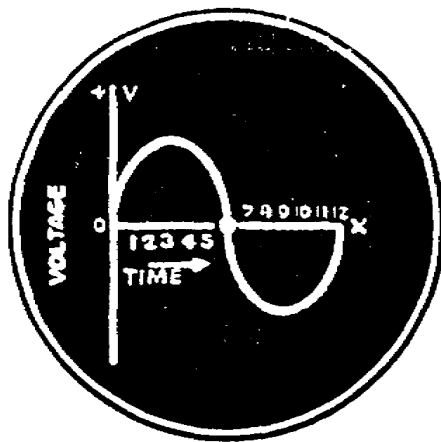
3. The beam of electrons from a cathode-ray tube follows a straight line unless deflected by an electric or a magnetic field. Cathode-ray tubes are of two types according to the method used to deflect the electron beam. These types are electrostatic and electromagnetic. The electrostatic type of CRT is used in practically all cathode-ray oscilloscopes operating at test instruments. In the electrostatic type, the beam is deflected by an electric field

set up across the deflection plates by a deflection voltage. The progressive deflection of the beam paints the picture of the waveform on the face of the cathode-ray tube.

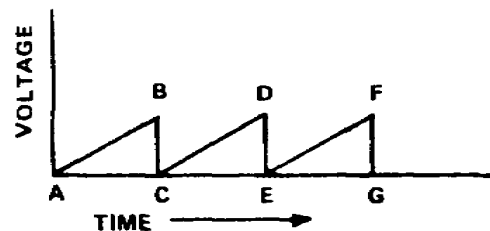
a. The inner face of the CRT is coated with a material which fluoresces when it is struck by the beam of electrical energy. In the CRT the beam is repeatedly swept across the screen. With the waveform, an alternating-current voltage can be observed on the screen when it is applied to one pair of deflection plates and when a second voltage of appropriate characteristics is simultaneously applied to the other pair of plates.

b. The conventional way of representing voltage or current of a sine waveform is shown in Figure 2-1. The voltage to be observed is applied between the vertical deflection plates; simultaneously, a sawtooth voltage is applied between the horizontal deflection plates. The sawtooth voltage moves the beam from left to right at a constant speed to form the time scale along line OX (fig 2-1). Then it returns the beam rapidly to the starting position at the left, and repeats the operation. The sawtooth voltage is so named because it resembles a sawtooth. As the voltage increases from A to B, the beam is swept from 0 to 12. As the voltage falls from B to C, the beam is quickly returned to its starting position (zero), and the process is repeated.

c. If an AC voltage of sine waveform is applied between the vertical deflection plates with no horizontal deflection, a single vertical line appears on the screen. The varying rate of change of the voltage is hidden because the vertical movements retrace themselves repeatedly on the same vertical line. Similarly, if a sweep voltage of sawtooth waveform is applied to the horizontal deflection plates in the absence of vertical deflection, a horizontal line is formed, and the rate of change of the voltage is obscured. However, when both voltage are introduced at the same time, the vertical motion of the beam is spread out across the screen to form a sine curve, such as the one shown in Figure 2-1.



A. SINE WAVEFORM PLOTTED AGAINST TIME



B. SAWTOOTH WAVEFORM PLOTTED AGAINST TIME

Figure 2-1. Sinewave and sawtooth voltage waveforms

4. A block diagram of a representative cathode-ray oscilloscope is shown in Figure 2-2. The horizontal deflection amplifier is a high-gain resistor-capacitor-coupled class A wideband voltage amplifier that increases the amplitude of the horizontal input voltages and applies it to the horizontal deflection plates. The sweep generator supplies a sawtooth voltage to the input of the horizontal amplifier through a switch that provides an optional external connection.

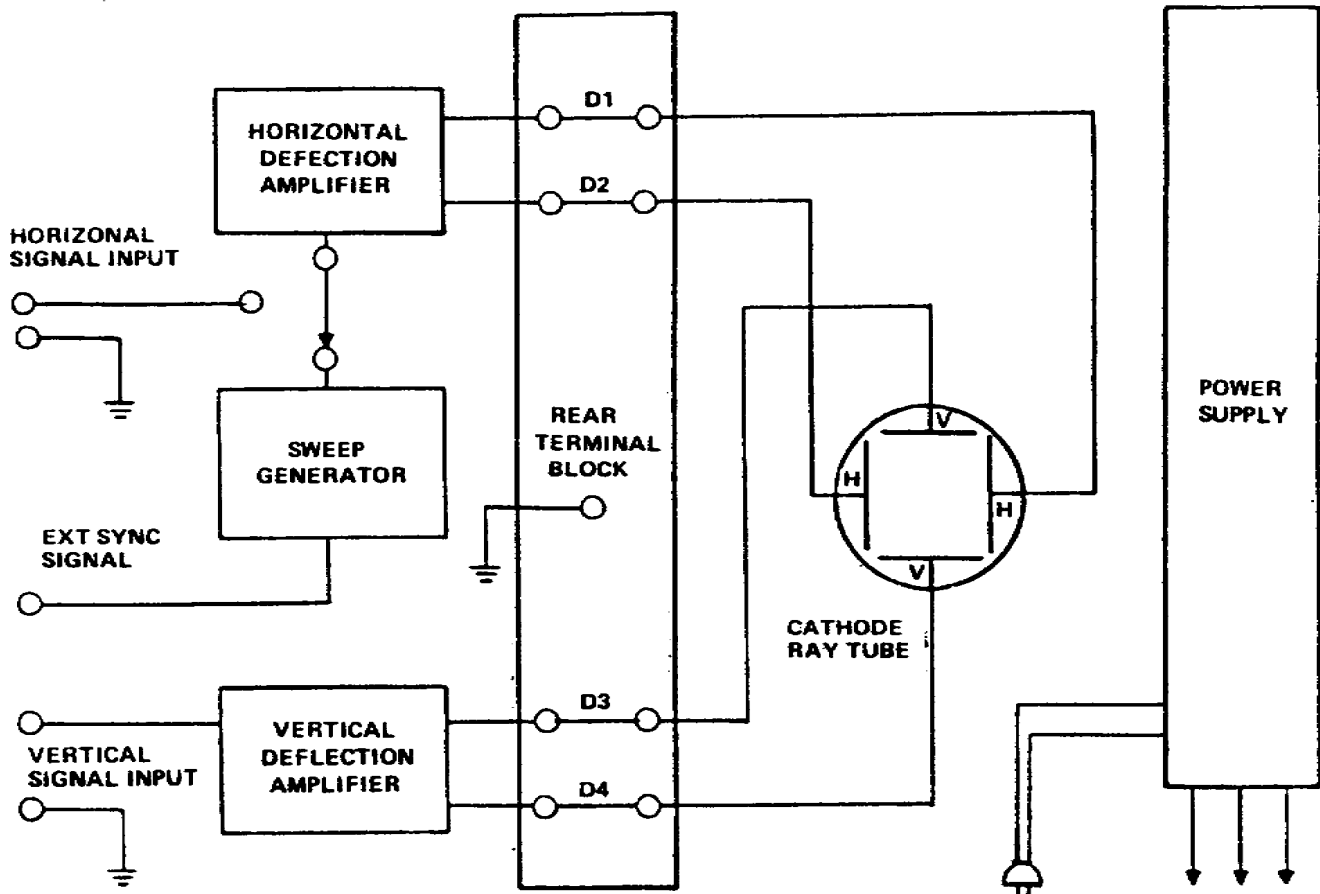


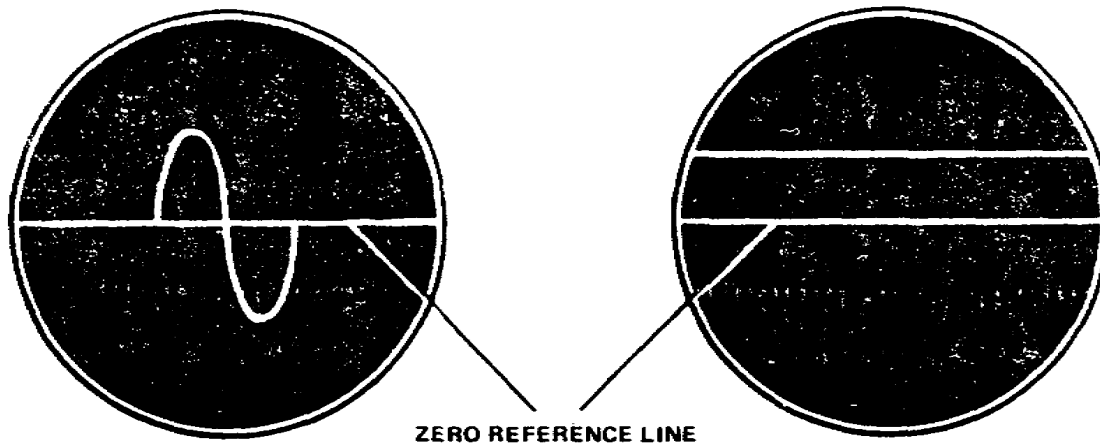
Figure 2-2. Block diagram of a typical cathode-ray oscilloscope

5. The vertical deflection amplifier increases the amplitude of the vertical input voltage before applying it to the vertical deflection plates. The input to the vertical amplifier appears in magnified form on the viewing screen as a graph of the current or voltage waveform being examined. A rear terminal block provides direct electrical connections to the deflection plates. These connections are used, for example, when one is examining direct-current potentials or high-frequency signals that would be attenuated excessively by the amplifier circuits. The power supply provides all DC voltages for the tubes, including a high DC voltage for the CRT.

a. You should consult the applicable technical manual for specific operating instruction covering your particular instrument. For proper use of any oscilloscope, you must consult the instruction regarding turn on and operation. Improper operation of the oscilloscope may cause damage to the instrument.

b. After the oscilloscope is properly set up, allow time for the instrument to warm up before you start to use it for checking waveforms. Make certain there is a good reference signal on the screen.

c. A couple of examples of a good signal, which you should be able to obtain at this point, are shown in Figure 2-3. If any other picture is obtained, adjust the appropriate scope controls until the proper picture is shown on the screen.



A. ALTERNATING CURRENT SIGNAL

B. DIRECT CURRENT SIGNAL



C. OTHER WAVESHAPES

Figure 2-3. Checking waveforms

Learning Event 2:
DESCRIBE THE VARIOUS CONTROLS ON AN OSCILLOSCOPE

1. If you understand the principle of operation of one oscilloscope you can apply the same techniques to other oscilloscopes, since all scopes operate on the same principle and have about the same controls. By discussing the controls in general you will have sufficient information to operate most types of oscilloscopes.

a. The two basic controls affecting the readability of the scope display are the beam intensity and focusing controls. These two controls are considered together because they interact to an extent that adjusting one requires adjusting the other.

b. The intensity control is used to adjust the spot to the brightness desired. When the spot is still, it becomes brighter, larger, and out of focus as the intensity control is rotated toward maximum intensity. Further rotation of this control produces secondary emission, causing a halo around the spot. When the halo appears, the intensity control must be immediately decreased to eliminate the halo before the screen is burned.

(1) The halo from an excessively bright spot disappears to some extent when the electron beam is subjected to the deflection fields because the energy in the electron beam is distributed over a much greater area.

(2) However, the spot will produce a wide trace, tending to obliterate any available fine detail.

c. The focus control is used to produce a round spot with a clearly defined edge. A stationary spot becomes smaller and sharper when you rotate the focus control from minimum toward maximum value. As you rotate this control beyond the focal point, an out-of-focus spot is again produced.

d. A poorly focused spot can appear elliptical instead of round. When the elliptical spot is set into motion under the influence of deflecting fields, it is noticeable as a line of variable thickness. The spot in motion produces a thin line only at the peaks of sine wave, while the positive and negative-going portions of the sine wave are considerably thickened.

e. Depending upon the velocity of the spot, an increase in spot intensity may be required because the rapidly moving spot does not remain in one position long enough to fully excite the phosphor screen of the cathode-ray tube. You may observe this effect in Figure 2-4, when viewing square waves with extremely rapid rise and decay times.



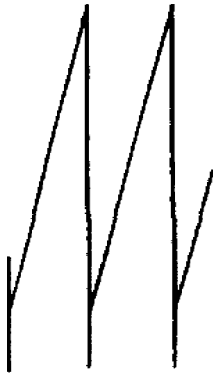
Figure 2-4. Beam intensity affected by spot velocity

f. The basic controls that determine the size of the display are potentiometers used as horizontal and vertical gain controls. Adjustment of the horizontal gain control increases or decreases the height of the display.

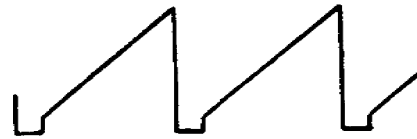
(1) An attenuator (occasionally referred to as a multiplier) is sometimes used prior to adjusting the gain control. It is associated with the vertical amplifier and is calibrated in steps of 1x, 3x, 10x, 30x, and 100x. The attenuation at each step is expressed with respect to the attenuation range at step 1x. Operation of this control results in abrupt changes in the scope display because of step attenuation of the input signal level.

(2) The attenuator is called a multiplier because the attenuator output is usually larger than the vertical amplifier input. The scope can be used as a direct-reading, peak-to-peak voltmeter once the vertical amplifier is calibrated. Calibrate the amplifier by setting the attenuator to 1x, inject a signal of known amplitude, and adjust the display to vertical dimensions of convenient known height. Advancing the gain control too far for a given signal, or applying a signal that exceeds the amplification capabilities of the horizontal or vertical amplifiers, results in overloading.

g. Interpretation of an observed waveform depends greatly upon proper proportioning of the horizontal and vertical dimensions of the scope display. Uncertainty or lack of knowledge concerning the signal that an amplifier is processing, together with improper display proportioning, can lead to an erroneous conclusion concerning the test circuit. Figure 2-5b shows the display of a trapezoidal waveform where the horizontal and vertical dimensions are acceptable.



A. VERTICAL GAIN HIGH, HORIZONTAL GAIN LOW



B. CORRECTLY PROPORTIONED



C. VERTICAL GAIN LOW, HORIZONTAL GAIN HIGH

Figure 2-5a, b, and c. Apparent changes in waveform with changes in vertical to horizontal proportioning

(1) By contrast, if both the horizontal and vertical gain controls are changed randomly so the change in the vertical direction predominates, the characteristics of the trapezoidal waveform become masked.

(2) If you were inexperienced in the use of a scope, or if you had no previous knowledge that the waveform was supposed to be a trapezoid, you could reach the erroneous conclusion that the display was a sawtooth waveform. On the other hand, if you know that the circuit produces a trapezoidal wave and wish to closely inspect the waveform for any irregularities, such proportioning of the display is entirely acceptable and advisable.

(3) By changing the horizontal and vertical gain controls once more to the opposite extreme so the display is exaggerated predominantly in the horizontal direction, you produce a waveform like that shown in Figure 2-5c. Under these conditions, the trapezoidal waveform viewed on the scope screen could be interpreted as a sawtooth waveform with excessive retrace time.

h. A height-to-width ratio of approximately 2 to 3 or 4 to 5 provides optimum display proportions for general purpose waveform examinations. Once you are certain of the waveform you are inspecting, expansion or exaggeration of the waveform in the vertical or horizontal direction to observe waveform irregularities may be very advantageous.

i. Sometimes the signal at the point under examination is so small that a display of more than a half-inch in the vertical dimension cannot be obtained. The horizontal dimension of the display must also be reduced so that the display is correctly proportioned. A reduction in beam intensity, followed by a refocusing of the spot, generally produces a display which is easier to view.

2. The vertical and horizontal positioning controls permit you to shift the position of the entire display to any portion of the viewing area desired. The vertical positioning control is a continuously variable potentiometer that permits the display to be moved up and down by any amount, including those positions away from the viewing area. Similarly, the horizontal positioning permits the side-to-side movement of the entire display.

3. Occasionally, while examining a waveform, you may notice irregularities at or near some extremity of the display. You can enlarge the display using other scope controls, and then position it by using the horizontal and vertical position controls, so the irregularity appears within the viewing area. The remainder of the signal, of which the irregularity is only a small part, is then deflected off the screen toward the neck of the cathode-ray tube, where it cannot be viewed. At the edges of the tube, the display being deflected off the screen widens and becomes considerably blurred at the rim of the tube. This distortion is caused by the curvature and the reinforcing thickness of the glass.

4. The coarse and fine sweep frequency controls of a scope provide for changing the frequency of the sawtooth sweep generator output (fig 2-2). The coarse frequency control is generally a multiposition rotary switch used to select the desired range of sawtooth frequency by changing the forward sweep time charging capacitor. The fine frequency control is a potentiometer used to adjust the sweep time constant (TC) to obtain the exact frequency needed for suitable display.

a. Selecting different shapes of the horizontal amplifier signals is also determined by the setting of the coarse frequency control. Five or six positions of the coarse frequency control are used to cover the full frequency range of the internal sawtooth sweep generator.

b. Sinewave signals are widely used for time base sweep applications. Such signals are easily obtained from the 60-Hz power source within the scope. The sawtooth sweep generator is disabled by the coarse frequency control when either the line sweep function or the direct function is selected.

5. With the fine frequency control and the coarse frequency control, you can select the time base required to display as many cycles or pulses as desired to view the waveform. Except for markings which aid in estimating some previous position, the fine frequency control is not calibrated because the time base frequency is only used as a means of obtaining a convenient display.

6. You can easily determine the frequency of the time base generator by injecting a known frequency into the vertical amplifier and manipulating the coarse and fine frequency controls for a stationary pattern of one cycle. If the injected signal is a 60-Hz sinewave, one sinewave lasting $1/60$ of a second is displayed by one sawtooth lasting for $1/60$ of a second. Therefore, the frequency of the time base generator is also 60 Hz and is a 1-to-1 frequency ratio, as shown in Figure 2-6.

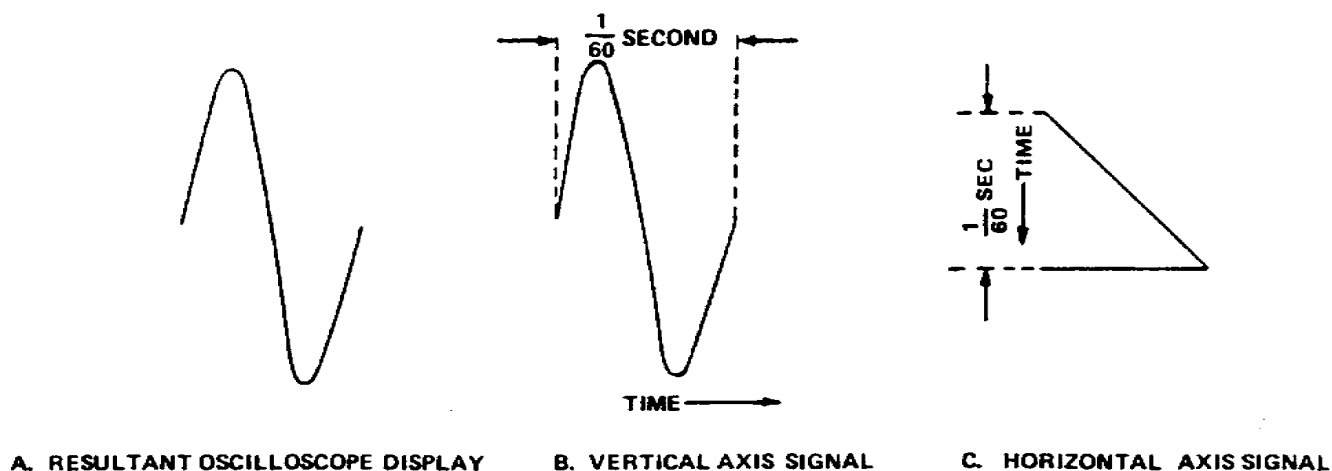


Figure 2-6. Sweep frequency equals test signal frequency

7. If the pattern is not stationary, the method described is not valid and cannot be used with accuracy. It is easy to stop a scope waveform display by using these controls if the frequency of the waveform under investigation is within the frequency limits of the scope.

8. Now let's consider a couple of sawtooth sweep frequencies that are lower than the frequency of the waveform applied to the vertical input terminals.

a. Consider an input sinewave signal with a frequency of 60 Hz, and the resultant stationary display on the scope showing two complete cycles of the input waveform for one sweep of the time base generator. In this case the time base sweep is slow enough to display two cycles of the input wave, each one lasting $1/60$ th of a second. The sweep time is now a total of $2/60$ second (30 Hz) (fig 2-7).

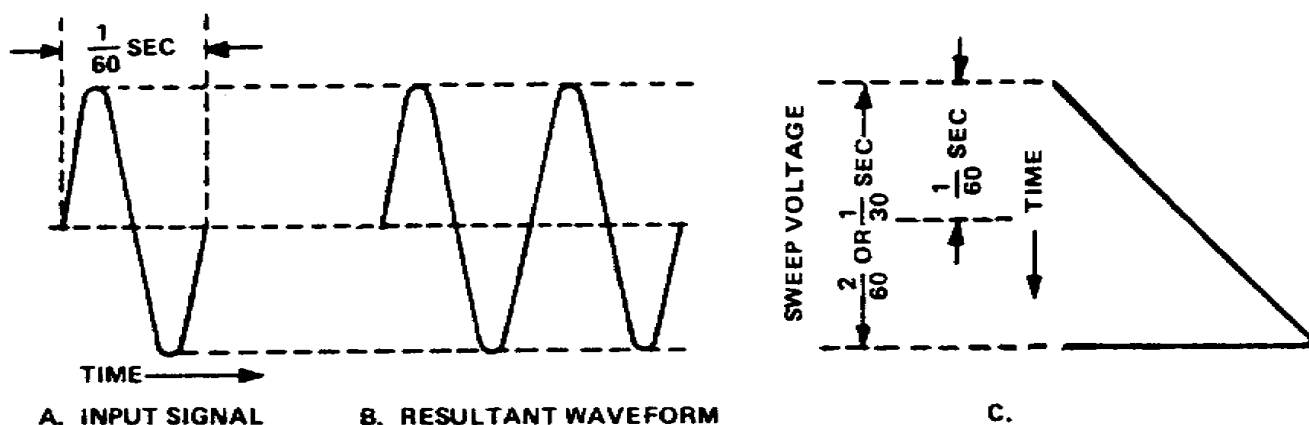


Figure 2-7. Sweep frequency lower than test signal frequency

b. Consider a sinewave input signal of 1500 Hz. The resultant scope display is adjusted until a stationary pattern of three complete cycles is observed for one sweep of the time base generator. The sweep is now displaying three cycles, with each cycle lasting $1/1500$ second, and there are 500 sweeps per second.

c. When the display includes one or more complete cycles of an input waveform, whether completely stationary or not, the frequency of the time base generator is equal to or lower than that of the input waveform. In these cases where the display is adjusted for a stationary pattern, the frequency of the time base generator may be calculated by dividing the input frequency by the number of complete cycles displayed.

9. The synchronizing control provides for injecting a portion of the signal being amplified in the vertical section into the time base generator to produce a stationary waveform display. Throughout this discussion about time base sweep controls, we have emphasized the stationary display. To obtain a stationary display, the vertical amplifier input and the horizontal amplifier output have a whole-number frequency ratio and an in-phase relationship.

10. The synchronizing control potentiometer is used to inject as much of the synchronizing signal as needed to produce a stationary display pattern. The adjustment of this control is not critical, but an excessive synchronizing signal can severely distort the observed signal due to erratic functioning of the time base generator.

a. When there is no synchronizing waveform injected into the time base generator, the generator initiates a sweep when the potential on the plate is equal to the ionizing potential of the generator tube. The resulting sweep is free running under these conditions because the sweep rate is governed by the frequency-determining network of the generator. The display obtained may appear as a variety of constantly changing patterns, depending upon the frequency of the generator with respect to the waveform present in the vertical amplifier.

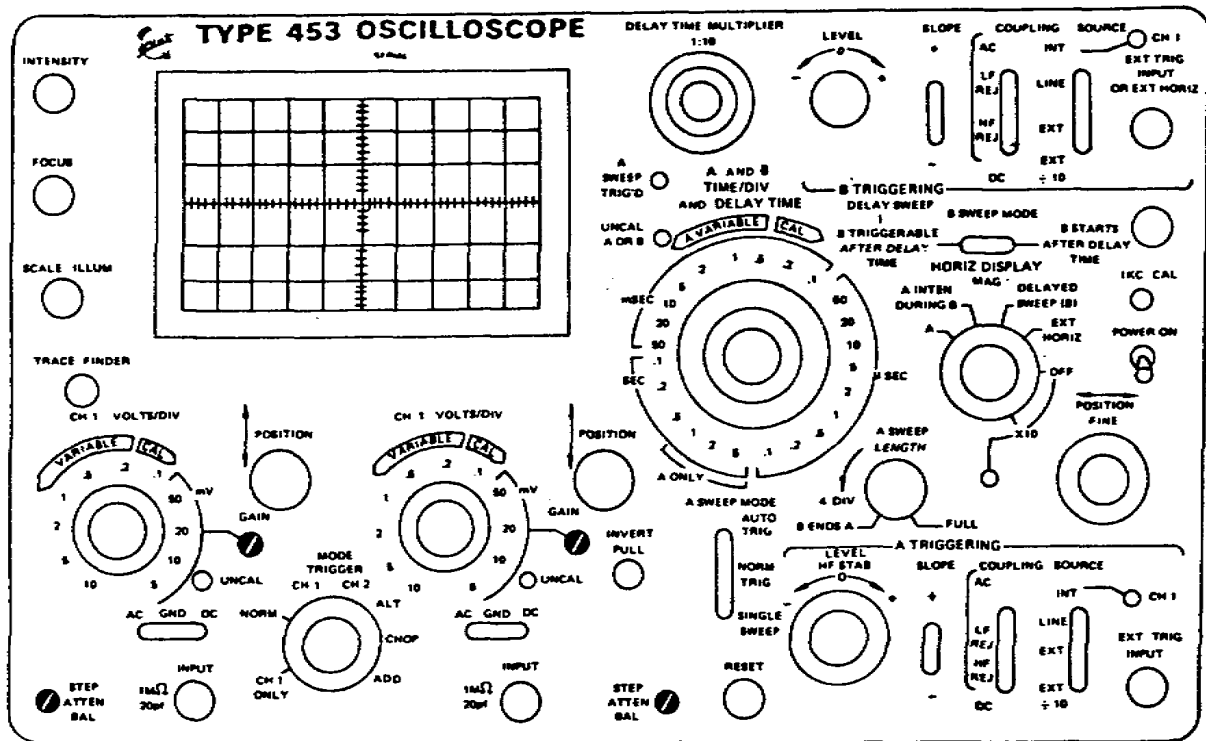
b. If the synchronizing control is advanced too far, the amplitude of the synchronizing signal produces a distorted sweep signal. The display obtained is undesirable because it is difficult to visualize the type of signal applied at the vertical input terminal. However, the pattern remains stationary, being continuously displayed as a single trace until corrective action is taken.

c. The synchronizing signal is often injected directly into the time base generator from a source external to the scope. Its use is dependent chiefly upon the type of signal undergoing observation and is especially useful for initiating triggered sweeps.

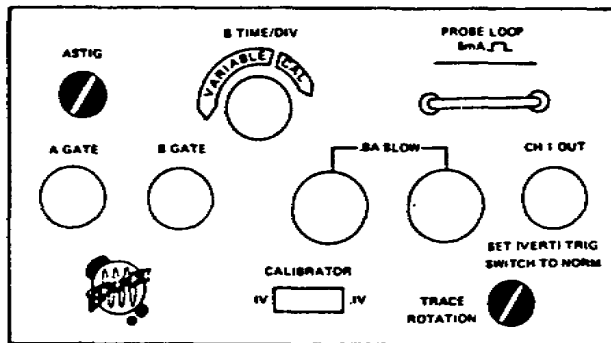
Learning Event 3:

DESCRIBE THE CHARACTERISTICS OF THE 453 OSCILLOSCOPE

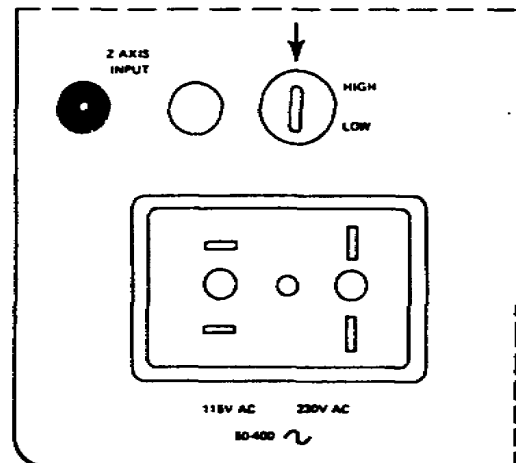
1. One of the first things to observe concerning the 453 oscilloscope is its dual-channel capability. That is, you can apply two signals to the scope and can present the two signals at the same time or separately.
2. The vertical deflection system has a frequency response from DC to 50 MHz. Frequency response means the frequency over which the scope amplifies all frequencies uniformly. Another characteristic of the vertical deflection system is the deflection factor, expressed as the voltage required to produce a unit deflection on the CRT screen. The deflection accuracy of this scope is ± 0.3 percent of the indicated deflection. When channel 1 and channel 2 are cascaded by using an external cable, they can provide a 1-millivolt deflection factor, the volts/div switch on both channels must be set to 5 mV.
3. The 453 scope can also measure risetime accurately. By properly using the 20-mV to 10-V per division switches, you can measure risetime with accuracy to within 6.7 nanoseconds on each channel. Stable triggering is provided over the full range of vertical frequency response by the trigger circuits. Triggers are used to start the sweep generator.
4. The horizontal sweep system provides sweep rates from 0.1 microsecond per division to 5 seconds per division in 24 calibrated steps. Under normal operating conditions, the sweep accuracy is ± 3 percent of the indicated sweep rate. Using the sweep magnified characteristics, each sweep rate can be increased to 10 times the indicated sweep rate by expanding the center division of display. The calibrated delay time characteristic gives a sweep delay that is continuous from 50 seconds to 1 microsecond.
5. As we have already pointed out, this scope performs in a variety of environmental conditions. The instrument performs satisfactorily over a temperature range of -15°C to $+55^{\circ}\text{C}$ degrees. A fan in the rear of the scope blows air through the instrument. If the internal temperature exceeds a safe operating level, an automatic resetting thermal cutoff cuts off the instrument power. The power automatically comes back on when the temperature returns to a safe level. The warmup time for a given accuracy is 20 minutes. All of the characteristics of this instrument are listed in the applicable technical manual or technical order.
6. Front panel, left side controls for the 453 scope. The controls located to the left of the screen in Figure 2-8 control the signal display on the screen. Keep in mind the purpose of intensity, focus, scale illumination, trace finder, mode, trigger, volts/division, step attenuator balance, vertical position, and AC-GND-DC controls.
7. The intensity control (fig 2-8a) controls the brightness of the display. When setting the intensity control, do not set the control for more brightness than is necessary to provide a satisfactory display. Too much intensity can damage the CRT phosphor.



a. Front panel



b. Side panel



c. Rear panel

Figure 2-8. Type 453 oscilloscope

8. Adjust the focus control (fig 2-8a) to obtain a clear, well-defined image on the screen. The focus of the display may be affected by setting the intensity control. Therefore, it may be necessary to adjust the focus control a small amount when the intensity control is changed.

9. The scale illumination control (fig 2-8a) is directly under the focus control. Adjust the scale illumination control so that the graticule lines are illuminated to desired brightness.

10. The trace finder control (fig 2-8a) is used to locate a display which exceeds the scan of the display area. When you press the trace finder button, the horizontal and vertical deflection is reduced, and the display is compressed within the graticule area. After locating the display, center it by adjusting the position controls.

11. There are five modes of operation that can be selected by the mode switch. They are channel 1, channel 2, alternate, chopped, and algebraic addition (fig 2-8a). When either channel 1 or channel 2 is selected, only the signal that is applied to the respective channel is displayed. The other three modes are for dual-trace operations.

a. When the alternate position is selected, the signal applied to one channel is presented for one cycle of the horizontal sweep voltage. Then the signal applied to the other channel is presented for the next cycle of the sweep voltage. The scope CRT coating retains the image of the first channel's presentation during the time the second channel makes its presentation when the sweep rates are sufficient. Although all sweep rates can be used in the alternate mode, alternate mode switching becomes visually perceptible at slower sweep speeds. The chopped mode is preferred at sweep rates below about 0.5 millisecond per division.

b. In the chopped mode the signals applied to the two channels are electronically switched on and off to produce a display. The switching rate is about 500Hz. A segment of the signal displayed from channel 1 is displayed for about one microsecond; then a segment of the next signal from channel 2 is displayed for the next microsecond. For most applications the chopped mode provides the best display at sweep rates slower than about 0.5 millisecond or when dual-trace single-shot phenomena are to be displayed. At faster sweep rates the chopped switching becomes obvious and interferes with the display.

c. The third dual-trace operation is the algebraic addition mode. When the algebraic addition mode is selected, the signals from channel 1 and channel 2 are algebraically added, and the algebraic sum is displayed on the CRT. If you want to improve the signal-to-noise ratio, you can eliminate part of the noise by using this mode to display the difference of two signals. You can do this in the algebraic addition mode by following these steps.

(1) Apply the signal that contains the desired and undesired signals to channel 1 input and apply the signal containing only the undesired signal to channel 2.

(2) Invert the signal applied to channel 2 by pulling the invert switch located with vertical channel 2 controls.

(3) When the undesired components of both signals, opposite in polarity, are added algebraically, adjust the channel 2 volts-per-division switch and variable control to reduce the undesired signal.

12. The trigger control is a dial concentric with the mode switch (fig 2-8a). The trigger control selects the source of internal triggering signal from the vertical system. When the trigger control is set to normal, the sweep circuits are triggered from the displayed channel(s). Also, the channel 1 signal is available at channel 1 output connector, which is located on the side panel (fig 2-8b). If the trigger control is set to the channel 1 only position, the sweep circuits are triggered only from a signal on channel 1. No signal is available at the channel 1 output connector.

13. Since the vertical controls of channel 1 (fig 2-8a) are duplicated in channel 2, we will cover only the vertical controls of channel 1. Keep in mind that channel 2 controls perform the same function.

a. Locate the channel 1 volts-per-division switch on the left side of the front panel under the trace finder button. When you select a position on the volts/division control, you select a specific combination of frequency-compensated attenuator networks through which the applied signal must pass.

b. Notice that a smaller variable control is concentric with the volts/division control. To be specific, the variable control provides a continuously variable deflection factor to at least 2.5 times the setting of the volts/division switch. Always turn the variable control clockwise to the calibrated position when you adjust the vertical gain of that channel.

c. To check the vertical gain of the channel, the volts/division switch is set to 20 mV, and a 0.1-volt signal from the calibrator is connected to the channel's input jack. If the vertical deflection does not measure exactly 5 divisions, turn the gain adjustment to obtain exactly 5 divisions of deflection. The gain should be set with the volts/division switch set to 20 mV.

14. The step attenuator balance control (fig 2-8a). You should make the gain adjustment before making the step attenuator check.

a. To check the step attenuator balance, set the AC-GND-DC switch to GND, and set the A sweep mode switch to automatic trigger to produce a free-running sweep.

b. When a vertical shift in the trace occurs as you change the volts/division switch from 20 mV to 4 mV, an adjustment is required.

c. To make the step attenuator balance adjustment, position the trace to the graticule centerline when the volts/division switch is set to 20 mV. Then rotate the volts/division switch to 5 mV and adjust the step attenuator

balance to return the trace to the graticule centerline. When the step attenuator balance is properly adjusted, the trace does not shift when the volts/division switch is changed from 20mV to 5mV.

15. The vertical positioning control, which is located to the right of the volts/division switch (fig 2-8a), controls the vertical position of the trace.

16. The AC-GND-DC switch (fig 2-8a) is located below the volts/division control. It is used to select the method of coupling the input signal to the grid of the input amplifier. When DC position is selected, all components of the input signal are passed to the input amplifier. DC coupling can be used for most applications. However, with the DC component, it is better to select the AC position.

a. In the AC position the DC component of the input signal is blocked by a capacitor in the input circuit. The low frequency limit in the AC position is about 1.6 Hz. Although you can use the AC position for frequencies between 1.6 Hz and 16 Hz, use the DC position for signals below 16 Hz because they are attenuated by AC coupling. Also, you can expect some low frequency distortion at these low frequencies in the AC position.

b. When you select the GND position, a DC ground reference is established at the input circuit. The grid of the input tube is at ground potential. However, the input signal is not grounded. You may obtain a reference without removing the applied signal from the input connector (fig 2-8b).

Lesson 2
PRACTICE EXERCISE

1. What class of operation does the horizontal deflection amplifier operate under?
 - a. Class A
 - b. Class A & B
 - c. Class B
 - d. Class C
2. What can you use the oscilloscope for other than reading waveforms?
 - a. Waveform monitor
 - b. Peak to peak voltmeter
 - c. Vector scope
 - d. Ohmmeter
3. What must you adjust to obtain the exact frequency for a sweep time constant?
 - a. Course frequency adjust
 - b. Sawtooth sweep generator
 - c. Fine frequency adjust
 - d. Base frequency
4. For the 453 oscilloscope, how closely can the risetime of a signal be measured?
 - a. +/- 3 percent
 - b. 6.7 nanoseconds
 - c. One millivolt
 - d. 15.5 nanoseconds
5. How many modes of operation does the 453 oscilloscope have?
 - a. 3 modes
 - b. 4 modes
 - c. 5 modes
 - d. 7 modes

LESSON 3
DESCRIBE THE APPLICATION OF GRATING GENERATOR, DOT BAR
GENERATOR, AND VIDEO SWEEP MARKER GENERATOR

TASK

Describe the theory and terminology of maintenance with the application of video sweep marker generator, grating generator, and dot bar generator.

CONDITIONS: Given information and illustrations about terms and theory relating to the application of video sweep marker generator, grating generator, and dot bar generator.

STANDARDS

Demonstrate competency of the task, skills and knowledge by correctly responding to 80 percent of the multiple-choice test covering theory and terminology of the application of video sweep marker generator, grating generator, and dot bar generator.

REFERENCES

None

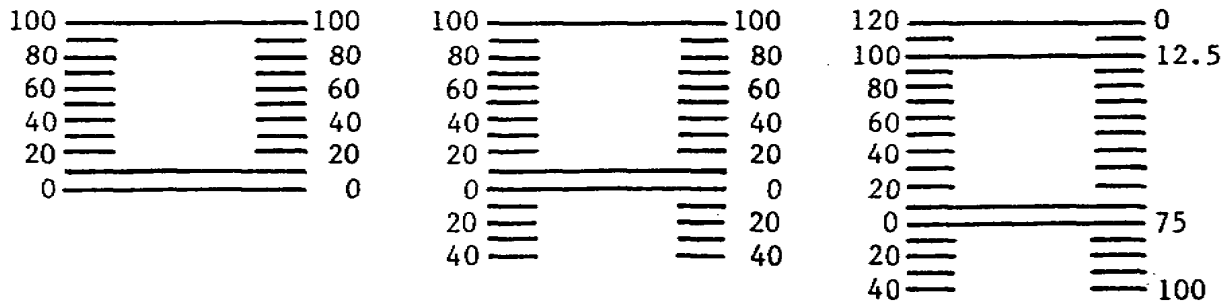
Learning Event 1:

DESCRIBE THE USE AND PURPOSE OF A WAVEFORM MONITOR

1. The waveform monitor is a specialized oscilloscope which provides detailed or varied video information. It can present many video combinations from a complete television frame to a single segment of a desired line or even a single pulse shape or edge. Consequently, the waveform monitor is much more adaptable to television testing than the average scope. Its uses are much more suitable for system tests than for individual circuit or circuit component troubleshooting.

2. The major difference between the waveform monitor and the oscilloscope is the measuring scale. Examples of three of the scales for waveform monitors are shown in Figure 3-1.

ESTABLISHING MEASUREMENTS STANDARDS



No. 1

For use at camera control unit when sync is not inserted in this unit

Reference White - 100
Reference Black - 10
Blanking Level - 0
(Setup Value 10%)

No. 2

Monitoring scale for use on any waveform monitor where sync is present in the signal

Reference White - 100
Reference Black - 10
Blanking Level - 0
Sync Peaks - 40

No. 3

Used where desired to relate levels to depth of modulation of video carrier

Reference White - 12.5%
Reference Black - 67.5%
Blanking Level - 75%
Sync Peaks - 100%
Zero carrier (should never occur in practice) is set at 120 on scale

Figure 3-1. Video level measuring scales

a. These scales were designed to present a standard video level of 1 volt peak-to-peak. The scales are called Institute of Electrical and Electronics Engineers (IEEE) or Institute of Radio Engineers (IRE) scales. They are divided into 140 units which equal 1-volt peak-to-peak of composite video.

b. This 1-volt signal contains 0.714 volt video information (0 to 1000 units) and 0.286 volt sync (0 to -40 units).

3. The three scales in figure 3-1 illustrate the various points to be monitored in a system. Use operating scale No. 1 for points in the system where sync is not added. Operating Scale No. 2 is used in the system to measure composite signal (sync added). Operating Scale No. 3 is used at transmitter locations to relate IEEE units to depth of modulation.

Learning Event 2:
DESCRIBE THE USES OF A SIGNAL GENERATOR

1. A signal generator is a test device which generates an alternating voltage signal suitable for test purposes. It is, in effect, a small radio transmitter generating a signal of any desired frequency. The signal may be either modulated or unmodulated and is used for the following checks or tests:

a. Alignment of tuned circuits, sensitivity measurements, and approximate frequency measurements.

b. For frequency measurements, its use is limited because it is not a frequency meter and cannot be used as a frequency standard.

2. The signal generator is used primarily in the alignment of tuned circuits. A signal generator is classified according to its frequency and is one of two types: audio frequency or radio frequency.

a. Audio frequency generators produce signals with a frequency range from 20 Hz to 20kHz.

b. Radio-frequency generators produce signals covering a range of frequencies from 10 kHz to 10 GHz. Many radio-frequency generators have audio outputs separately available through front panel jacks. These outputs are normally 100 and 400 Hz.

3. When using the generator, the output test signal is coupled into the circuit being tested, and its progress through the equipment is traced by the use of high-impedance indicating devices such as vacuum-tube voltmeters or scopes. In many signal generators, calibrated networks of resistors, called attenuators, are provided. These are used to regulate the voltage of the output signal and also provide correct impedance values for matching the input impedance of the circuit under testing. Accurately calibrated attenuators are used, because the signal strength must be regulated to avoid overloading the circuit receiving the signal.

4. There are many types of signal generators. They may be classified roughly by frequency into audio signal generators, video signal generators, radio frequency generators, frequency-modulated RF generators, and special types which combine all of these frequency ranges.

5. Audio signal generators.

a. Audio signal generators produce stable audio-frequency signals used for testing audio equipment. Video signal generators produce signals which include the audio range and extend considerably further into the RF range. These generators are used in testing video amplifiers and other wideband circuits.

b. In both audio and video generators, the major components include a power supply, an oscillator, one or more amplifiers, and an output control. Voltage regulation circuits are necessary to ensure stability of the oscilla-

tor in the generators which derive power from 115-volt AC sources. In portable generators, battery power supplies are usually used, and these require no voltage regulation.

c. In the audio and video generators of the beat-frequency type, the output frequency is produced by mixing the signals of two radio frequency oscillators, one of which is fixed in frequency and the other variable. The difference in frequency of the two is equal to the desired audio or video frequency.

(1) Audio signal generators often include RC oscillators in which the audio frequency is directly produced. In these a resistance-capacitance circuit is the frequency-determining part of the oscillator. The frequency varies when either the resistance or the capacitance is changed in value.

(2) In commercial generators, however, the capacitance alone is often chosen as the variable element. The change in frequency which can be produced by this method is limited, and it is usually necessary to cover the entire range of the generator in steps. This is accomplished by providing several RC circuits, each corresponding to a portion of the entire range of frequency values. The circuits in the oscillator are switched one at a time to give the desired portion of the audio range.

d. The amplifier section of the block diagram (fig 3-2) usually consists of a voltage amplifier and one or two power amplifiers. These are coupled by means of RC networks, and the output of the final power amplifier is often coupled to the attenuator, or output control, by means of an output transformer.

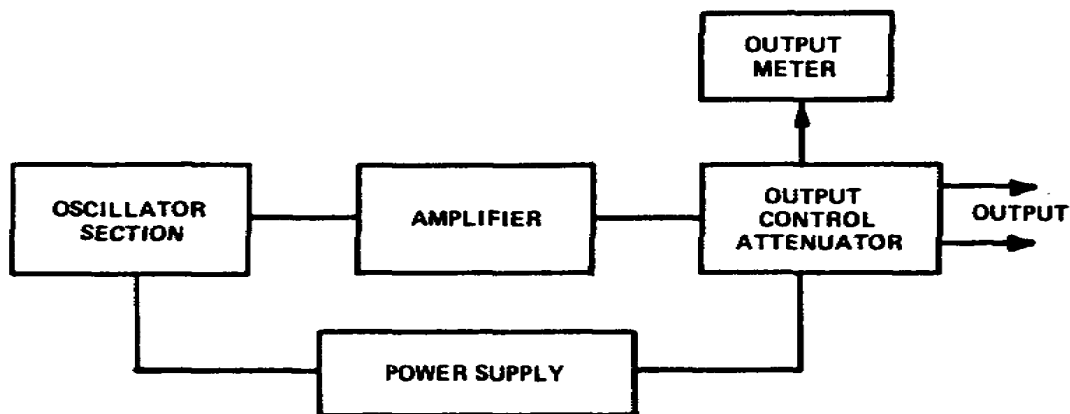


Figure 3-2. Block diagram of audio or video signal generator

e. The output control section provides a means of matching the output signal to the input of the equipment under test and regulating the amplitude of the signal.

6. Radio frequency (RF) signal generators.

a. A typical radio frequency signal generator contains, in addition to the necessary power supply, three main sections; an oscillator circuit, a modulator, and an output control circuit. The internal modulator modulates the radio frequency signal of the oscillator. In addition, most RF generators are provided with connections through which an external source of modulation of any desired waveform may be applied to the generated signal. Metal shielding surrounds the unit to prevent the entrance of signals from the oscillator into the circuit under test by means other than through the output circuit of the generator.

b. A block diagram of a representative RF signal generator is shown in Figure 3-3. The function of the oscillator stage is to produce a signal which can be accurately set in frequency at any point in the range of the generator. The type of oscillator circuit used depends on the range of the frequencies for which the generator is designed. In low frequency signal generators, the resonating circuit consists of a group of coils combined with a variable capacitor. One of the coils has a selector switch attached to the capacitor to provide an LC circuit that has the correct range of resonant frequencies.

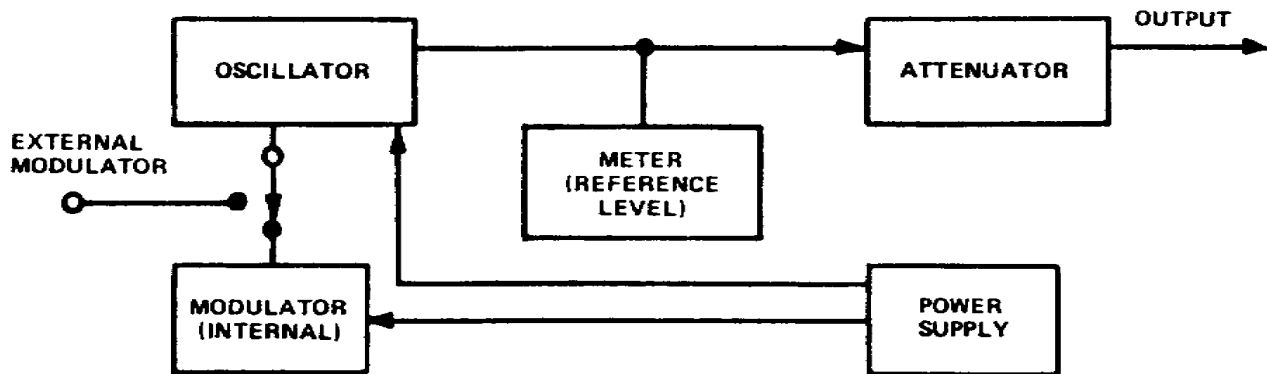


Figure 3-3. Block diagram of RF signal generator

c. The function of the modulating circuit is the production of audio (or video) voltage which can be superimposed on the RF signal produced by the oscillator. The modulating signal may be provided by an audio oscillator within the generator, or it may be derived from an external source. In some signal generators, either of these methods of modulation may be used. In addition, a means of disabling the modulator section is used whereby the pure unmodulated signal from the oscillator can be used when it is desired.

d. The type of modulation used depends on the application of the particular signal generator. The modulating voltage may be either a sine wave, a square wave, or pulse of varying duration. In some specialized generators, provision is made for pulse modulation in which the RF signal can be pulsed over a wide range of repetition rates and at various pulse widths.

e. Usually the output of the generator contains a calibrated attenuator and often an output level meter. The output level meter gives an indication of, and permits control of, the output voltage of the generator by indicating arbitrary values of output readings in tenths through the value of one. The attenuator selects the amount of this output. The attenuator, a group of resistors forming a voltage-dropping circuit, is controlled by a knob which is calibrated in microvolts. When the control element is adjusted so the output meter reads unity (1.0), the reading on the attenuator knob gives the exact value of the output in microvolts. If output voltage is desired at a lower value, the control is varied until the meter indicates some decimal value less than one, and this decimal is multiplied by the attenuator reading to give the output in microvolts.

7. Frequency-modulated RF signal generators. Frequency-modulated RF signal generators are widely used for testing frequency-modulated receivers and for visual alignment of AM receivers. A frequency-modulated signal is an alternating voltage in which the frequency varies above and below a given center frequency value. The overall frequency change is called the frequency swing.

Learning Event 3:

DETERMINE THE DIFFERENT MODES OF AN ELECTRONIC COUNTER

1. An electronic counter is used for the comparison of an unknown frequency or time interval with a known frequency or time interval. The counter's logic is designed to present this information in an easy-to-read numerical display. The accuracy of this measurement depends on the stability of the known frequency. This known frequency is obtained from the internal oscillator of the counter.

2. The logic control interconnects the proper circuit, selects the proper measurement units for display, and starts the measurement cycle.

a. An electronic counter can be operated in the totalizing mode with the main gate flip-flop controlled by the manual start-stop switch illustrated in Figure 3-4. With the switch at start, the decimal counter assemblies totalize the input pulses until the main gate is closed by changing the switch to stop. The display on the counter shows the pulses received during the interval between manual start and manual stop.

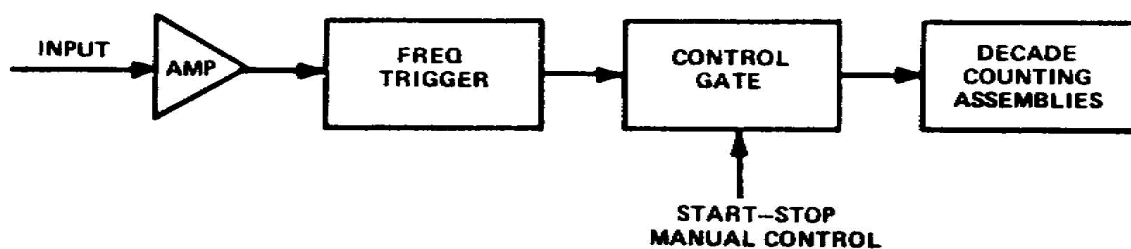


Figure 3-4. Electronic counter totalizing method, block diagram

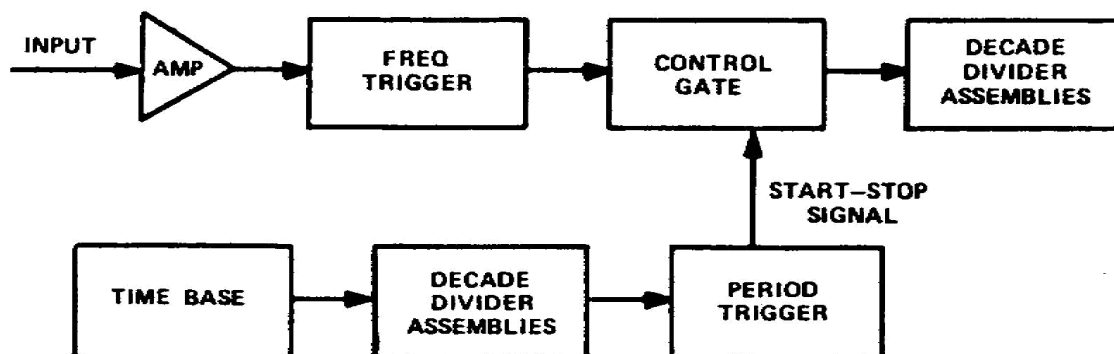


Figure 3-5. Electronic counter frequency measurement, block diagram

b. Frequency measurements. The input signal is first applied to a signal shaper that changes the input signal to uniform pulses. The output of the shaper is then applied to the decade counting assemblies, often passing through a gate which is controlled by the time base of the counter, as shown in Figure 3-5.

c. The number of pulses for the desired period of time, totalized in the decade-counting assemblies, represents the frequency of the input signal. The counted frequency is shown on a numerical readout with a positioned decimal point. This reading is held until a new sample is taken. The sample rate control decides the display time of the frequency measurement being performed. The sample rate control also starts counter reset and the next measurement cycle. The time base selector switch determines the gating interval, positions the decimal point, and selects the proper measurement units.

d. The electronic counter makes periodic measurements with its function arranged (fig 3-6). An unknown input signal controls the gate time. The time base frequency is counted in the decade-counting assemblies. The input shaping circuit uses the positive-going zero axis crossing of successive cycles as triggers for opening and closing the gate.

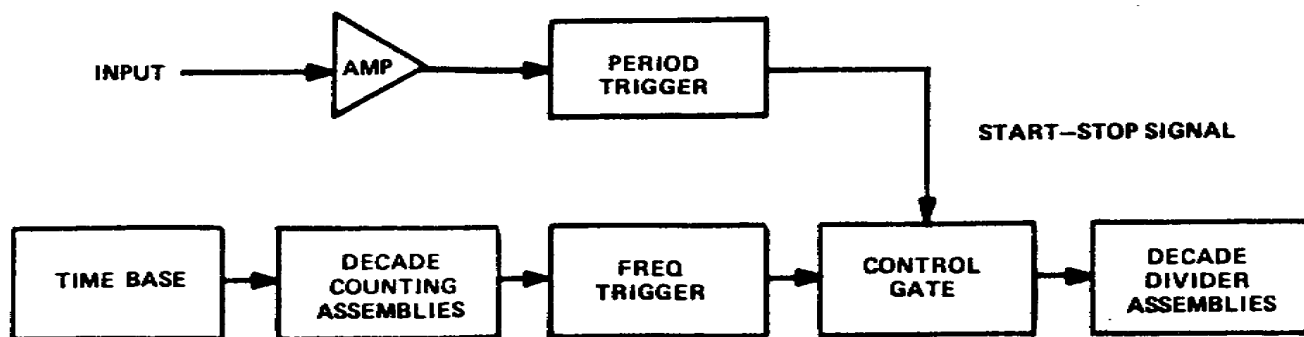


Figure 3-6. Electronic counter period measurement, block diagram

(1) A periodic measurement gives a more accurate measurement of an unknown low frequency signal because of increased resolution. A frequency measurement of 100 hertz on a counter with a 10-second gate time will be displayed as 0000.1000 kilohertz (kHz).

(2) When using the same counter, a single period measurement of 100 Hz with 10 megahertz (MHz) as the counter frequency would be displayed as 0010000.0 microseconds on the counter. The resolution is increased by a factor of 100.

e. The ratio of two frequencies is obtained by using the lower frequency signal for gate control and having the higher frequency signal counted (fig 3-7). If you use the proper transducers, ratio measurements may be applied to any phenomena, providing the phenomena can be represented by sine waves or pulses. Measurements that can be made with the ratio method are clutch slippage, gear ratios, and frequency divider operations.

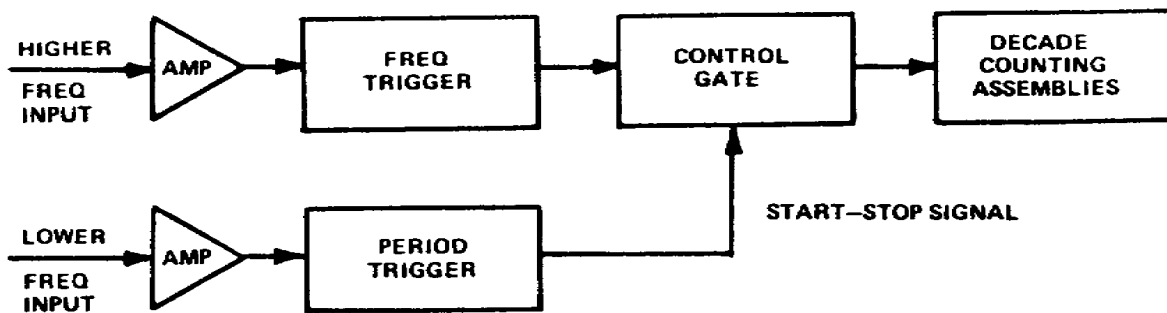


Figure 3-7. Electronic counter ratio measurement, block diagram

f. If you use a preset counter, or a counter with a preset plug-in unit, you may make frequency measurements by proper selections of the gate time. A plug-in unit may be set to a gate time of 600 milliseconds. This setting causes an input from a 100-pulse-per revolution tachometer to be displayed directly in revolutions per minute.

g. Time interval measurements are similar to period measurements. The only exception is that the trigger points on the single waveform or waveforms are adjustable, and when the com-sep switch is placed in COM position, measurements may be made from one point on a waveform to another point on the same waveform (fig 3-8). Triggering polarity, slope, and amplitude are selected for each channel separately. The time interval is displayed in microseconds, milliseconds, or seconds.

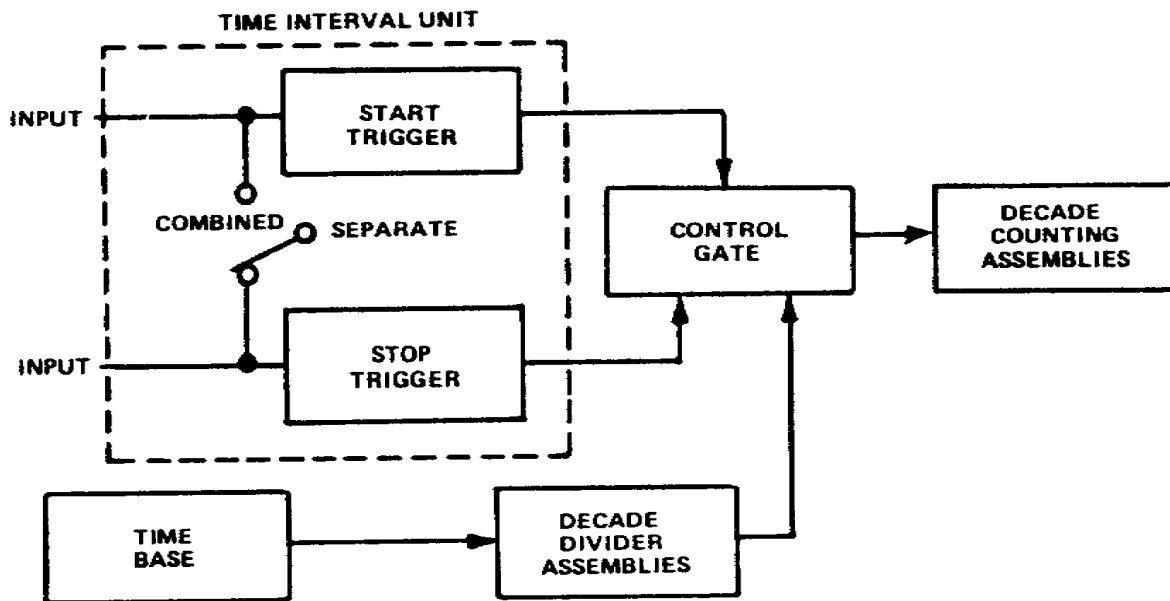


Figure 3-8. Electronic counter time interval measurement, block diagram

(1) A time interval counter that can measure extremely short time intervals is available.

(2) A 1-MHz external frequency standard is multiplied to 100 MHz in order to obtain 10-nanosecond time increments as the counted frequency, resulting in good resolution.

3. Precise high-frequency measurements are possible because of several innovations in quartz oscillator crystal design. These have resulted in superior electronic counter time bases. Ambient temperature affects the frequency by being outside ranges of -20 degrees to +50 degrees C. The accuracy of the counter is limited by the time base oscillator stability because this oscillator circuit furnishes the definitive time information for a measurement. The time base must be calibrated periodically, because the drift rate causes a cumulative deviation in frequency which can result in measurement error. The accuracy of precision quartz oscillators is usually expressed as long-term stability. Short-term stability refers to changes in average frequency over a time sufficiently short so that the change in frequency due to long-term effects is negligible.

4. There are four methods of extending the digital frequency measuring capability of electronic counters. These methods are the prescaling method, the heterodyne method, the harmonic generator, and the transfer oscillator method. Each of the four methods is explained, and the basic principles of operation are shown in block diagram.

a. In the prescaling method, (fig 3-9) the input signal is amplified and scaled by a decade in order to divide the input frequency by a factor of 10. The input to the counter from the prescaler is now within the direct measuring range of the counter. For example, if the prescaler is used in conjunction with a 10-MHz electronic counter, then the direct measuring range of the counter is extended to 100 MHz.

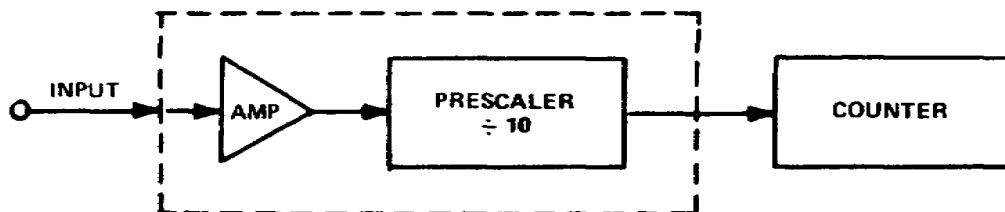


Figure 3-9. Electronic counter prescaling method, block diagram

b. The heterodyne method is a high frequency measuring method based on subtracting known reference frequencies until the different frequency is within the direct measuring range of the electronic counter.

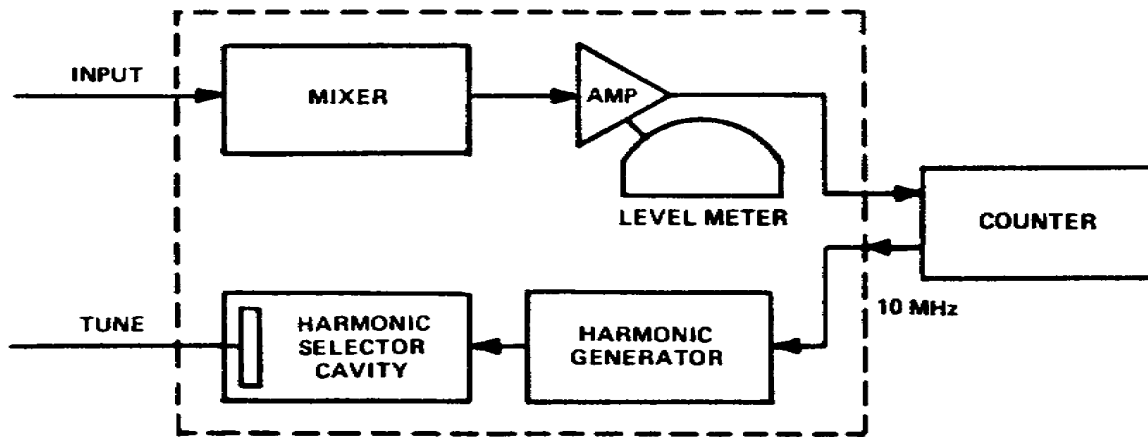


Figure 3-10. Electronic counter heterodyne method, block diagram

c. A harmonic generator produces all harmonics of 10 MHz. A harmonic selector cavity is manually tuned until the selected harmonic, mixed with the input, produces a different frequency that is fed through an amplifier to the counter. A level meter indicates when the harmonic selector reaches the proper reference frequency. To find the frequency being measured, add the reference frequencies to the electronic counter display. This addition usually involves nothing more than placing one or two digits before the counter reading.

d. The transfer oscillator method (fig 3-11) provides an extremely wide measuring range with counter accuracy. In this method, a transfer oscillator is used in conjunction with a 50-MHz electronic counter. The transfer oscillator method compares harmonics of a fundamental frequency with an unknown high frequency.

(1) When you are measuring, adjust the fundamental frequency to the point where one odd harmonic has the same frequency as the input signal. This is accomplished by beating harmonics against the input signal in a mixer and varying the fundamental frequency until the difference frequency is zero. The results are observed on a built-in scope.

(2) The counter can read out the unknown frequency which equals the fundamental frequency multiplied by the harmonic number. The proper harmonic number, selected by the front panel harmonic preset switches, automatically expands the counting period of the counter. This expansion results in a direct presentation of the input frequency in the readout of the counter.

(3) The transfer scope includes a phase lock that is designed to synchronize itself with the input signal. Changing the transfer oscillator frequency to maintain a precise 1-MHz beat frequency compensates for any frequency change in either the input signal or the transfer scope.

5. The automatic method (fig 3-12) makes it possible to obtain instantaneous direct readings of unknown microwave inputs.

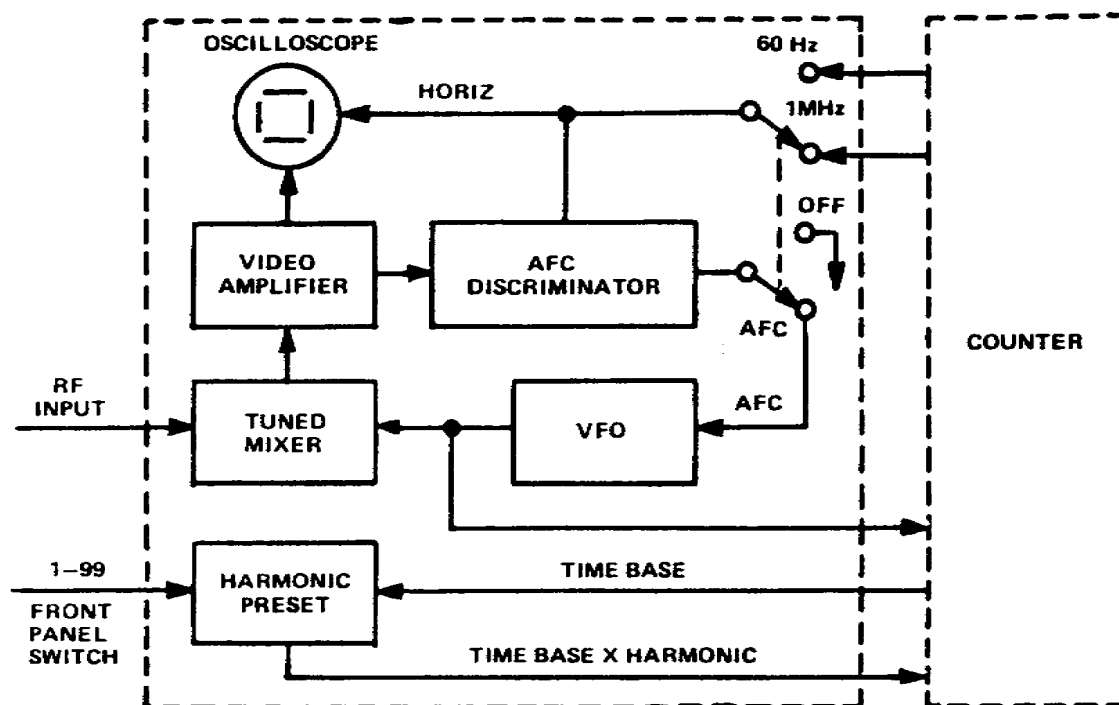


Figure 3-11. Electronic counter transfer oscillator method, block diagram

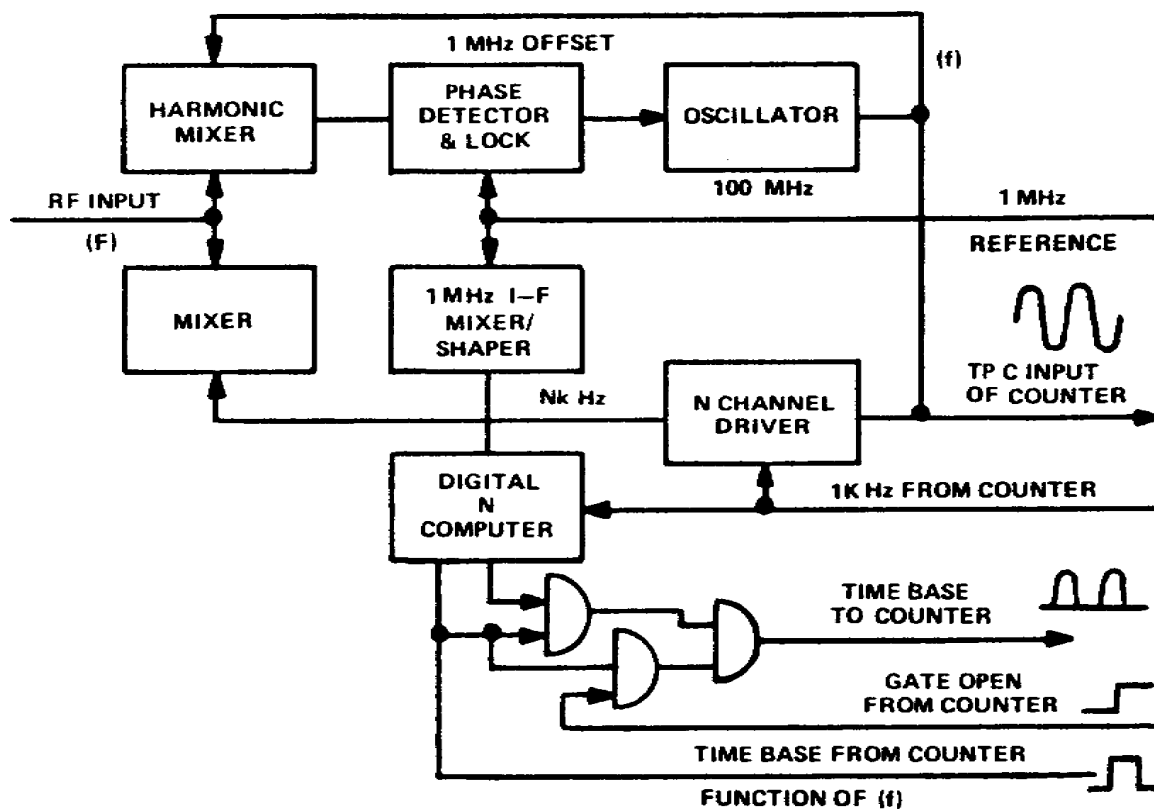


Figure 3-12. Electronic counter automatic method, block diagram

a. An unknown signal (F) is fed into a harmonic mixer. A swept oscillator frequency (f) is applied to a mixer, and harmonics are generated and mixed with the input signal. A 1-MHz signal from the counter time base is used as a phase detector and locking frequency for the output signal of the mixer. This circuit phase-locks the proper harmonic (N) of the swept oscillator signal (f) with the input signal (F) at a precise 1-MHz offset.

b. The input signal (F) is also applied to a second mixer which has the same swept oscillator signal (f) but with the addition of a 1-kHz signal from the counter. When the phase detector locks the swept oscillator, the signal in this second mixer will be N (f=1kHz) which is mixed with the input frequency (f).

c. When the offset is exactly 1 MHz, then $F = fN \pm 1 \text{ MHz}$. The output of the second mixer is 1 MHz plus N kHz. The 1-MHz signal from the counter is mixed with the output of the second mixer and the resultant signal is N kHz. The mixed signal (N kHz) is then applied to a digital N computer circuit along with the 1-kHz signal from the counter.

d. This circuit then divides the N kHz by 1 kHz and the result is N pulses. The N pulses are gated in conjunction with the counter time base signal. This extension multiplies $f \times N \pm 1 \text{ MHz}$ so the counter can read out the unknown input frequency directly with the 1-MHz offset.

Learning Event 4:
DESCRIBE THE USES OF A SOLID STATE DEVICE TESTER

1. There are several methods for testing solid state devices. In this section we will discuss the testing of diodes and transistors using a typical oscilloscope and locally manufactured diode and transistor testers. You must fully understand the operation of the scope. If you have any doubt about the operation of the scope, review the section on scopes.

2. Most diodes and transistors can be tested for shorts and opens with a multimeter, when no solid-state tester is available. The use of a multimeter is discouraged because the meter's internal power supply can cause damage to the component under testing or other components in the circuit under testing.

3. Using a diode tester and an oscilloscope, you can easily test and compare diodes. Diode testers are commercially available. In most cases your shop will not be authorized to have any type of diode tester. You can build your own which will be extremely accurate and efficient. Figure 3-13 shows the schematic diagram of a simple diode tester, and Figure 3-14 shows the pictorial diagram. A variable transformer provides the 0- to 110-volt input. For testing most diodes a 6-VAC input is sufficient, but you must exceed the breakdown voltage when testing a zener diode. With a variable 0- to 110-volt transformer, you can adjust the input to test most zener diodes. The 6.3-VAC center tap (C/T) input to this tester (fig 3-14) is for reference only. This input must be variable to exceed the breakdown voltage of a zener diode under test.

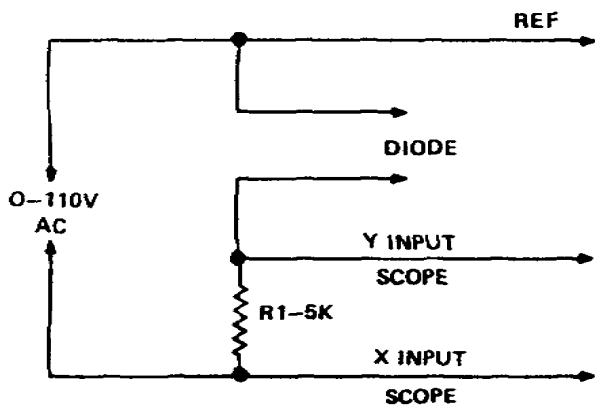


Figure 3-13. Diode tester schematic diagram

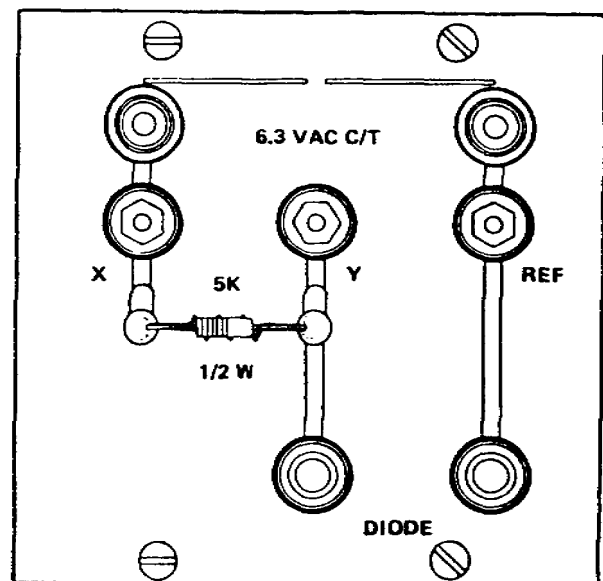


Figure 3-14. Locally manufactured diode tester

4. To test a diode, follow this procedure:

a. Connect the horizontal or sweep probe of the scope to the X terminal of the tester (fig 3-14) and adjust the display to a 2-centimeter horizontal line (common scope lead to reference).

b. Remove the X lead and connect the vertical probe of the scope to the Y terminal of the tester (fig 3-14) and adjust the vertical display on the scope to 4 centimeters by adjusting the variable AC input to the tester.

c. Reconnect the X lead as mentioned above. You should get a diagonal display on the scope as illustrated in Figure 3-15a.

d. Connect the diode between the diode terminals on the tester and compare the trace on the oscilloscope with those shown in Figure 3-15.

e. Determine the condition of the diode. By testing known good diodes you can make your own trace patterns for comparison with other diodes.

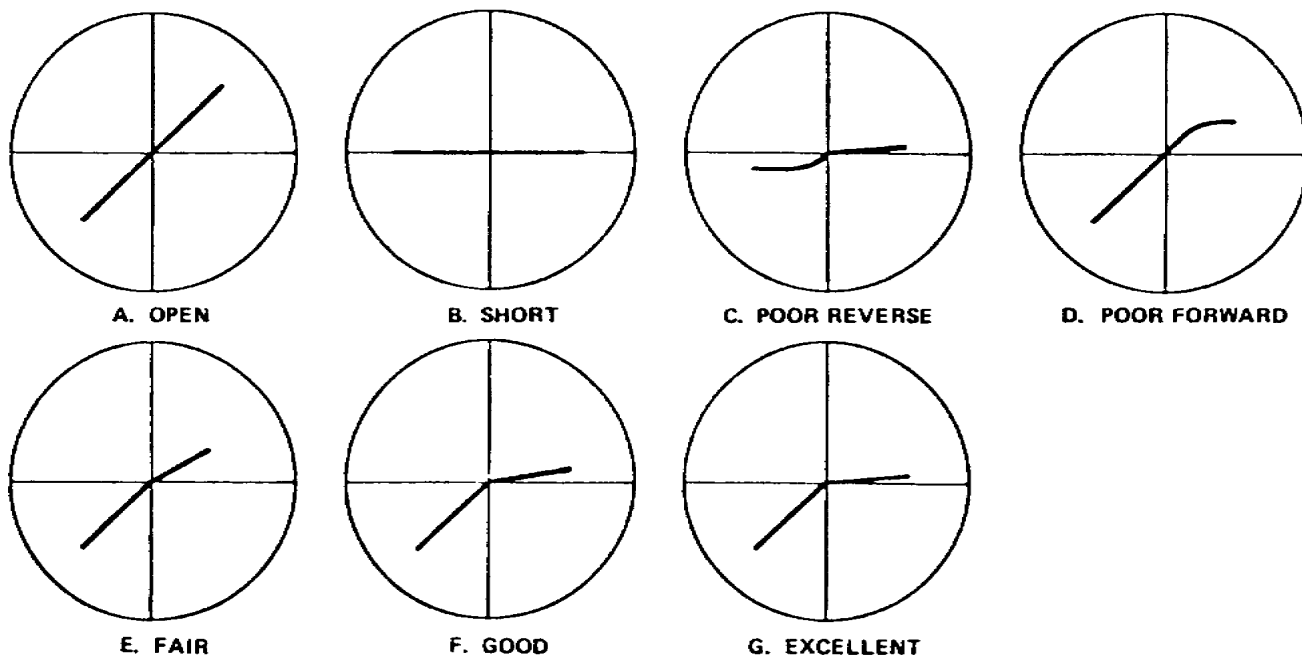


Figure 3-15. Oscilloscope traces of diodes

5. Transistors, unlike vacuum tubes, are very rugged because they can tolerate vibration and shock. Under normal operating conditions a transistor provides a long period of dependable operation. Transistors may fail when subjected to minor overloads. You can use various test methods to determine the condition of a transistor. In many cases you can substitute a transistor of known good quality for a questionable one. This method is highly accurate and sometimes expeditious. You should avoid indiscriminate substitution. When transistors are soldered into equipment, substitution is impractical because the transistor may be damaged during desoldering or soldering. In this case, it is generally desirable to test the transistor in the circuit if a tester with this capability is available.

6. Since certain fundamental characteristics are indicative of the condition of a transistor, test equipment is made to test these characteristics with the transistor either in or out of the circuit. Although triode testers are commercially available, as are diode testers, you may have to make your own. Figure 3-16 shows the schematic diagram of a typical transistor tester and Figure 3-17 shows a locally made transistor tester.

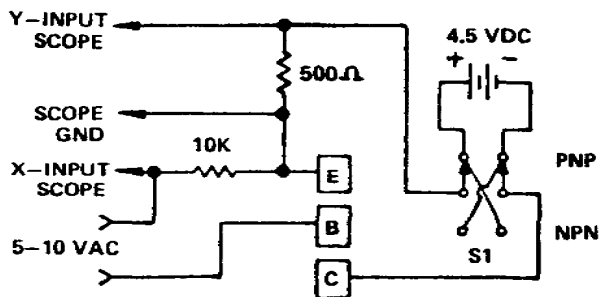


Figure 3-16. Transistor tester schematic

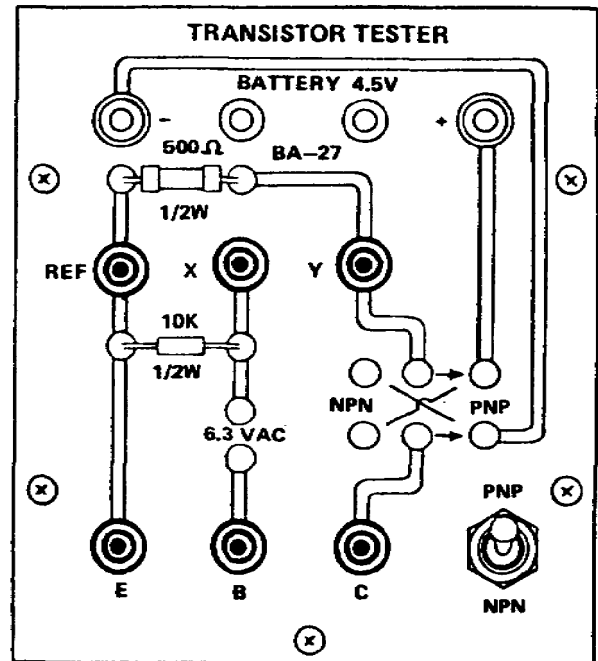


Figure 3-17. Locally manufactured transistor tester

7. By using a transistor tester and a scope you can test transistors in the same manner as you test diodes. To test a transistor connect the transistor tester to the scope, and adjust the scope as follows:

a. Connect the vertical input probe of the scope to the Y input terminal of the tester, the horizontal input probe of the scope to the X input terminal of the tester, and the common probe of the scope to the reference terminal on the tester.

b. Short E to B on the tester, and adjust the horizontal gain control on the scope until you get a 4-cm horizontal display on the scope.

c. Short E to C on the tester, and adjust the signal voltage until you get a 2-cm vertical display.

d. Connect a transistor to the tester (emitter to E, base to B, and collector to C).

8. Determine the condition of the transistor under testing by comparing your trace with the traces illustrated in Figures 3-18, 3-19, and 3-20. As in testing diodes, you can test known good transistors and make your own trace patterns to compare with other transistors.

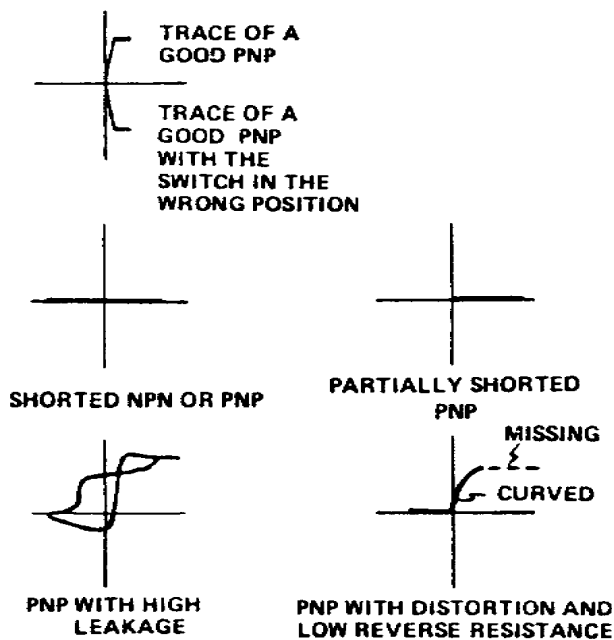


Figure 3-18. Oscilloscope traces of PNP transistors

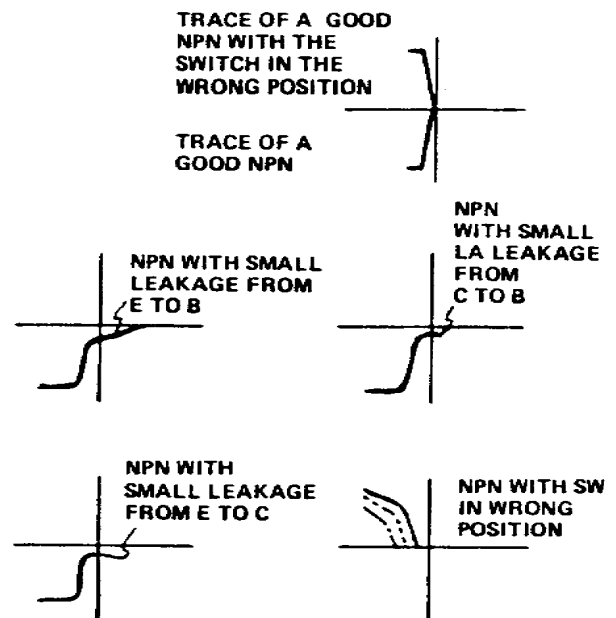


Figure 3-19. Oscilloscope traces of NPN transistors

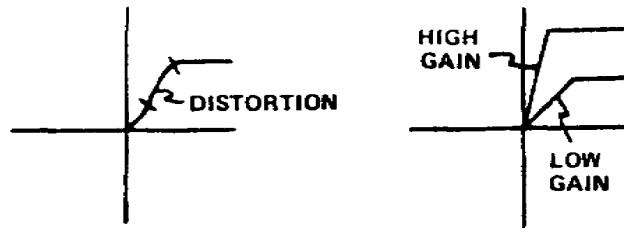


Figure 3-20. Oscilloscope traces of distortion and gain in transistors.

Learning Event 5:
IDENTIFY VIDEO TESTING EQUIPMENT AND ITS OPERATION

1. This section will discuss the grating generator, dot bar generator and video sweep marker generator. We will go through their purpose and operation, as well as interpret their output patterns.

2. The grating generator provides a convenient means of checking and adjusting the linearity of television deflection circuits. It generates a timing signal synchronized by standard synchronizing generator or the deflection circuits of the receiver under test, and injects this signal into the video circuit being tested. The pattern produced has the appearance of a grating as shown in Figure 3-21.

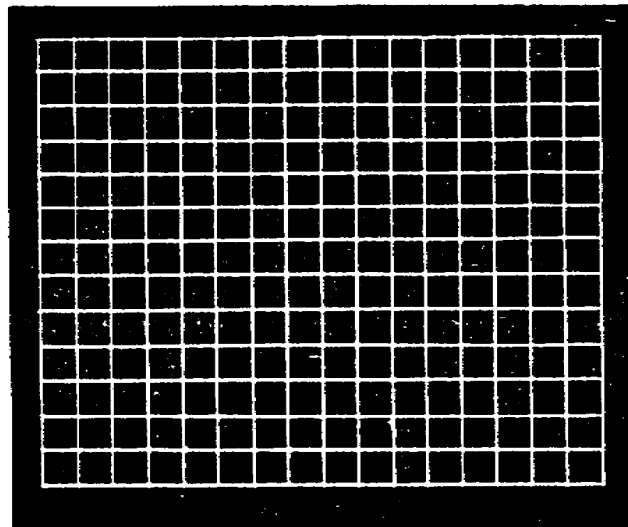


Figure 3-21. Grating test pattern

a. The block diagram, Figure 3-22, shows the typical grating generator circuitry necessary to produce a satisfactory grating pattern.

(1) The desired pattern is produced by inserting the horizontal and vertical pulses from either a standard television synchronizing generator or the deflection circuits of a television receiver, as previously stated.

(2) The vertical pulses are then multiplied 15 times, while the horizontal pulses are multiplied 20 times. They are vectorially added in the adder circuit and the output is applied to a clipper.

(3) The output pattern of the grating generator is determined by the bias point of the clipper circuit. When the bias is adjusted so that either the horizontal or vertical signal extends above the clipping level, the resulting output is a grating pattern.

(4) Moreover, the grating signal must be clipped at both ends of the amplitude range so that the lines will not appear blacker than black at their intersecting points.

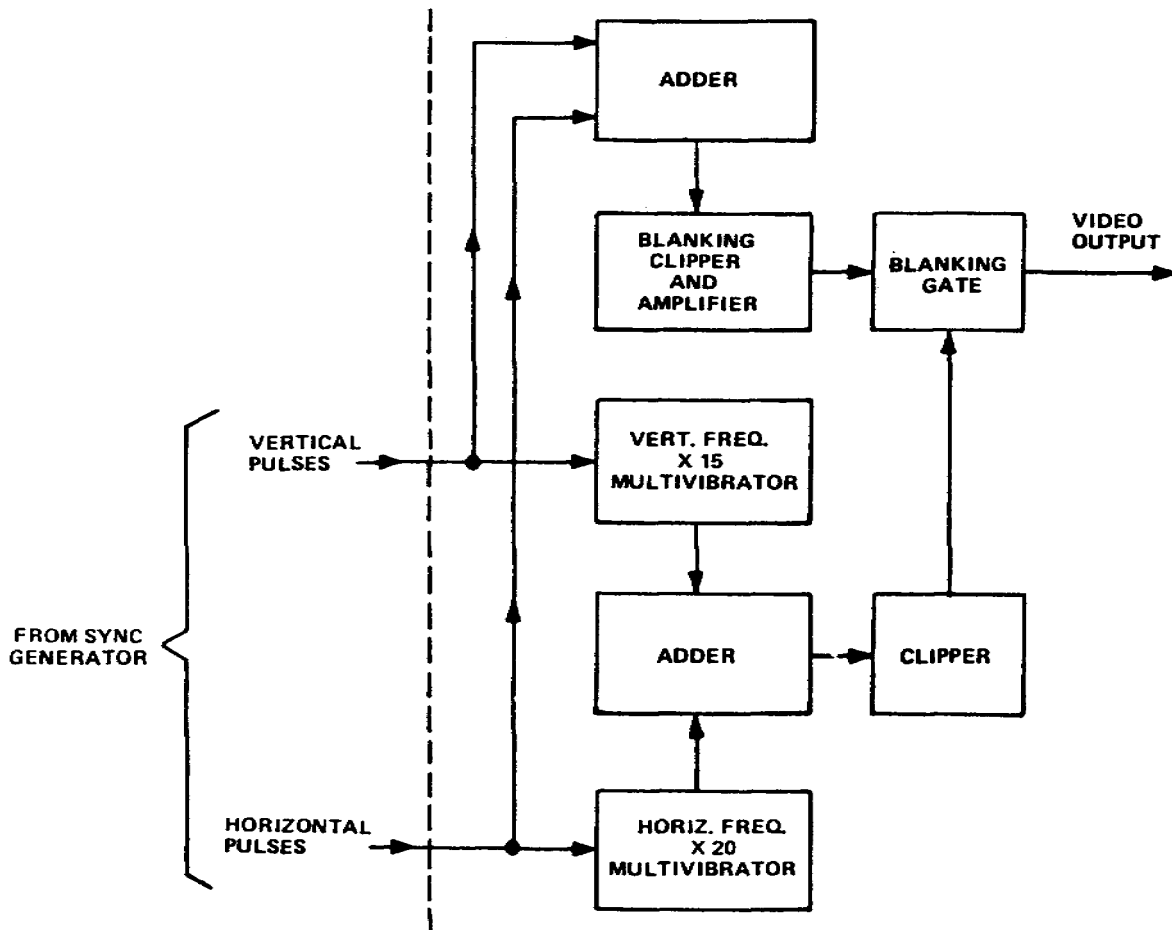


Figure 3-22. Grating generator, block diagram

b. To prevent lines from appearing during retrace, the horizontal and vertical retrace pulses are combined, as shown in Figure 3-22. When added, they form a blanking pulse, and this pulse is applied to the blanking gate circuit. An output signal is produced only when the incoming signal is strong enough to override the level of the blanking pulse.

c. The grating pattern is comprised of 14 horizontal bars and 17 vertical bars. The bars, being evenly spaced, conform with both the aspect ratio of the television system and linearity chart, discussed later on.

d. The grating generator also produces either horizontal or vertical bars separately. By selecting the output from either the times -15 or times -20 multivibrator and applying it to the signal clipper, the generator output results in horizontal or vertical bars only.

e. By injecting the grating pattern into a receiver or monitor and checking the display uniformity, you can determine discrepancies in the deflection circuit's linearity. The linearity is adjusted properly if the vertical and horizontal bars are both uniformly spaced over the entire viewing area. The grating pattern is also useful when you adjust the linearity of a camera chain.

f. Another valuable feature of the grating pattern is apparent when you adjust the convergence of a color receiver or monitor.

3. The same generator is often used to generate the dot pattern or the grating pattern. Only the clipper bias point will determine which output is produced. If the signal clipper bias is so adjusted for an output only when horizontal and vertical pulses are added, a dot pattern results (fig 3-23). The other circuits in the dot bar generator and their operation are identical to those in the grating generator.

4. The video sweep marker generator is a convenient device for checking the frequency response of a given amplifier.

a. In a typical generator, the output of a fixed RF oscillator, operating at approximately 70 MHz, is heterodyned against a sweep frequency oscillator. The sweep oscillator is being swept at a 60-Hz rate. The 0- to 10-MHz beat frequency is then applied to the circuit or unit being tested, and the resulting output, after detection, is observed on a scope.

b. Marker notches are inserted at 1-MHz intervals for frequency calibration of the beat frequency; this is accomplished by an additional oscillator stage in the sweep generator.

c. A more accurate means of calibrating can be obtained with a sweep generator unit that uses a calibrated CW oscillator as a marker source. This type of marker source provides either variable or fixed markers over a marker source range of 100 kHz or 10 MHz.

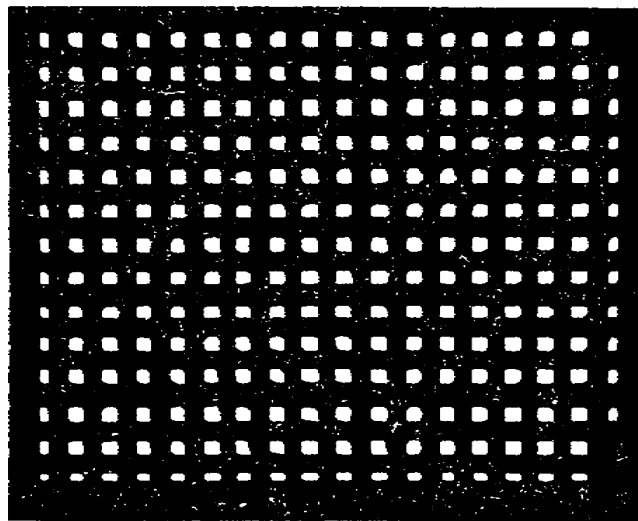


Figure 3-23. Dot test pattern

d. The most useful function of the sweep marker generator is to test and adjust the bandpass of camera preamplifiers. The equipment layout used to check a camera preamplifier with a sweep marker generator is shown in Figure 3-24. Figure 3-25 shows the output pattern of a properly tuned camera preamplifier as seen on the scope. Notice the notches inserted in the output. These markers help you observe the range of frequency response of the output pattern from the camera preamplifier. These marks are important because the frequency response curve must be flat to 8 MHz for adequate bandpass of the television video information.

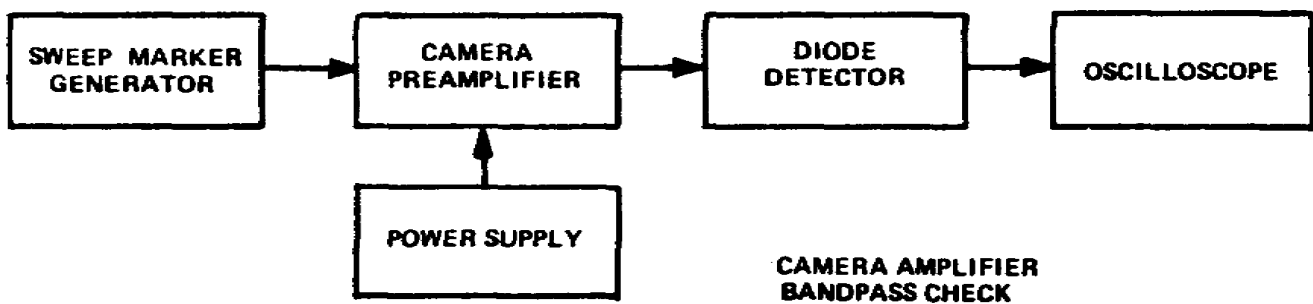
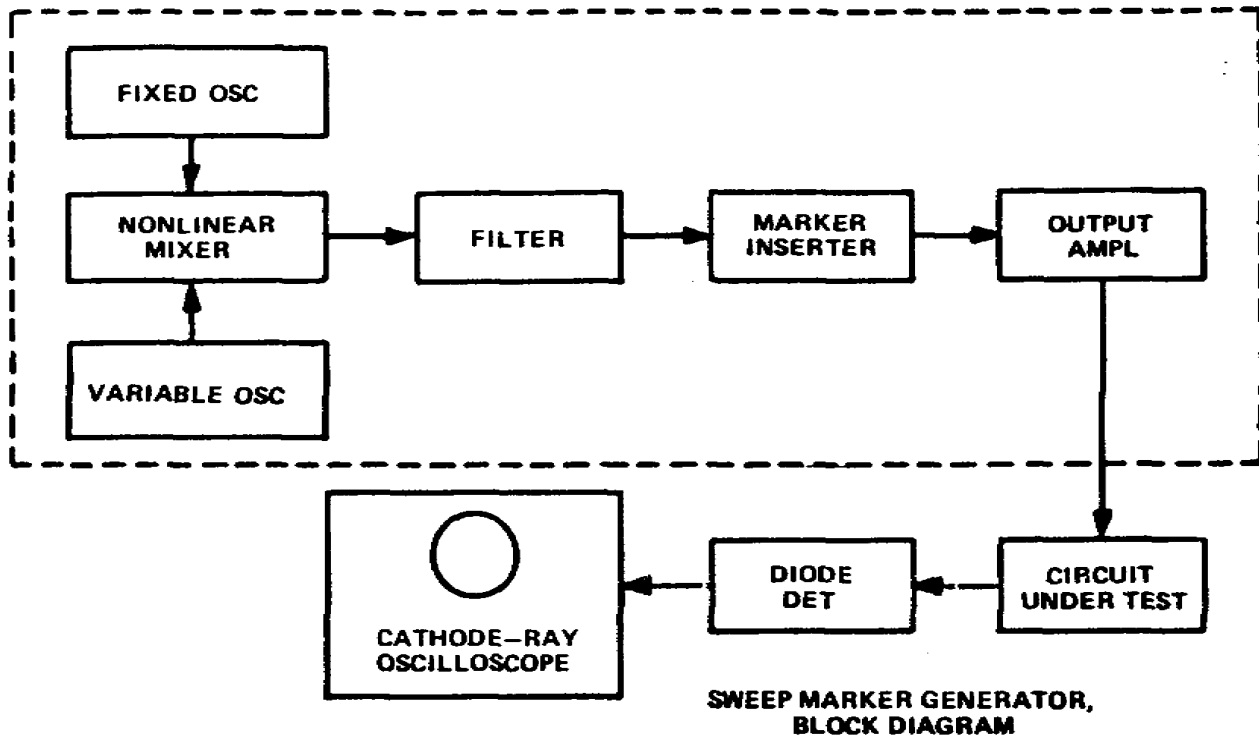


Figure 3-24. Camera amplifier bandpass check

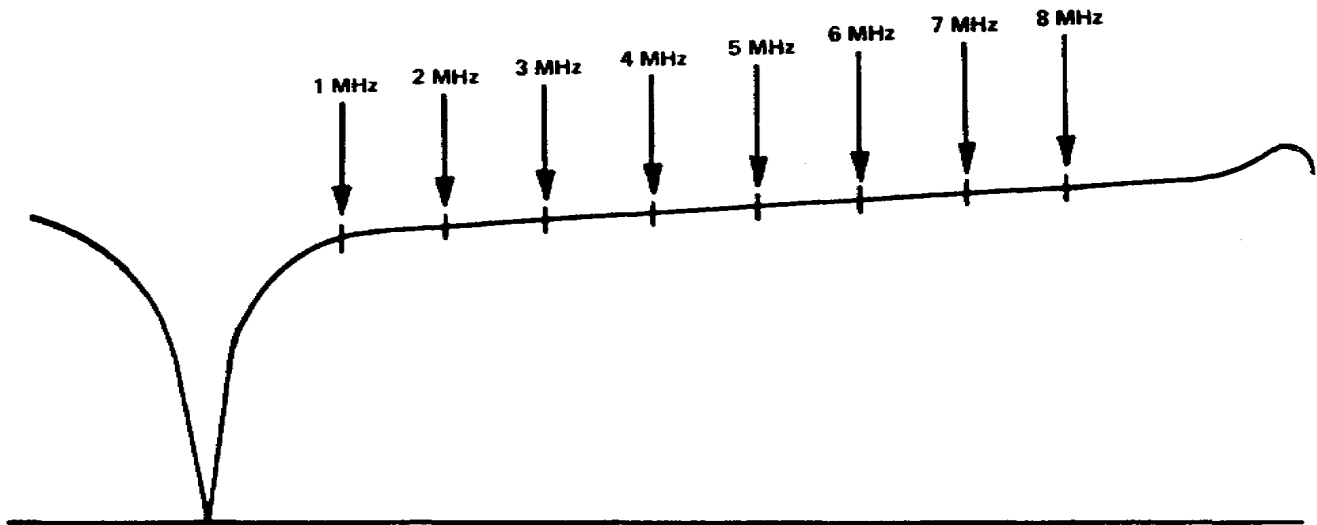


Figure 3-25. Oscilloscope presentation of camera bandpass

5. The pulse cross display is one of the most important measurements in television and it is used to determine whether the synchronizing generator is producing the proper pulse sequence, width, and amplitude.

a. The pulse cross display, along with its correct interpretation, is a convenient means of conducting operational measurements of the output pulse produced in the synchronizing generator. The pulse cross display is practical for routine operational measurements because this test requires only the use of modified video monitor. This monitor is usually available in any television station.

b. Other types of more detailed pulse analysis and adjustments may be necessary at periodic intervals. These functions require the use of specialized test equipment.

c. In normal video transmission, the horizontal and vertical synchronizing pulses occur at the end of each scanning line and each field respectively. The front porch of the horizontal synchronizing pulse occurs at the right edge of the picture, and the back porch occurs at the left edge. The vertical blanking interval occurs during vertical retrace. This information contained in the vertical blanking pulse occurs at the top and bottom of the viewing screen. Since all of the synchronizing and blanking information occurs at the edges of the picture area, its information is hidden by the picture tube mask.

d. Though detailed information may be difficult to distinguish, the general shape of the vertical blanking interval can be observed on most standard receivers and monitors by rotating the vertical-hold control until the vertical blanking bar is located in the viewing area. The horizontal synchronizing and blanking pulses at the end of each scan line are much more difficult to observe. With the modifications normally provided, the standard television monitor eliminates any definition, vertical displacement, or horizontal displacement problems. The pulse cross display can be observed instantly or monitored continually for extended periods of time.

e. The individual lines can be seen more readily if the horizontal and vertical scanning process is expanded. As a result, the pulse cross display information is seen in more detail. Expansion of the picture tube sweep circuits permits the horizontal and vertical synchronizing and blanking information to be placed in the viewing area of the picture tube.

f. Interpretation of the pulse cross display is relatively easy when you understand that the individual pulse amplitudes are indicated by light intensity. In the pulse cross display shown in Figure 3-26 the horizontal dimensions of the light intensities are relative measures of time or pulse widths. Use Figure 3-26 to identify the following pulse group patterns:

- (1) The horizontal synchronizing pulse duration (0.075H-0.98H).
- (2) The horizontal blanking pulse duration (0.165H-0.18H).
- (3) The vertical synchronizing pulse interval (0.42H-0.44H).
- (4) The vertical blanking interval (13.1H-21.0H).
- (5) E and F- the equalizing pulse intervals.
- (6) G- the six dark lines which show vertical synchronizing pulse duration.
- (7) I- the equalizing pulse duration (0.5 horiz sync width).

(8) H- the horizontal blanking and synchronizing pulses that continue to occur at the end of each horizontal video scan line until the beginning of the next vertical blanking interval.

- (9) K- the front porch of the horizontal blanking pulse ($0.02H$).
- (10) L- the back porch of the horizontal blanking pulse ($0.05H$).
- (11) M- the pulses which occur during the remaining vertical blanking time.

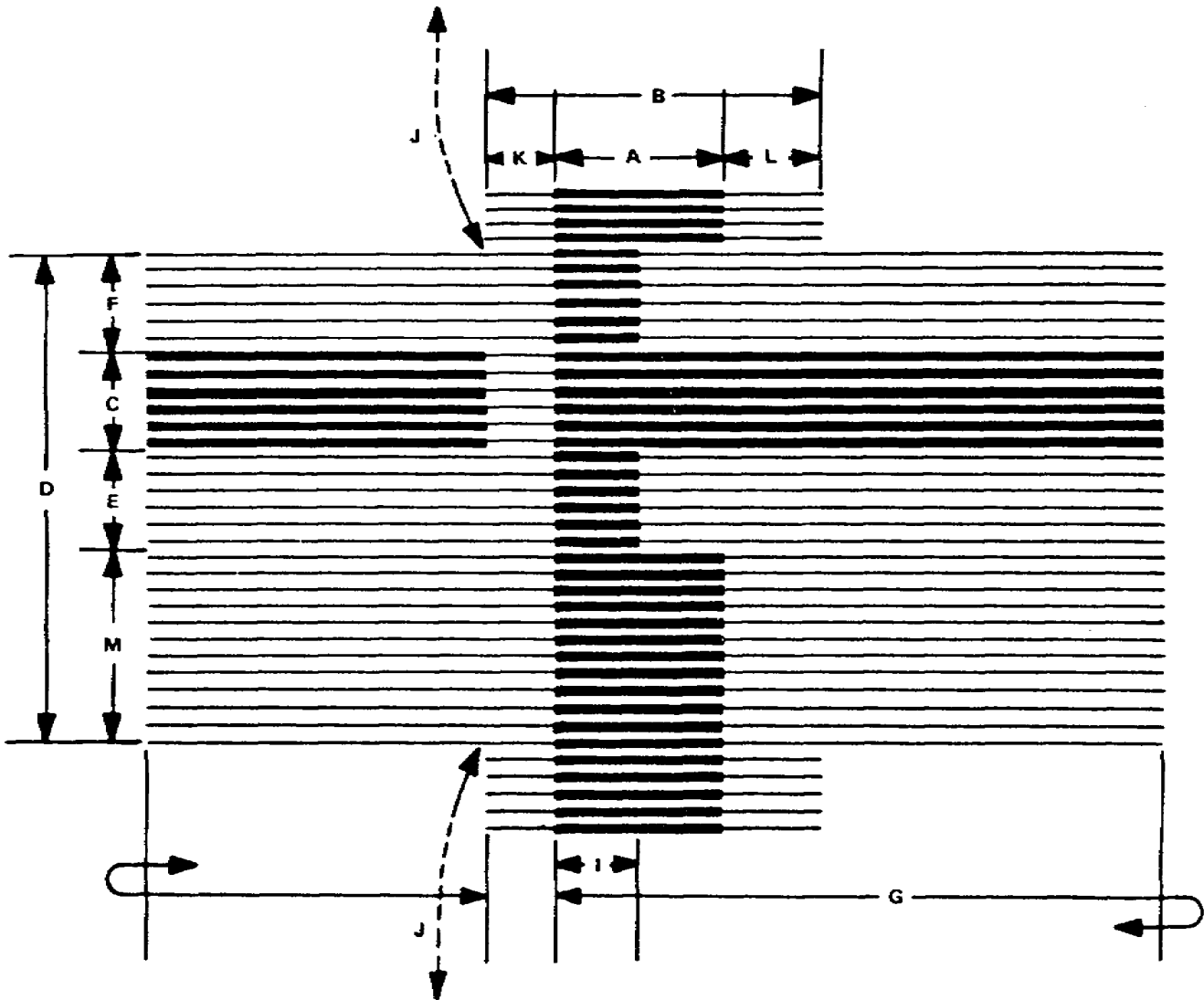


Figure 3-26. Pulse cross display

g. Each pulse width may be compared to its normal duration. After you have had some experience in using the cross display, you may devise a ruler calibrated in normal pulse widths to check the pulse cross display. Of course this ruler would apply only to a particular monitor. You can also use the pulse cross display to check the number of lines in the equalizing and vertical pulses.

6. Good resolution of a picture is indicated by sharply defined objects and no blurring or running together of closely spaced lines or points. Horizontal detail and vertical detail must be considered separately in a television picture. The maximum vertical resolution is determined by the number of active scanning lines. The horizontal resolution is determined by the maximum number of changes in voltage that can occur in each line that is scanned.

7. Standard test charts have been developed to permit more comprehensive testing of system performance.

a. The resolution chart (fig 3-27) can be used for making system quality tests for geometric distortion (linearity), aspect ratio, resolution, shading uniformity, frequency response, streaking, interlace, gray scale reproduction (contrast), brightness, and RF or other high frequency interference.

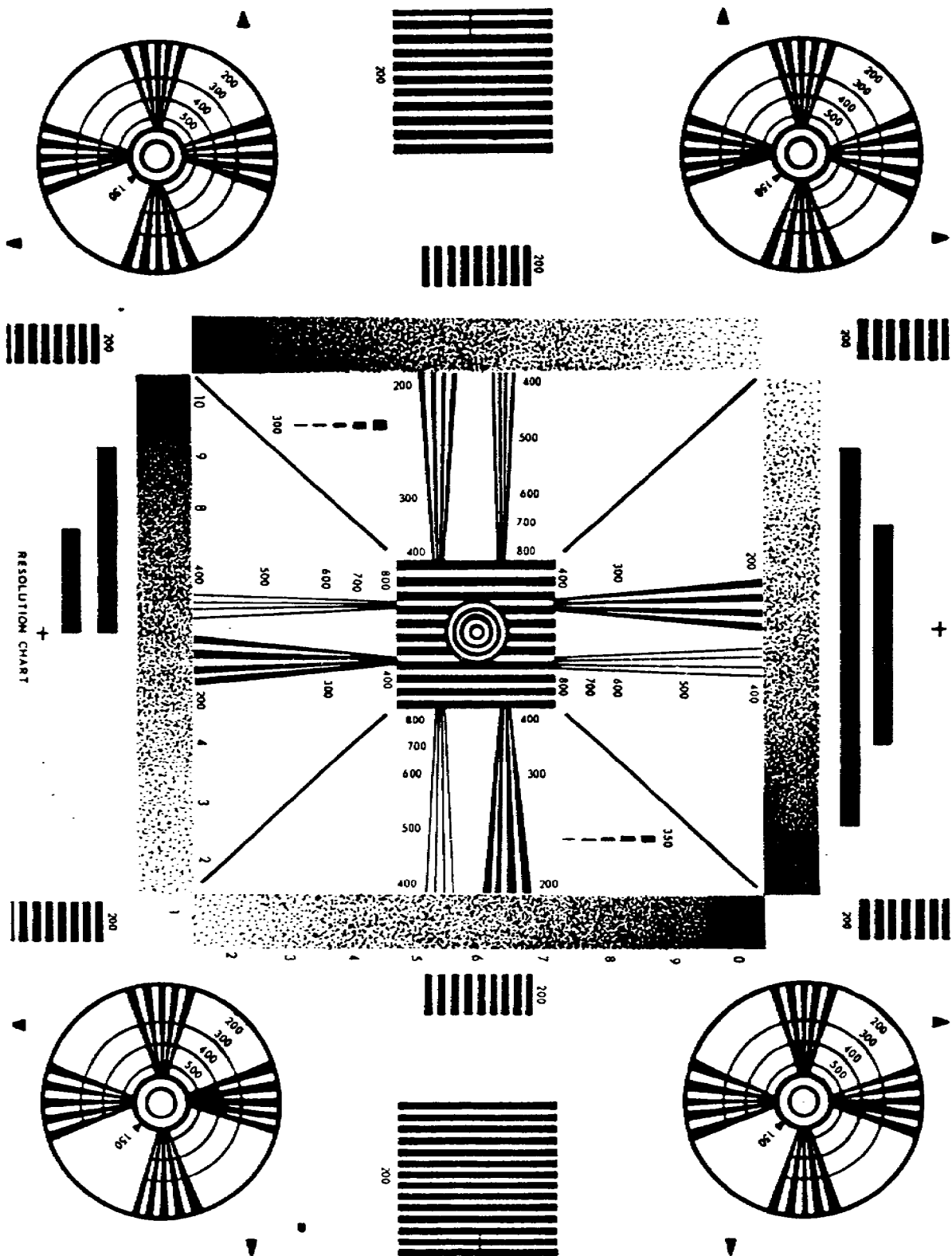


Figure 3-27. Resolution chart

b. When making a geometric distortion check, position your camera, and focus on the test chart. A picture free from distortion has linear scanning and correct aspect ratio. Check your linearity by comparing the spacing between the short horizontal bars at the top, bottom, and center of the picture.

(1) If the spacing is equal in each set of horizontal bars, vertical linearity is satisfactory. The circles located in each corner and at the center of the chart are a further check for geometric distortion.

(2) Circles that are nonlinear or distorted in shape indicate incorrect adjustment of the vertical, the horizontal, or both horizontal and vertical sweep linearity.

(3) You can check the aspect ratio by measuring the large portion of the picture formed by the four grayscale bars. If the pattern is square and the scanning is linear your aspect ratio is correct.

c. To check interlace, you observe the diagonal lines in the center square of the picture. Interlace is correct if the lines appear similar to those in Figure 3-27. Jagged diagonal lines indicate partial pairing of the lines. The diagonal lines do not appear jagged if complete line pairing occurs. Under this condition, total line pairing can be determined by the resolution wedges, since vertical resolution cannot exceed 250 lines.

d. Radio frequency or other high frequency interference is sometimes introduced into the video amplifier scanning circuits. Radio frequency interference in the horizontal sweep circuits from the power supply is indicated when the vertical lines in the test pattern become modulated and take on a ripple appearance. Radio frequency or other high frequency interference in the video amplifier is indicated by a moire pattern over the whole picture.

e. The standard linearity chart (fig 3-28) is used when camera linearity adjustments are to be made. This chart has an aspect ratio equal to that of the grating pattern. The circles occur at the same positions in the linearity chart that the lines intersect in the grating pattern. The two test patterns are superimposed on a monitor screen when you focus the video camera on the linearity chart and simultaneously transmit it and the pattern from a grating generator. A camera with linear scanning produces a picture uniformly distributed on the screen. You can adjust the linearity of the camera by adjusting the camera linearity controls so that the circles of the linearity chart coincide with the intersections on the grating pattern within an acceptable percent of tolerance.

Learning Event 6:

DESCRIBE THE PURPOSE AND TYPES OF COLOR TEST EQUIPMENT

1. Since color television requires more critical standards of operation, several types of test equipment are necessary to maintain these standards. In this section, we shall discuss the purpose and usefulness of some of the test equipment used to maintain these critical standards and the function of such equipment as the linearity checker, color-bar generator, vectorscope, and grating generator. We will also interpret the output patterns produced by this equipment.

2. The gain and phase in a color video signal must be maintained at an established level. A composite color signal consists of a luminance component on which is imposed the 3.58-MHz color subcarrier. The subcarrier is modulated so that the amplitude determines the degree of saturation of the reproduced colors, and phase relationships produce hue.

3. The typical linearity checker provides a means for measuring differential gain and phase, dynamic gain, luminance signal linearity, and luminance distortion caused by chrominance signal nonlinearity in systems under test. The linearity test signals are useful for measuring nonlinear distortions such as differential gain, differential phase, and line-time nonlinearity (fig 3-28).

a. Differential gain is, basically, the change in the chrominance signal amplitude as the amplitude of the luminance signal changes between black and white.

b. Differential phase is the change in phase of the chrominance signal amplitude changes between black and white.

c. Differential phase and gain measurements can be made using a vectorscope.

d. Line-time nonlinearity signal is the difference in gain from the black level to the white level of a video signal. Monochrome signals and the luminance portion of color signals are affected by this distortion.

e. The 5-step linearity signal is commonly used to measure the amount of line-time nonlinearity. The output of the circuit being measured is differentiated and fed to a scope or waveform monitor. An external differentiating network may be used.

f. During the active portion of each field the flat field signal has a luminance level which is variable from 0 to 100 IRE units in 10 IRE increments. It is used to test clamper amplifiers and systems in general for APL (average picture level) dependent distortions.

4. There are two basic models of the color bar generator. The first is a compact, lightweight generator instrument used primarily where portability is desired. The second mounts in a standard 19-inch rack, and is used primarily in the television broadcast system. In both units the operation is about the same, and the desired outputs serve the same basic purpose.

a. With its variety of test signals, the color bar generator is an excellent tool for use in analyzing television system defects or anomalies. The following paragraphs list the color bar generator test signals and their general applications.

(1) The standard full field color bar signal consists of eight equal intervals arranged in descending order of luminance as follows: gray, yellow, cyan, green, magenta, red, blue, and black (fig 3-29). This signal is used for checking luminance, hue, and saturation parameters of the television system.

(2) Split field Y reference signal provides standard color bars in the first part of the test pattern display and luminance-only shades of gray to black in the second part (fig 3-30). The split field Y reference signal is especially useful for checking color balance and tracking of color picture monitors.

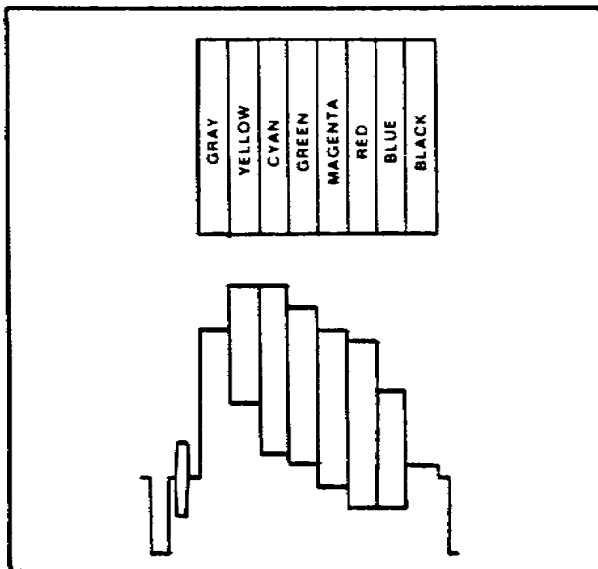


Figure 3-29. Full field color bars

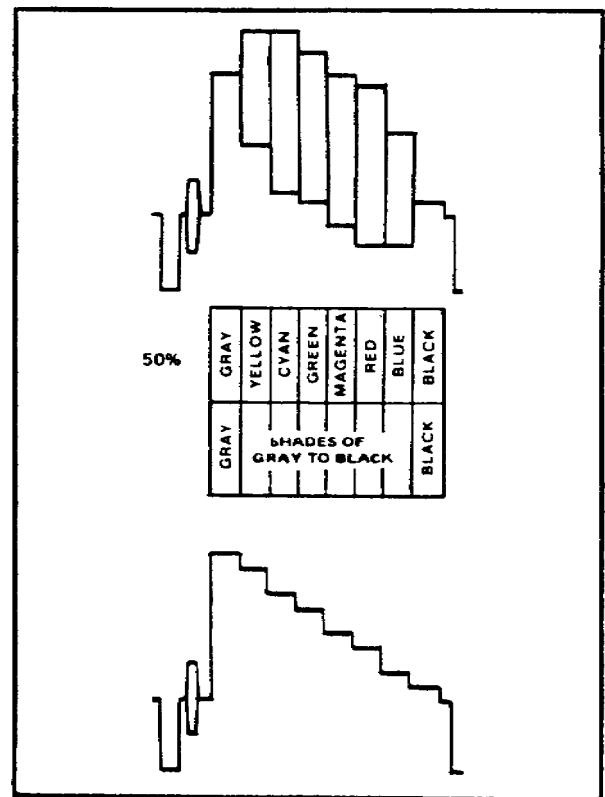


Figure 3-30. Split field Y Reference

(3) Split field red signal includes the standard color bars in the first part, while the second part contains the red color-bar signal only (fig 3-31). Video system noise, VTR head banding, and red phase are readily seen by using the solid red split field signal. Split field reverse signal provides standard color bars in the first part and color bars in the reverse order during the second part (fig 3-32). Dynamic range and color tracking of video monitors can be checked with this test signal pattern.

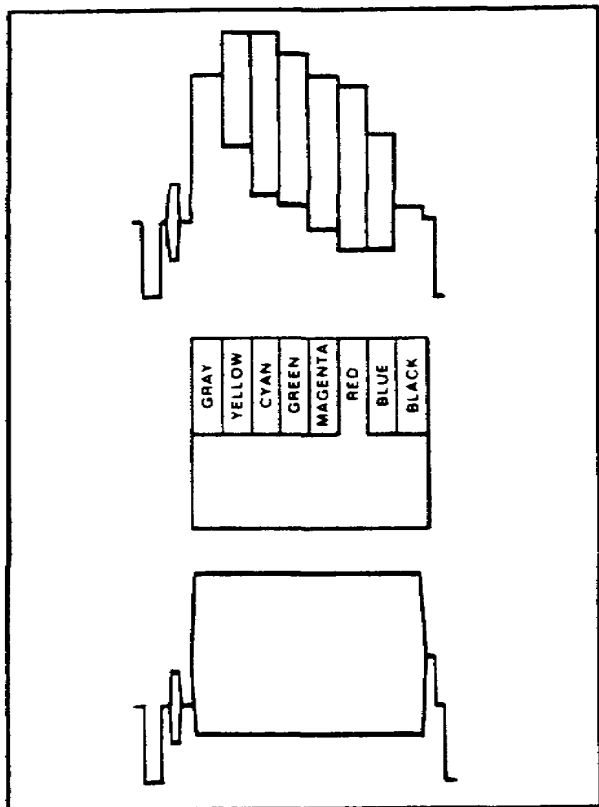


Figure 3-31. Split field red

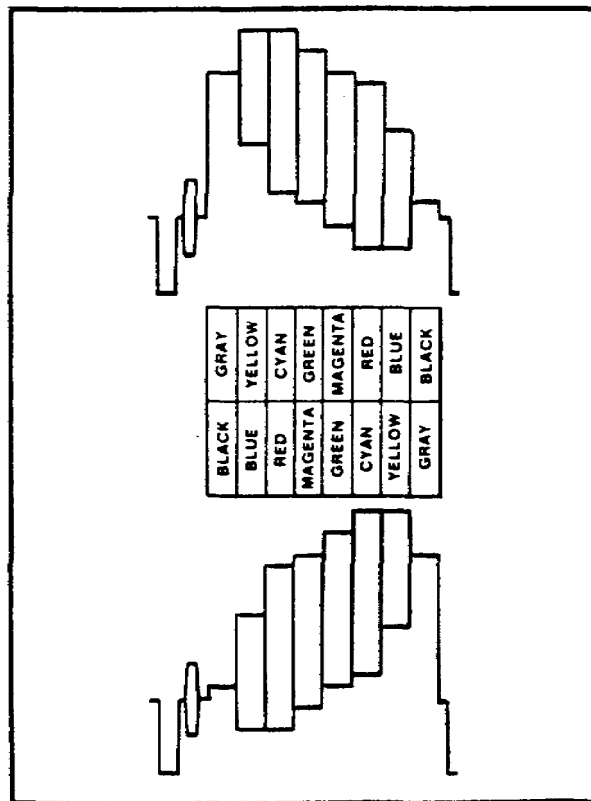


Figure 3-32. Split field reverse

(4) EIA standard color bar signals comply with RETMA ENGINEERING COMMITTEE TR-4 on television transmitters, "EIA Standard for Encoded Color Bar Signals." It is used for adjustment of color monitors and encoders and for making rapid checks of color television transmission systems.

(5) The standard EIA signal consists of two major parts. Three-fourths of the active scanning lines in each field are divided into seven equal intervals arranged in descending order of luminance as follows: gray, yellow, cyan, green, magenta, red, and blue (fig 3-33a). The remaining one-fourth of active scanning lines is used for the transmission of special test information consisting of a subcarrier signal envelope with a phase corresponding to a reference white pulse, a subcarrier signal envelope with a phase corresponding to -1, and a reference black interval (fig 3-33b).

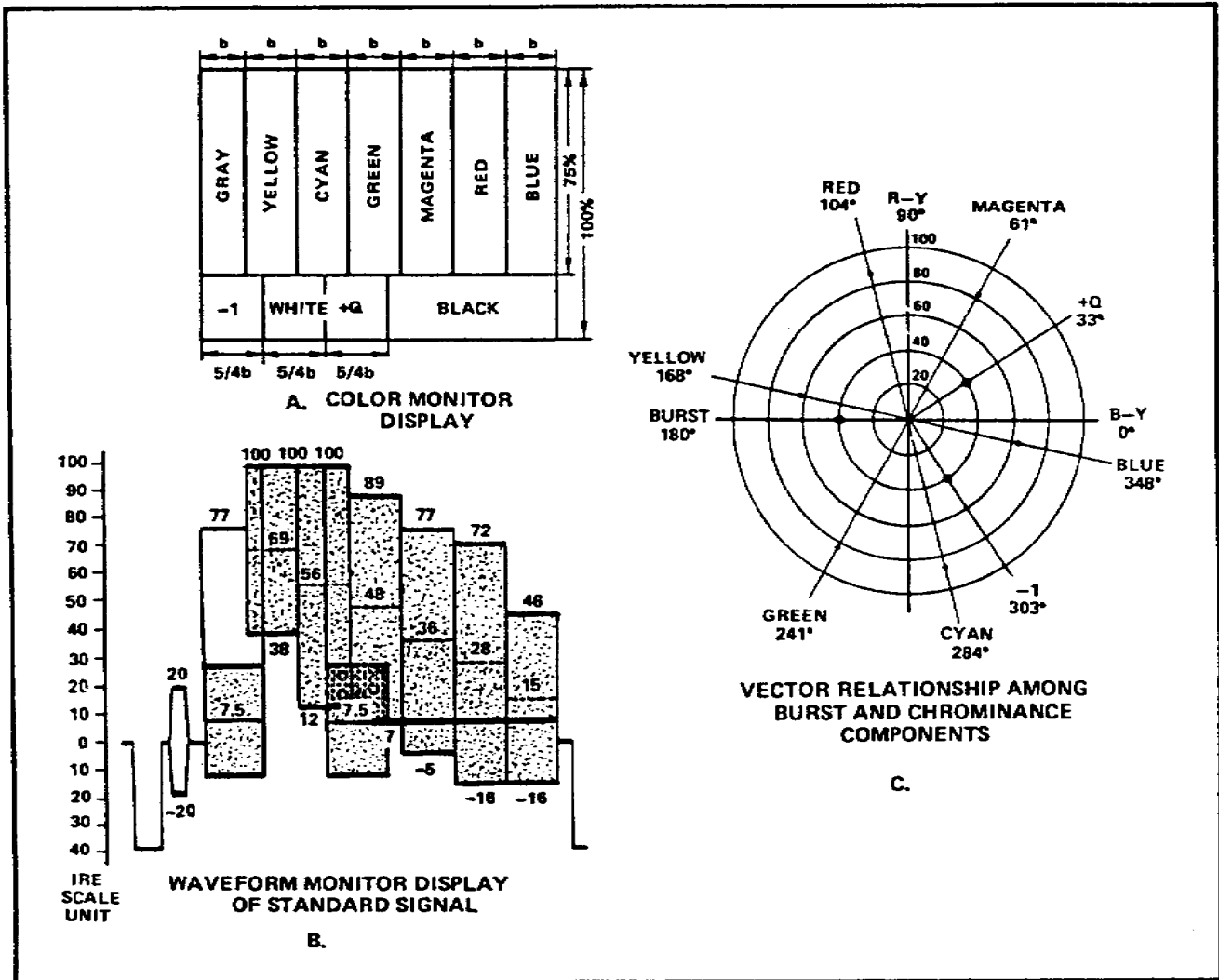


Figure 3-33a, b, and c. Picture monitor, waveform monitor, and vectorscope displays of the standard EIA test pattern signal

(6) Figure 3-33b shows the color bar signal as seen on a waveform monitor triggered at horizontal rate. Vector relationships of the various burst and chrominance components are shown in Figure 3-33a.

(7) The standard color bar signal may be used for making phase and gain adjustments in color monitors, or for verifying overall accuracy of the decoding function. An experienced operator can learn to judge the accuracy of monitor adjustments by direct observation of color bar pattern on the display device. For more objective measurements, the waveforms resulting from the decoding of the standard color bar signal can be used.

(8) The accuracy of matrix and phase adjustments in encoders may be readily checked by comparison of the standard color bar signal with the output of such a device, when the standard signal is applied to the encoder inputs. The signal embodies several convenient references and relationships that facilitate its use. The relative amplitudes of all signal components can be checked by direct observation of the complete waveform on a television waveform monitor. A waveform monitor display should exhibit the following relationships (fig 3-33b).

(a) The positive peak levels of yellow and cyan bars are nominally equal to reference white level.

(b) The negative peak level of the green bar is nominally equal to reference black level.

(c) The negative peak levels of the red and blue bars are nominally equal.

(9) The relative phase and amplitudes of the chrominance portion of the signal are generally checked by observation on a vectorscope (fig 3-33c). The quadrature phase relationship between the I and Q components of the encoder signal can be conveniently checked by observation of the -I and Q signal axis.

(10) When making rapid checks of color television transmission systems, observation of the standard color bar signal waveform at the output of a transmission system can yield a number of clues with respect to the quality of the transmission system. The color bar signal is useful for checking transmission level, relative frequency response, and the presence of differential gain and phase.

5. One of the newer test equipment items developed for close inspection of amplitudes and phase of subcarrier signals is the vector display scope, commonly called the vectorscope. A block diagram of a typical vectorscope is shown in Figure 3-34. Generally this equipment uses a pair of quadrature demodulators. The demodulator outputs are applied to the X and Y plates of a DC scope. Most designs incorporate a burst-control oscillator to generate a reference subcarrier from the synchronizing burst of the signal under test.

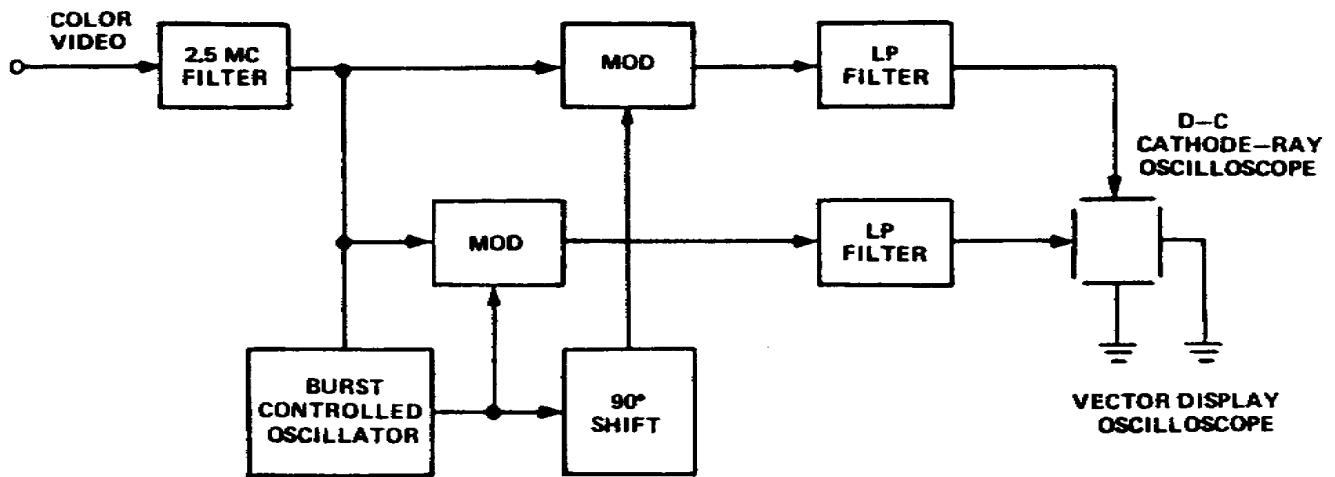


Figure 3-34. Block diagram of a typical vector display oscilloscope

a. When used with color bar signals, the vectorscope produces a pattern of lines and dots which indicate the vectors corresponding to the various colors. The pattern appears as bright dots linked by relatively faint lines. As illustrated in Figure 3-35, boxes may be drawn on the oscilloscope face to indicate phase and amplitude tolerances.

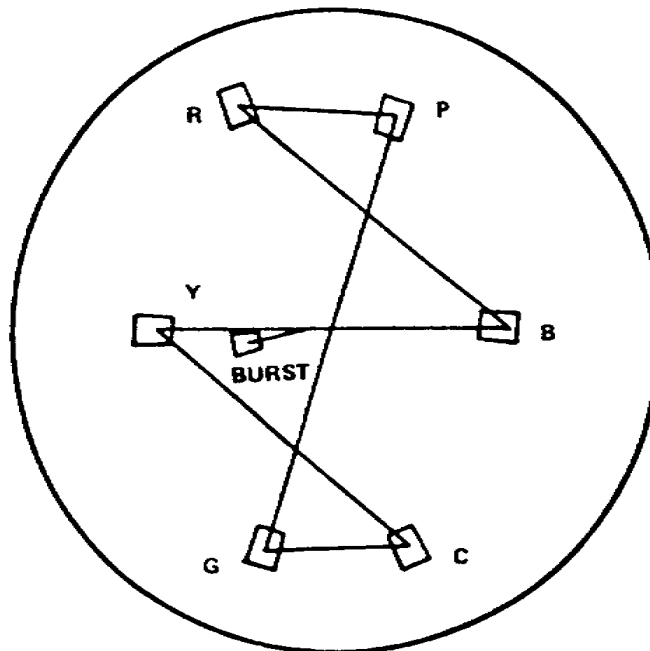


Figure 3-35. Typical vector display oscilloscope pattern

b. The vectorscope must be used for making certain measurements on a color television system, particularly differential phase measurements. It is also an excellent tool for evaluating both luminance and chrominance channels of most video equipment.

6. The purpose and outstanding feature of the grating generator as applied to black and white television were discussed earlier in this lesson. Now we will examine its operation and functions as they pertain to color operation.

a. The cross-hatch pattern generated by the grating generator is extremely useful when making adjustments in the convergence of a color picture tube.

b. When viewing the picture area of the receiver, with the grating pattern applied, look for proper alignment of the vertical and horizontal bars. The convergence is properly adjusted if the bars are placed over one another and no color fringing is apparent.

Lesson 3
PRACTICE EXERCISE

1. What are the two voltage values of a video signal applied to a waveform monitor?
 - a. 0.7 volts and 0.3 volts
 - b. 0.714 volts and 0.286 volts
 - c. 0.8 volts and 0.2 volts
 - d. 0.814 volts and 0.186 volts
2. What is the output range of a radio frequency generator?
 - a. 10 MHz to 10 GHz
 - b. 20 KHz to 10 MHz
 - c. 10 KHz to 10 GHz
 - d. 20 KHz to 20 GHz
3. What is the overall frequency change called?
 - a. Frequency - modulation
 - b. Frequency swing
 - c. Attenuator
 - d. Waveform
4. What must happen to the input signal before you can make a frequency measurement reading?
 - a. Applied to the signal shaper
 - b. Sent to horizontal deflection
 - c. Sent to the vertical deflection
 - d. Sent to the time base
5. Why is it discouraged to use a multimeter to test transistors or diodes?
 - a. Accuracy not close enough
 - b. Frequency too low
 - c. Frequency too high
 - d. Meter can damage components
6. For what purpose is the video sweep marker generator used?
 - a. Frequency response of a given amplifier
 - b. Best picture
 - c. To set picture registration
 - d. Set gray scale reproduction

7. What test signal on the color bar generator is best to use, when checking color balance and tracking of color picture monitor?
 - a. Standard full field color bars
 - b. Split field red signal
 - c. Split field Y reference signal
 - d. Grating generator
8. What test instrument is used to make differential phase measurements of a color TV system?
 - a. Oscilloscope
 - b. Color bar generator
 - c. Video sweep marker generator
 - d. Vector scope

ANSWERS TO PRACTICE EXERCISES

Lesson 1

1. B
2. B
3. D
4. B
5. D
6. B
7. A
8. C
9. C
10. D

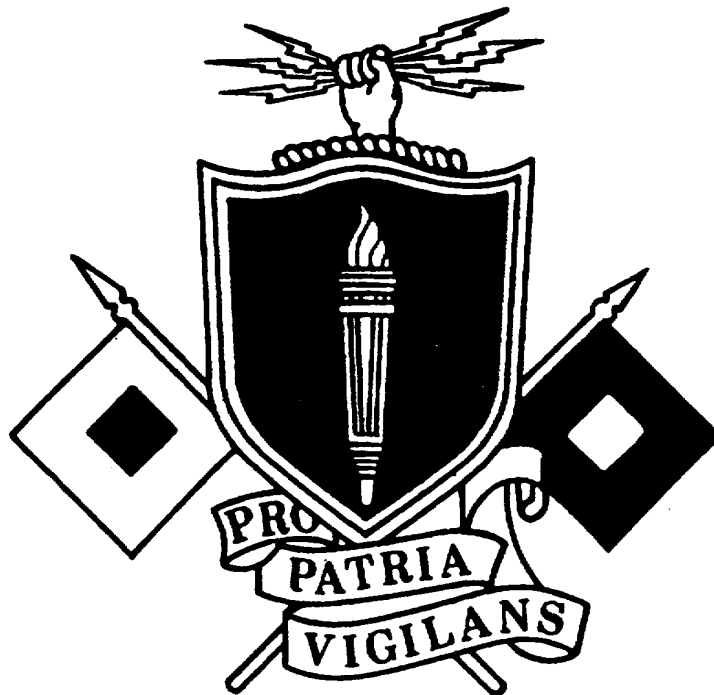
Lesson 2

1. A
2. B
3. C
4. B
5. D

Lesson 3

1. B
2. C
3. B
4. A
5. D
6. A
7. C
8. D

TELEVISION AND AUDIO SYSTEMS



THE ARMY INSTITUTE FOR PROFESSIONAL DEVELOPMENT
ARMY CORRESPONDENCE COURSE PROGRAM

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THRU
GROWTH

U.S. ARMY RADIO/TELEVISION SYSTEMS SPECIALIST
MOS 26T SKILL LEVEL 1

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TELEVISION AUDIO SYSTEMS
(Developmental Date: 30 Sep 86)

SUBCOURSE NO. SS0603-6

U.S. ARMY SIGNAL SCHOOL
Fort Gordon, Georgia

Five Credit Hours

GENERAL

The Television Audio Systems subcourse is designed to teach the knowledge and skills for performing tasks related to operation and maintenance of the audio systems found in a typical television studio. Information is provided on several tasks which are performed at increasing levels of difficulty at Skill Levels 1, 2, and 3. Several of the tasks are shared with the MOS 84F, Audio/Television Specialist. However, the shared tasks do not appear on the Soldier's Manual, STP 11-26T13-SM-T6, dated September 1985, but they are published in the Soldier's Manual, STP 11-84F13-SM-TG dated September 1985. As a reminder, tasks with the prefix 113-575-XXXX are found in the MOS 26T manual and tasks with the prefix 113-577-XXXX are printed in the MOS 84F manual. The subcourse is presented in five lessons. Each lesson corresponding to a terminal objective as indicated below.

Lesson 1: DESCRIBE AND IDENTIFY THE AUDIO CONSOLE AND MAINTENANCE PROCEDURES REQUIRED TO TROUBLESHOOT AND REPAIR THE EQUIPMENT

TASK: Describe the functions of audio control consoles, and identify the equipment and maintenance procedures for troubleshooting and repair.

CONDITIONS: Given information and illustrations about terms relating to audio control consoles and troubleshooting and repair maintenance procedures.

STANDARDS: Demonstrate competency of the task skills and knowledges by correctly responding to 80 percent of the multiple-choice test items covering functions terminology and identification of audio control consoles and maintenance procedures for troubleshooting and repair.

(This objective supports Soldiers Manual Task 113-577-4001, Operate Turntable; 113-577-4006, Operate Studio Audio Console; 113-575-9002, Interpret Schematic Diagrams, Block Diagrams or Component Location Diagrams; and 113-577-9009, Perform Operator's Maintenance of a Turntable.)

Lesson 2: DESCRIBE AND IDENTIFY THE FOUR BASIC TYPES OF MICROPHONES AND THE MAINTENANCE PROCEDURES REQUIRED FOR PROPER OPERATION

TASK: Describe and identify the four basic types of microphones and the maintenance procedures required for proper operation.

CONDITIONS: Given information and illustrations about terms relating to the four basic types of microphones and the maintenance procedures required for proper operation.

STANDARDS: Demonstrate competency of the task skills and knowledge by correctly responding to 80% of the multiple-choice test items covering terms relating to the four basic types of microphones and maintenance procedures required for proper operation.

(This objective supports these Soldier's Manual Tasks 113-577-1039, Select a Microphone; 113-577-1043, Set Up Microphones for Multiple Music Instrument Presentation; 113-577-1053, Establish Audio Requirements for Audio or Television Productions; 113-577-9003, Perform Operator's Maintenance of Microphones, Microphone Cables and Connectors; and 113-575-9002, Interpret Schematic Diagrams, Block Diagrams or Component Location Diagrams.)

Lesson 3: DESCRIBE AND IDENTIFY THE THREE MAIN FUNCTIONS AND THE THREE MAIN SECTIONS OF AUDIO TAPE RECORDERS AND THE MAINTENANCE PROCEDURES REQUIRED FOR PROPER OPERATION

TASK: Describe and identify the three main functions and the three main sections of audio tape recorders and the maintenance procedures required for proper operation.

CONDITION: Given information and illustrations about terms relating to the three main functions and three sections of an audio type recorder and maintenance procedures required for proper operation.

STANDARD: Demonstrate competency of the basic skills and knowledge by correctly responding to 80% of the multiple-choice test items relating to terms about the three main functions and three sections of an audio tape recorder and the maintenance procedures required for proper operation.

(This objective supports the Soldier's Manual Task 113-575-0042, Troubleshoot a Reel-to-Reel Audio Tape Recorder/Reproducer.)

Lesson 4: DESCRIBE AND IDENTIFY THE PRINCIPLES OF RADIO AND LINE TRANSMISSION, AM/FM CHARACTERISTICS, STEREO PHASE PROCEDURES AND THE ELECTRONIC REQUIREMENTS OF RADIO RECEIVERS

TASK: Describe and identify the principles of radio and line transmission, characteristics of AM/FM, stereo phase problems, and the electronic requirements of radio receivers.

CONDITIONS: Given information and illustrations relative to principles of radio line transmissions, AM/FM characteristics, stereo phase problems and electronic requirements of radio receivers.

STANDARDS: Demonstrate competency of the task skills and knowledge by correctly responding to 80% of the multiple-choice test items covering principles of radio line transmission, AM/FM characteristics. Stereo phase problems and electronic requirements of radio receivers.

(This lesson supports these Soldier's Manual Tasks 113-575-4012, Replace RF Transmission Lines Between Antenna and RF Modulation, and 113-575-9002, Interpret Schematic Diagrams, Block Diagrams, or Component Location Diagrams.)

Lesson 5: DESCRIBE AND IDENTIFY COMPONENTS OF RECORDING SYSTEMS, AUDIO SPEAKERS, CABLE AND CORDS, AND USES OF BASIC MEASURING EQUIPMENT

TASK: Describe and identify components of recording systems, audio speakers, cable and cords, and uses of basic measuring equipment.

CONDITIONS: Given information and illustrations related to recording system components and audio speakers, cable and cords, and uses of basic measuring equipment.

STANDARDS: Demonstrate competency of the task skills and knowledge by correctly responding to 80% of the multiple-choice test items covering identification of components of recording systems, audio speaker, cable and cords, and uses of basic measuring equipment.

(This objective supports Soldier's Manual Tasks 113-575-3033, Perform Measurement of the Visual and Audio Transmitter Carrier Frequency, and 113-577-9003, Perform Operator's Maintenance of Microphones, Microphone Cables and Connectors.)

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Whenever pronouns or other references denoting gender appear in this document, they are written to refer to either male or female unless otherwise indicated.

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INTRODUCTION TO TELEVISION AUDIO SYSTEMS

A radio/television systems specialist requires knowledge and skills in operation and maintenance of audio systems found in typical television studios which include production broadcast or Educational Television (ETV) facilities. It is important to understand the principles behind each piece of audio equipment and to be able to describe and identify the many items of audio equipment the 26T uses and maintains in a radio/TV operation.

LESSON 1

DESCRIBE AND IDENTIFY THE AUDIO CONSOLE AND MAINTENANCE PROCEDURES REQUIRED TO TROUBLESHOOT AND REPAIR THE EQUIPMENT

TASK

Describe the functions of audio control consoles, and identify the equipment and maintenance procedures for troubleshooting and repair.

CONDITIONS

Given information and illustrations about terms relating to audio control consoles and troubleshooting and repair maintenance procedures.

STANDARDS

Demonstrate competency of the task skills and knowledges by correctly responding to 80% of the multiple-choice test covering functions terminology and identification of audio control consoles and maintenance procedures for troubleshooting and repair.

REFERENCES

None

Learning Event 1:

DESCRIBE AND IDENTIFY THE FUNCTIONS OF AUDIO AMPLIFIERS, SWITCHES, MIXERS, MONITORS, AND SIGNAL PATHS

1. Audio console. The audio console is the nerve center for the audio portion of TV production, just as the sync generator is the heart of the video equipment. However, the basic functions of these two are vastly different. Whereas the sync generator provides a standard, the audio console does much more. In this section, we shall see just how much more it does as we study the functions, signal paths, mixing action, and monitoring facilities, which are all a part of the audio console. An audio console is designed to handle audio signals from microphones, tape recorders, special effects consoles, and other sources as necessary for sound production.

2. Functions. There are many functions which could be listed; however, for our purposes here, we will consider those functions performed by amplifiers, switches, mixers, and monitors. Of course, for the console to carry out its functions, there must be certain auxiliary equipment attached, as indicated by various input and output terminations in Figure 1-1. Most consoles contain their own power supply.

a. You know that audio frequencies range from about 15Hz to 20KHz. Television (TV) equipments that amplify signals for sound reproduction use amplifiers designed for this low-frequency range. It is the task of such amplifiers to strengthen the audio signal and reproduce it faithfully. The dominant requirements are, therefore, gain and fidelity. The three types of audio amplifiers used in the audio console are the preamplifier, driver, and power amplifier. The following is a list of their functions.

b. Audio preamplifiers are designed to increase the gain of low-level signals from transducers such as microphones and recorder-reproducer heads. They are operated Class A at power levels in the order of micro-microwatts or microwatts. Since the signals are so very small, special attention must be given to the noise factor, input impedance, and coupling.

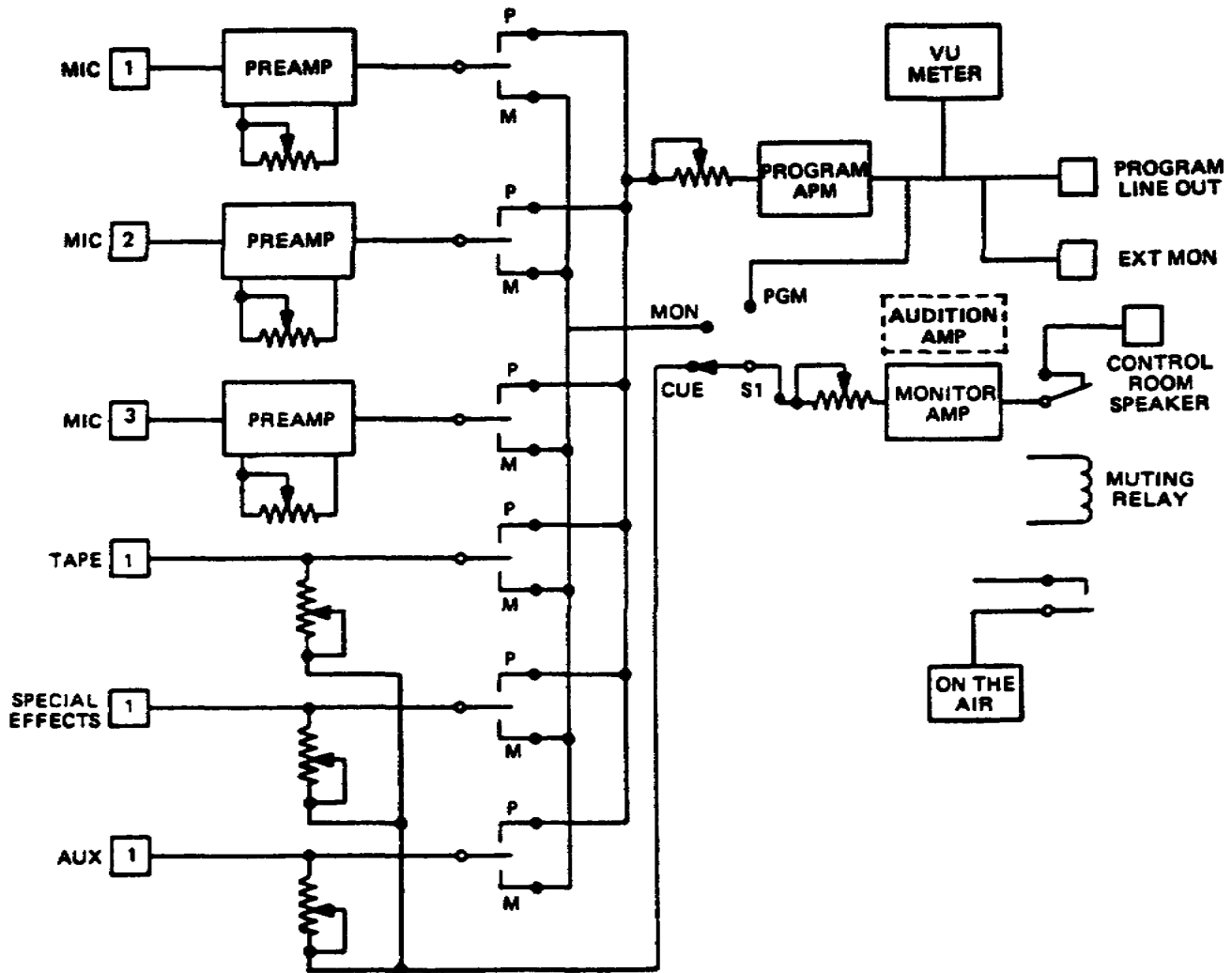


Figure 1-1. Block diagram of a basic audio console

c. Amplifier stages designed primarily to raise the power level of the signal-are known as drivers and power amplifiers. Driver stages usually develop power in the order of milliwatts. Power amplifiers develop watts or hundreds of milliwatts of power. This distinction based on power levels is approximate at best. The power levels of drivers and power amplifiers depend on the equipment in which they are used. A driver amplifier, as its name implies, is used to drive a succeeding stage. Thus, the driver states delivers power to another driver stage or to a power amplifier. The power amplifier builds the signal power to the necessary level to operate a device such as a speaker.

d. When microphones are discussed, you will find that the dynamic microphone is determined to have the best fidelity. However, this microphone requires a preamplifier (preamp) due to its low output voltage. Therefore, the audio console has built-in preamplifiers, which gives a sufficient signal level to drive the program and monitor amplifiers. The preamps used in this unit, as seen in Figure 1-1 have external gain controls, which are located on the front of the console along with the other input controls. These controls are actually labeled mixer. The program amplifier is also a multistage amplifier which falls in the class of a driver. This amplifier also has a gain control, which is the master control that enables the operator to adjust for the correct output level, as indicated on the VU meter. Microphones will be discussed in detail in Lesson 2.

e. The control consoles are equipped with a number of multiple contact double throw lever switches. These switches are used to perform a number of functions, some single and some multiple functions.

(1) The tape input is an example of a single function. When the switch is in either the program or monitor position, the only function is applying the tape signal to the respective amplifier. The microphone selector switches use an additional set of contacts to control the muting relay which removes the monitor speaker from the circuit. Also, the muting relay controls the on-the-air alert light.

(2) There are other switches, such as S1 which are used to select the various circuits to be monitored. There is a switch, not shown in Figure 1-1 which enables the operator to select what is wished to be monitored on the phone jack. It should be mentioned that Figure 1-1 is a block diagram of a simple console; the more elaborate control consoles have many more switches.

f. The mixers consist primarily of the variable attenuators which are incorporated with the various amplifiers. In the amplifier circuits, the mixers are nothing more than gain controls. In the tape input, auxiliary input, and special effects, they serve as gain controls for the cue circuit. or those who have not actually worked on a control console, there might be some question as to why they are termed "mixers." This can best be explained by saying that as one input signal is used to replace another, one signal is increased as the other is decreased. In this instance, the operator increases the gain on one input mixer control while decreasing the gain for the other. If two inputs are to be used at the same time, the two mixer controls are set

to give the proper balance or desired mixing of the signals coming into the console. They are also set to give the correct overall amount of output signal.

g. The console incorporates a VU meter, which is used to monitor the signal level out to the line and the external monitor. When you are using the mixer controls, the VU meter is very important for adjusting and maintaining the correct level out (fig 1-1).

(1) The headset monitor (not shown on the block diagram fig 1-1) is also used for adjusting balance; however, since the operator's sense of volume is not good enough to set the level out, the VU meter is needed.

(2) The various speaker connections also serve as monitors in the control room at remote locations and other miscellaneous installations. Like a headset, the speaker serves to give you an idea of the output level, but is not exact enough when adjusting for the correct level while monitoring tapes or live programs. We should mention that some of the control consoles have selective scale adjustments for the meters, whereas others require modification for the pad circuit to change the meter scale.

h. Again looking at Figure 1-1, you see there are a number of possible signal paths. In this diagram (fig 1-1), there are a total of six inputs and three outputs. Remember, this is a simple setup. There are many more inputs and outputs in the more elaborate setups that have talkback circuits incorporated for classroom work.

(1) In the diagram illustrated (fig 1-1), start with microphone No. 1, trace a signal path through the preamplifier, level selector switch (program P position), program amplifier, VU meter, line out pad or extension monitor pad to the output. If switch S1 was in the PGM position, the output from the program amplifier would also be coupled to the monitor amplifier and the control room speaker terminal.

(2) As shown in the diagram (fig 1-1), all of the input signals can be connected to the program amplifier and monitor amplifier at one time. Let us suppose you have a studio program that requires the use of all the microphones and also requires specific sound effects which are recorded on tape. In this case, you must use the cue position; a signal is fed to the monitor amplifier. At the right moment, you use the selector switch to send the signal to the program line. Thus the tape input is mixed into and becomes part of the program.

Learning Event 2:

DESCRIBE AND IDENTIFY THE PERFORMANCE ADJUSTMENTS REQUIRED TO PERFORM OPERATOR'S MAINTENANCE OF AN AUDIO CONSOLE

1. Performance adjustments. Three types of adjustments of primary concern are (1) elimination of hum in the circuits, (2) prevention of erratic action from switch contacts, and (3) accurate control of output.

a. We need to mention at this point that hum is usually not a problem with a transistorized control console. However, the tube type consoles with AC filaments are subject to hum distortion. To eliminate this problem, you need to adjust the hum balance control, which is found in the power supply section.

(1) To make the hum adjustment, set all input selector switches to the center or off position. If there is an input that cannot be turned off, it should be terminated in a resistance, since it may pick up hum in a manner similar to an antenna.

(2) After all input circuits are either off or terminated, turn the master gain all the way clockwise. If the preamplifier is in the circuit following the selector switch, turn the preamplifier gain or mixer to minimum, fully counterclockwise. Now you are ready to adjust the hum control for minimum hum in the output of the program line.

b. The switch contacts can be a source of much trouble due to their position in the line relative to the amplifiers.

(1) When a switch spring becomes bent, it does not close properly; therefore, you must adjust it for good contact.

(2) If a contact becomes burned or otherwise pitted, erratic action may result. Switch contacts should be checked carefully and adjusted or aligned for smooth action. This is true for both rotary and lever action switches.

c. When setting up the output level, the important thing to remember is that your accuracy can be no better than the VU meter reading. In other words, you cannot properly set the output unless your VU meter is accurate. Depending upon the console, you may find various methods of calibrating the VU meter.

(1) If you find the meter is improperly calibrated, it must be recalibrated against a known standard. In some cases, it is necessary to change the resistors in the pad circuit to get the correct VU meter calibration.

(2) You should realize the importance of output level control since this signal goes to a recorder, a live broadcast, or a live CCTV network. Therefore, any distortion which results from the overdriven output causes a loss of intelligence.

d. The troubles diagnosed here are only a few that may cause the symptoms described. Some of the troubles may have many other symptoms which enable you to determine the most likely cause of malfunction.

(1) As we have already mentioned, some of the hum problems are found in both transistor and tube-type sets. However, we know that troubles with hum are less frequent with transistor units, because they do not use heater voltages. Most of the hum picked up in a transistor unit are from the

preamplifiers, amplifiers, long microphone leads, and other types of inputs. The tube-type control consoles are different because of the AC filaments. The hum balance adjustment procedure has already been discussed; however, this adjustment suffices only if all components are in good condition.

(a) For example, if you attempt to make the hum adjustment and find that the control does not have any effect, there is another reason for the hum. In some models of the control console, the hum adjustment is nothing more than a DC voltage that can be varied from one side of the filaments to the other.

(b) In essence, this applies a positive potential on the filaments with respect to the cathode, causing a current from the cathode to the filaments rather than from filaments to cathode. Thus, any hum which might ordinarily be coupled from the filaments is blocked.

(c) Now if you cannot make the hum adjustment with the balance control, there is a good possibility that the voltage is missing from the hum balance adjust. Depending upon the console model, you may have as much as 40 volts at the center tap of the balance control. This voltage is usually obtained from a bleeder circuit in the B+ supply. Therefore, when there is a hum control failure, you should check the power supply voltage and the balance voltage source.

(2) Recall that the muting relay is used to mute the speaker. If this fails, sound may be fed back from the speaker to the microphone. There are two possible places to look for the cause of this trouble one is the relay which does the muting, and the other is the switch which controls the relay. Of course, you can easily determine whether the switch is faulty by using another selector switch to see whether or not the relay is activated.

(a) If the relay is activated and the speaker is muted, you know that the trouble is in the switch.

(b) If the relay is not activated, then it should be checked.

(c) Another thing to remember about sound feedback is that the higher audio frequencies usually cause more difficulties than the lower frequencies. Also, do not overlook the possibility of sound feedback from extension monitors in adjacent rooms. These sources of sound can also be troublesome.

e. Since the microphone is the signal source in an audio system, it can also be the source of troubles. The microphone in most all instances requires a preamplifier as indicated on the block diagram (fig 1-1). There are many troubles that are attributable to the microphone itself, such as broken cords, loose connections, and corroded terminals--all of which could cause weak or erratic output. This is in addition to any other internal damage to the microphone; and, of course, any of these symptoms could be localized to the microphone by substitution of a known good microphone.

(1) If the trouble is in the preamplifier, then of course it would be a matter of checking tubes and other items or perhaps circuit tracing the preamplifier.

(2) However, a weak signal would usually be caused by a weak tube in the circuit. Other possibilities, although less probable, are low B+, low filaments, components value change, and other minor items.

f. The mixer control is one part of the control console which is used extensively and causes some trouble during operation.

(1) The mixer or variable attenuator is nothing more than a gain control; therefore, it has a sliding arm contact.

(2) The sliding contact may become dirty and cause noisy operation of the control. This is very apparent in the gain rather than a smooth change. The trouble can be eliminated by cleaning the wiper arm contacts with a good contact cleaner, or some other cleaner as recommended by the manufacturer.

Learning Event 3:

DESCRIBE AND IDENTIFY THE EQUIPMENT USED IN A COMPLEX AUDIO CONSOLE

1. Complex audio console. The basic configuration of the equipment consists of a main audio console, an auxiliary mixer console, and an auxiliary control console.

a. At the main audio console, mixers are provided for four microphones, one turntable, one tape station, one network audio circuit, and one remote audio circuit, providing a total of eight. By means of lever keys, each program source may be switched to a program bus or on audition bus. Keys for the microphone positions also provide studio speaker control, so that the speaker is locked out during a broadcast. Talkback facilities allow communication to the studio, except during on-the-air periods.

(1) Twelve microphone circuits may be connected permanently to the console, and through the use of lever-type switches, four of the microphones can be assigned to preamplifiers and mixers. Each mixer output is controlled by a key-type switch, so that the output may be connected to either the program or the audition bus.

(2) Either of two methods may be used to connect the auxiliary mixer and the main audio console. By paralleling the audition and program buses of each, a total of eight microphone mixers are available. In addition, a speaker interlock circuit is provided on the audition-program switches.

(3) By connecting the program output of the auxiliary mixer, one master mixer and four subcontrol mixers are provided. Such a configuration is desirable when an orchestral program is to be broadcast. Proper instrument balance can be obtained by settings of the individual mixers, and the master mixer can be used to provide cutoff or fading of the entire group.

2. The auxiliary console primarily provides intercom facilities. In addition a VU meter with selector and attenuator, a turntable volume control with studio playback switch, and a spare attenuator also are provided.

a. The VU meter may be used to monitor other functions when the master console unit is in use.

b. The turntable volume control and studio playback switch provide a means of introducing background material into the program material. For example, when an actor "on camera" appears to be thinking of something having a direct bearing on the plot or program, the thoughts (previously tape recorded) can be played through the studio speaker. Additionally, the actor is able to coordinate actions and facial expressions properly by listening to the played-back material.

c. The intercom facilities provided by the auxiliary console are controlled by the six telephone ring-down circuits, which may be connected to outside points. An additional intercom is necessary to provide talkback facilities to the projection room, studio, announce booth, and order wire. The intercom system should include a microphone, a preamplifier, and relay control key-type switches. The keys should be located near the director's operating position.

Lesson 1
PRACTICE EXERCISE

1. The drive stage usually develops power in which of the following forms?
 - a. Milliseconds
 - b. Milliwatts
 - c. Miniohms
 - d. Millicurrents
2. Which of the following are parts of the audio console?
 - a. Vector scope
 - b. Sync generator
 - c. Monitor facility
 - d. TV monitor
3. The hum balance control is used to make which of the following adjustments?
 - a. Hum leveler adjust
 - b. Hum device adjust
 - c. Hum effect adjust
 - d. Hum adjustment
4. Which of the following causes the sound from the speaker to be fed back to the microphone?
 - a. The muting relay does not mute
 - b. The oscillating amplifier does not oscillate
 - c. The mixer control does not mix
 - d. The hum device does not eliminate hum
5. A mixer is sometimes called a
 - a. Scrambler
 - b. Wiper arm
 - c. Gain control
 - d. Muting relay
6. Which of the following is a monitor for the master console unit?
 - a. A television screen
 - b. A VU meter
 - c. A studio speaker
 - d. An intercom

LESSON 2
DESCRIBE AND IDENTIFY THE FOUR BASIC TYPES OF MICROPHONES-AND THE
MAINTENANCE PROCEDURES REQUIRED FOR PROPER OPERATIONS

TASK

Describe and identify the four basic types of microphones and the maintenance procedures required for proper operation.

CONDITIONS

Given information and illustrations about terms relating to the four basic types of microphones and the maintenance procedures required for proper operation.

STANDARD

Demonstrate competency of the task skills and knowledge by correctly responding to 80% of the multiple-choice test covering terms relating to the four basic types of microphones and maintenance procedures required for proper operation.

REFERENCES

None

Learning Event 1:

DESCRIBE AND IDENTIFY THE BASIC CONSTRUCTION OF THE FOUR BASIC TYPES OF MICROPHONES

1. Microphones. A microphone is a device which converts sound waves into an electrical signal, and applies this signal to an amplifying circuit. Following sufficient amplification, the electrical signal is used to drive a reproducer or to modulate a carrier frequency for transmission.
2. General Characteristics. The general characteristics of the most widely used types of microphones--dynamic, carbon, crystal, and capacitor--are discussed in this section. Each of these basic types of microphones uses a specific fundamental principle of operation.
3. Types of microphones. The basic operation of a microphone is dependent upon pressure of sound waves. The angles at which the sound waves strike the diaphragm of a microphone depend upon the positioning of the microphone in relation to the sound source. If the sound waves strike the diaphragm at different angles the pressure is different, this will cause the microphone to be directional in its frequency response. Most microphones are directional at

frequencies about 2000 Hz. Special construction of the microphone housing or case may produce additional directivity at frequencies below 2000 Hz. Examples of specially constructed microphones are the "shotgun" and "reflector" types. Nondirectional microphones also require special design considerations. For nondirectivity, it is necessary to so design the housing that signals from all directions exert uniform pressure on the diaphragm. The microphone which is designed for general purpose use is polydirectional; this type of microphone is usually mechanically adjustable to achieve the desired pattern of pickup.

4. Dynamic microphone. The dynamic or so-called moving-coil type is the most widely used. Because of its low (and adjustable) impedance, it can be installed with long cables without serious adverse effect to the overall audio system; it is not easily damaged by rough handling and is not particularly sensitive to blasts (instantaneous sound peaks).

a. A dynamic microphone contains a coil made of a large number of turns of extremely thin metal ribbon attached to the diaphragm. This coil is insulated from the diaphragm by a thin coat of insulating varnish. The coil extends from the diaphragm to a point between the poles of a powerful permanent magnet. When sound waves strike the diaphragm, the coil moves back and forth within the magnetic field between the poles of the permanent magnet and cuts the magnetic lines of force.

b. An illustration of a microphone designed to operate on this principle is shown in Figure 2-1a. This action induces a current in the coil in direct proportion to the sound pressure exerted on the diaphragm.

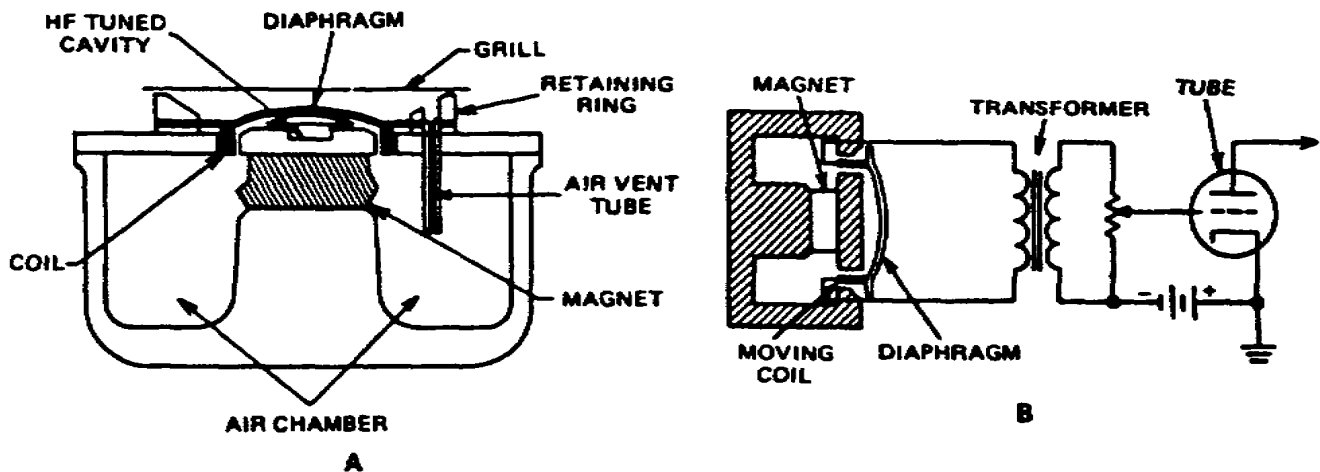


Figure 2-1. Dynamic microphone (A) mechanical details and (B) circuit diagram

c. The dynamic microphone elements are normally housed in a metal shell and covered with a metal grill and silk cloth to prevent damage from foreign particles and to minimize dust collection. The improvement in frequency response of this type of microphone over other types lies in the inclusion of an echo compensation circuit, which consists of an air chamber between the housing element and an air-vent tube; the length and diameter of the air-vent tube control the echo compensating action of the air chamber.

d. The impedance of the moving coil in the dynamic microphone is approximately 50 ohms; therefore, the coil may be connected to an amplifier by means of long cables. There are microphones available with built-in matching transformers to match low impedance of 30, 50, and 250 ohms or high impedance up to 50 kilohms. A switch is built in to select the various impedances. The frequency response of this type of microphone is reasonably flat over the range from 40 Hz to 10,000 Hz. Since the output voltage level is only about 0.00004 volt, a preamplifier must be used for adequate amplification. The circuit diagram of the dynamic (moving coil) microphone is illustrated in Figure 2-2B.

e. The ribbon microphone, a variation of the dynamic microphone using the moving coil principle, is widely used in studio operations. It has no real diaphragm, and its operation depends upon the velocity of air. Therefore, it is sometimes termed a "velocity" or "pressure gradient" microphone. The microphone, as shown by diagram in Figure 2-2A, consists of a powerful horseshoe-shaped electromagnet or permanent magnet, M, with special pole pieces between which a thin corrugated metal ribbon, R, is suspended. The ends of this ribbon are connected to the primary of a special step-up transformer.

f. The construction details of the ribbon microphone are illustrated in Figure 2-2B. The microphone should be so placed that the incoming sound strikes it at right angles, as those from the side have practically no effect. The sound striking the ribbon causes it to vibrate and thus cuts some of the magnetic lines of force between the pole piece. This action generates a voltage in the ribbon that is coupled to the grid of an amplifier via a special step-up transformer. Since the ribbon microphone is sensitive to velocity, it should be covered or otherwise shielded when used outdoors or in drafty areas, where air tends to produce undesirable ribbon vibrations.

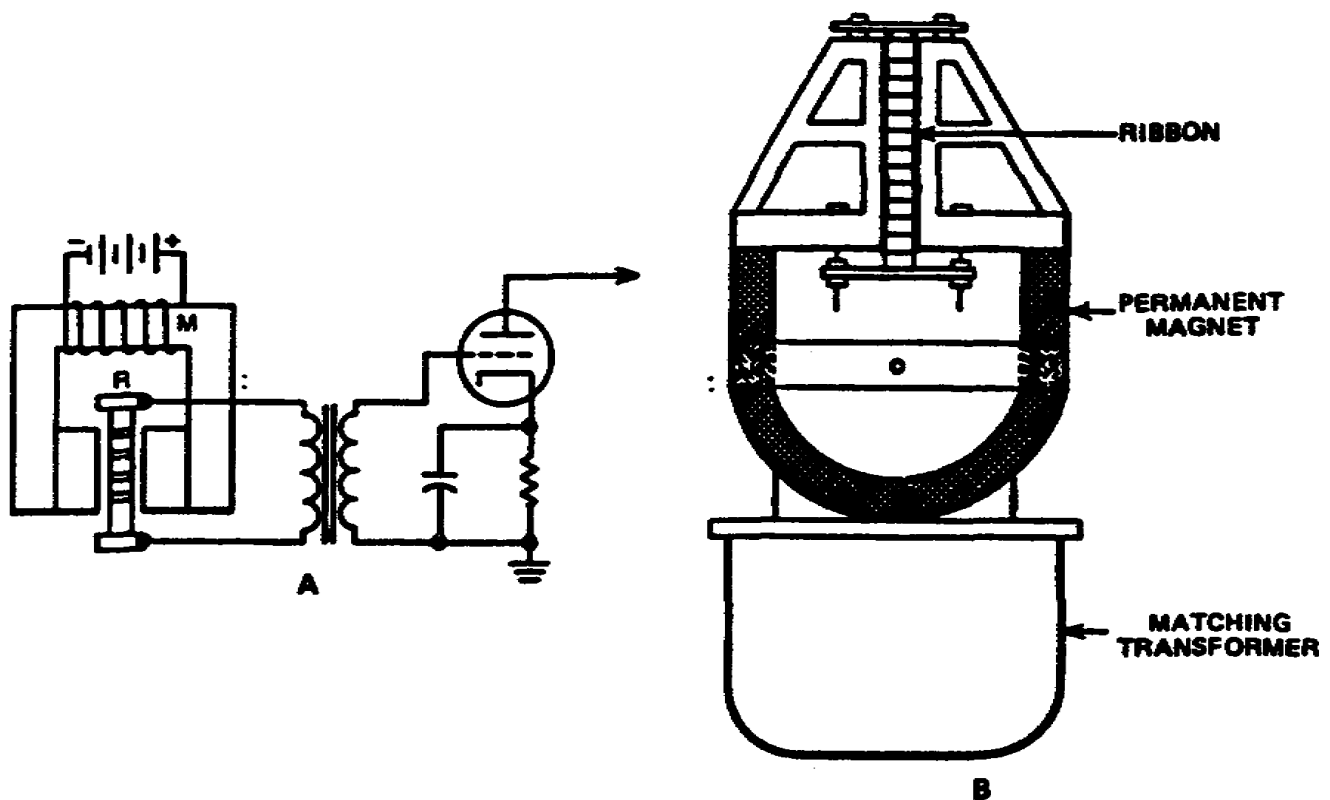


Figure 2-2. Velocity microphone (A) circuit diagram and (B) construction details

g. The voltage output of the velocity microphone across 250 ohms is 0.0002 volt. The corrugated ribbon has a resistance of only a fraction of an ohm; therefore, the matching transformer is usually built into the microphone to reduce losses. The frequency response is practically flat from 30 to 15,000 Hz. The low impedance of the velocity microphone permits a long cable connection to the amplifier, but the cable must be well shielded because of the possibility of AC hum pickup.

5. Carbon microphone. The carbon microphone is widely used in intercommunications and cueing systems. In the carbon microphone, a constant direct current is permitted to flow through a mass of carbon granules. As sound waves vibrate the diaphragm, its resultant motion alternately compresses and releases pressure on the mass of carbon particles. The changing pressure on the carbon causes the resistance value of the total mass to change, thus permitting either more or less direct current passage. A cross section of a typical carbon microphone is shown in Figure 2-3A; A and B are heavy steel rings. The ridge in one and the groove, D, in the other hold the diaphragm, C, very tightly. The diaphragm is made of a very tough steel alloy and is generally designed to be from 0.001 to 0.002 inch thick. The small ring, G, is screwed into the large steel ring, B, to adjust the diaphragm tension, so that its natural period of vibration is above the desired audio frequency range. The central portion of the diaphragm is gold-plated on each side to

ensure good contact. The back of the microphone is closed, except for a series of holes that permit the air and sound to reach the back of the diaphragm. The bridge, E, extends across the opening in the front of the microphone and supports the front carbon granule cup, or button, F. A similar one is supported by the back. These carbon cups, or buttons, do not touch the diaphragm and are partly filled with fine carbon grains. The size of these grains determines the sensitivity of the instrument, and soft felt washers prevent the carbon from getting out of the cup.

a. Figure 2-3B illustrates both the mechanical structure and the equivalent electrical circuit of the simple single-button carbon microphone. The single-button carbon microphone is characterized by high output level and ruggedness. It is practically unaffected by heat and humidity. When space and weight are limited in an installation, its high output is advantageous because fewer amplifier circuits are required. The output ranges from 0.1 to 0.3 volt across a normal transformer impedance of 50 to 100 ohms.

b. To secure a more uniform response from various frequencies, the double-button type of carbon microphone, illustrated in Figure 2-3C, is generally used in place of the single-button type. As you can see, the diaphragm is placed between the two cups which contain carbon grains. Vibration causes the grains of carbon on one side of the diaphragm to be compressed; at the same time, it causes the grains of carbon on the opposite side of the diaphragm to be loosened. This action permits more current through the first carbon button than through the second. The output voltage of the double-button carbon microphone ranges from 0.02 to 0.07 volts across a normal transformer impedance of 200 ohms.

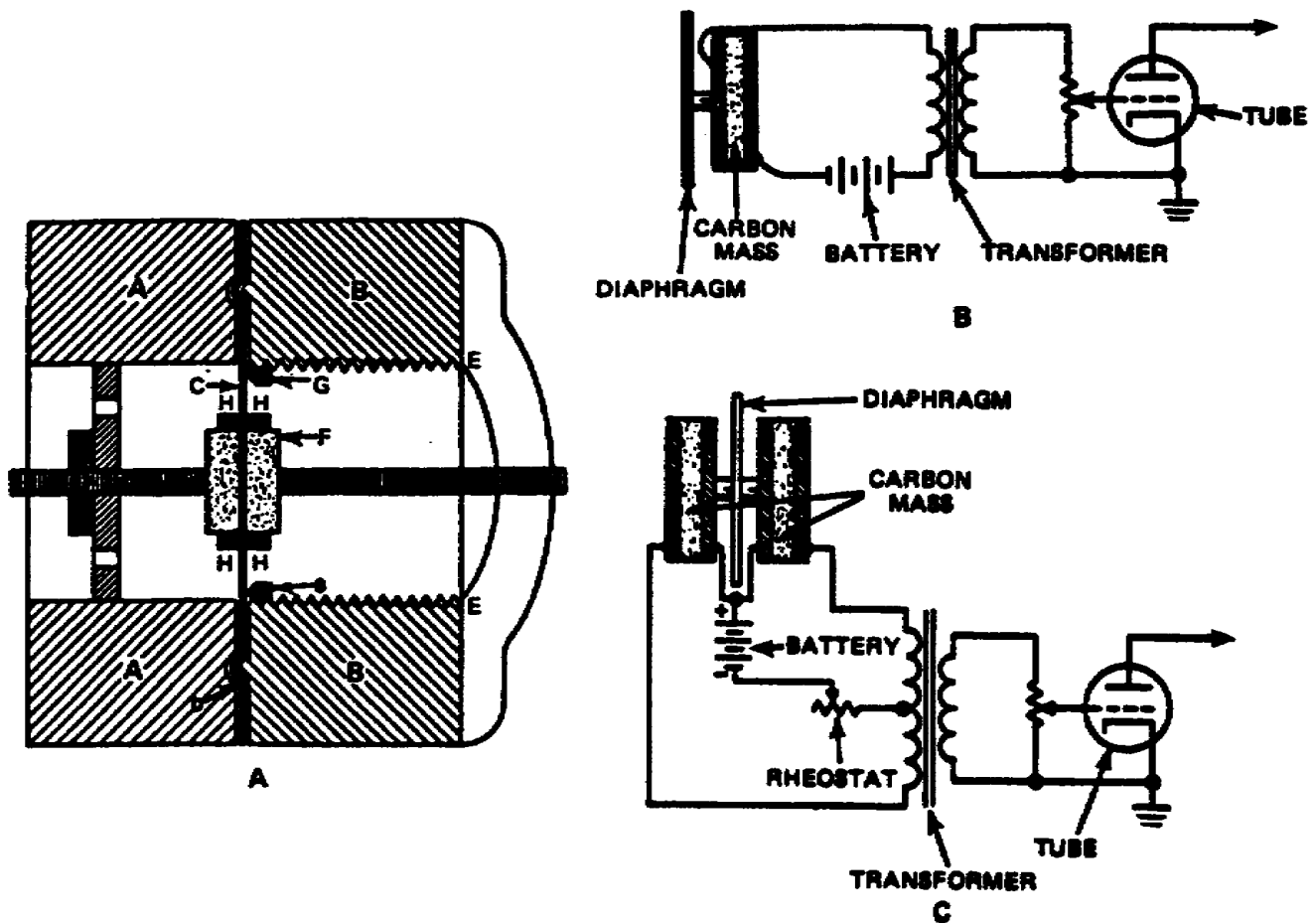


Figure 2-3. Carbon microphone (A) cross sectional view, (B) single-button circuit diagram, and (C) double-button circuit diagram

c. The frequency response is uniform from 60 to 1000 Hz. Above 1000 Hz, the response increases rapidly, becoming more than 15db higher at 2500 Hz than it was at 100 Hz. The response then remains uniform up to approximately 6000 Hz, where there is a marked falling off in response. Because of its poor response to the higher audio frequencies as well as its high noise level (hiss), the carbon microphone is not widely used for general television purposes.

6. Crystal microphone. The crystal microphone requires no energizing potential source such as the battery used with the carbon microphone. It requires no transformer or other coupling device. Its output, although not as high as the carbon microphone output, is adequate for direct application to the grid circuit of an amplifier. These features, plus its inherent simplicity and compact size, make this type of microphone unique among the devices designed to convert sound waves into electrical impulses.

a. Crystal microphones can be divided into two types--the diaphragm type and the sound cell type. The crystal element used in either type can be permanently damaged by high temperatures. This limits the number of useful applications. However, the crystal microphone is still widely used as a high-quality microphone for communications, both military and commercial. Figure 2-4A is a diagram showing the bimorph crystal unit; sound waves striking the diaphragm cause the diaphragm to vibrate. These vibrations are transferred to the surface of the crystal by means of the connecting pin. The fidelity of this type instrument is approximately equal to that of most double-button carbon microphones; however, the frequency response extends to a much higher range. In the crystal microphone, there is no background hiss or noise generated in the microphone itself. However, noise pickup on cables which are longer than 30 feet does limit the use of crystal microphones in television.

b. The sound cell is another type of crystal microphone, as shown in Figure 2-4B. The back-to-back crystal elements are enclosed within a rectangular bakelite frame sealed by two flexible membranes. No diaphragms are required in a sound cell microphone, because the membrane imparts the sound pressure directly to the crystals, which produce the resultant AC voltage.

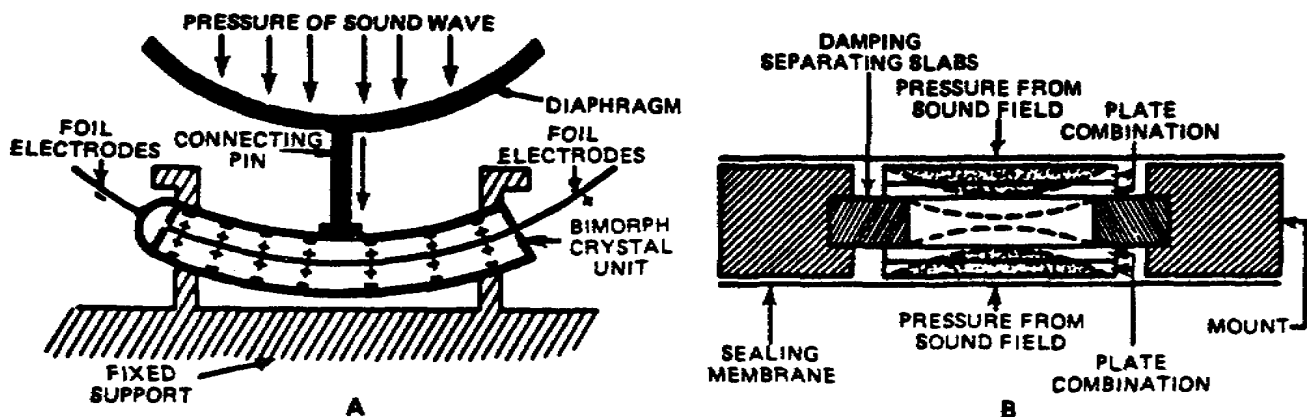


Figure 2-4. Crystal microphone (A) cross sectional view of diaphragm and crystal and (B) cross sectional view of single sound cell unit

7. Capacitor microphone. A capacitor microphone generally consists of two electrodes separated by a very thin dielectric, usually air. One electrode is the diaphragm, while the other is a rigid plate which has the same area as the diaphragm. The diaphragm motion changes the spacing between the two electrodes, varying the capacitance.

a. If a DC voltage is applied across the combination, the changes in spacing produce changes in the capacitor charge which can be obtained as an AC voltage.

b. This device has a very linear pressure response and a wide frequency response and is relatively insensitive to mechanical noise because of its stiffness of construction.

c. The capacitor microphone requires an external power source and is adversely affected by high or changing humidity.

d. The output voltage is small; therefore, amplification is required, and the leads must be kept very short to avoid picking up stray field noise. New developments with solidstate amplifier built into the microphone housing have changed this situation.

8. Microphone Characteristics. The characteristics of the various microphones are summarized in Figure 2-5 which lists the various major types of microphones, together with their output level in dB and their frequency range in hertz. From Figure 2-5, you can see that from the standpoint of output level the carbon type is best and from the standpoint of frequency range the velocity type is best.

MICROPHONE TYPE	FREQUENCY RANGE IN CYCLES	SIGNAL-TO-NOISE	EXAMPLES OF OUTPUT IMPEDANCE	AVERAGE DB OUTPUT	VOLTAGE OUTPUT
DYNAMIC					
MOVING COIL	30 TO 20,000	MEDIUM	LO-Z 30, 60, & 260 HI-Z 50K	-55 TO -60	0.00004V
RIBBON	30 TO 20,000	MEDIUM	250 OHMS	-55 TO -60	0.0002V
CARBON					
SINGLE-BUTTON	70 TO 6000	LOW	50 TO 100 OHMS	-45	0.3V
DOUBLE-BUTTON	60 TO 6000	LOW	200 OHMS	-35 TO -45	0.07V
CRYSTAL	UP TO 14,000	HIGH	5 MEGOHMS	-50 TO -60	
CAPACITOR	20 TO 15,000	HIGH	30, 150 OR 600 OHMS	-63	

Figure 2-5. Comparison of microphones

Learning Event 2:

DESCRIBE AND IDENTIFY THE ADJUSTMENTS AND MAINTENANCE REQUIRED FOR PROPER MICROPHONE OPERATION

1. Microphone adjustments. It should be said that most of the difficulties with microphones are caused by misuse or careless handling. Nevertheless, let us mention a few adjustments that can be made on a microphone. The polydirectional microphone may be any of the basic types which have an adjustable aperture. When the aperture is fully open, the microphone has a bidirectional pattern; when the aperture is closed, the microphone is nondirectional. At shutter settings between the open and closed positions, the microphone is unidirectional. Some microphones are designed with blast filters which are adjustable and require settings commensurate with the operating conditions.

2. Microphone maintenance. The maintenance of microphones is-not so much in the microphone-itself but rather in the cords and connectors. If, for instance, you were told a carbon microphone did not have an adequate output, the first thing you should check is the carbon granules for a "packed" condition. This condition is caused by excessive current which causes the carbon granules to stick. Carbon granules that are packed can sometimes be loosened if you turn off the applied current and shake the microphone while holding it in various positions. If this does not correct the situation, you may have to replace the carbon granule mass. Do not shake a dynamic microphone, as this will not accomplish anything desirable and may damage the internal unit.

Lesson 2
PRACTICE EXERCISE

1. What are the four basic types of microphones?
 - a. Steel ring, attenuator, coil, magnet
 - b. Dynamic capacitor, crystal, carbon
 - c. Grill, pressure, directivity, shotgun
 - d. Diamond, resistor, tube, air-vented

2. What is the approximate impedance of the moving coil in the dynamic microphone?
 - a. 50 ohms
 - b. 75 ohms
 - c. 10 ohms
 - d. 100 ohms

3. Which of the following microphone has the highest output level?
 - a. Carbon
 - b. Crystal
 - c. Diamond
 - d. Velocity

4. Which of the following is a variation of the dynamic microphone?
 - a. Ribbon
 - b. Diamond
 - c. Carbon
 - d. Capacitor

LESSON 3
DESCRIBE AND IDENTIFY THE THREE MAIN FUNCTIONS AND
THE THREE MAIN SECTIONS OF AUDIO TAPE RECORDERS AND
THE MAINTENANCE PROCEDURES REQUIRED FOR PROPER OPERATIONS

TASK

Describe and identify the three main functions and the three main sections of audio tape recorders and the maintenance procedures required for proper operations.

CONDITIONS

Given information and illustrations about terms relating to the three main functions and three main sections of an audio tape recorder and maintenance procedures required for proper operations.

STANDARDS

Demonstrate competency of the task skills and knowledge by correctly responding to 80% of the multiple-choice test relating to terms about the three main functions and the three main sections of an audio tape recorder and the maintenance procedures required for proper operation.

REFERENCES

None

Learning Event 1:

DESCRIBE AND IDENTIFY THE THREE MAIN FUNCTIONS AND THREE MAIN SECTIONS OF AN AUDIO TAPE RECORDER

1. Audio tape recorders. Perhaps you own a home tape recorder and have performed minor maintenance on it. In this section you are concerned with audio tape machines as they apply to TV production. You will notice that the terms "audio tape recorders" and "audio tape machines" are used interchangeably in this material. In the audio tape recording field, there is a difference in the tape player and tape recorder. A tape player can combine the three functions of erasing, recording, and playing back audio frequencies, the same as a home variety tape recorder. A tape recorder is usually limited to the erasing and recording of audio frequencies.
2. Audio Tape Machine. For our discussion, we have divided the audio tape machine into three main sections: transport mechanism, heads, and electronics. In the following discussion you will find variations in the functions of each

of these main sections. For example, the tape heads are identified according to their functions of erasing, recording, or playback.

a. All of the tape machines require some type of mechanism to move the tape past the record and playback heads. Such mechanisms have been given various names, but "tape transport" seems to be generally accepted as standard. "Tape handlers" is the term used to designate machines designed for fast start-stop operation. These fast start-stop machines are usually a type of computer or laboratory tape transport which require the tape to start or stop instantaneously. In contrast, the standard machine requires about 1 second to reach full speed and perhaps 5 to 10 seconds to fully stabilize.

(1) A good quality tape transport has the features of the mechanism illustrated in Figure 3-1. These features include the tape supply reel, which is provided with either a friction brake or an active back torque. The back torque is supplied by the drive system or a torque motor. Back tension (torque) is necessary to keep the tape from becoming tangled due to the inertia of the tape reel. The tension idler holds a certain amount of tape in its loop; this spare amount of tape is temporarily let out during quick starts. A slight delay in time is allowed for the supply reel, which has appreciable inertia, to start turning at operating speed. The tension idler and back torque work together to smooth out irregularities caused by the rubbing of the tape against the supply reel sides, sticking together of tape layers, or other causes.

(2) Again looking at Figure 3-1, note that the tape is drawn from the tension idler, across the rolling tape guide erase head, tape guide, record head, tape guide, and reproduce head. The force, which draws the tape across the heads at a constant speed, is provided by the capstan and the capstan pressure roller. The combination of the capstan, the tension idler, and reverse torque of the supply reel keeps the tape under constant tension. There is friction between the tape and the stationary heads. This friction is a source of vibration. Attempts to eliminate this vibration are included in the design of the transport mechanism by using a rigid base on which to mount the transport components. Other causes of vibration are the amount of wrap around the head, smoothness of head faces, tape tensions, tape condition, tape composition, temperature, and humidity. The capstan may be either the shaft of the drive motor or a shaft driven through a speed-reducing mechanism. The capstan and any associated mechanism must be made with precision, or it causes problems during both record and playback. This requirement for precision components includes the drive motor, as it must drive the capstan mechanism at a constant speed.

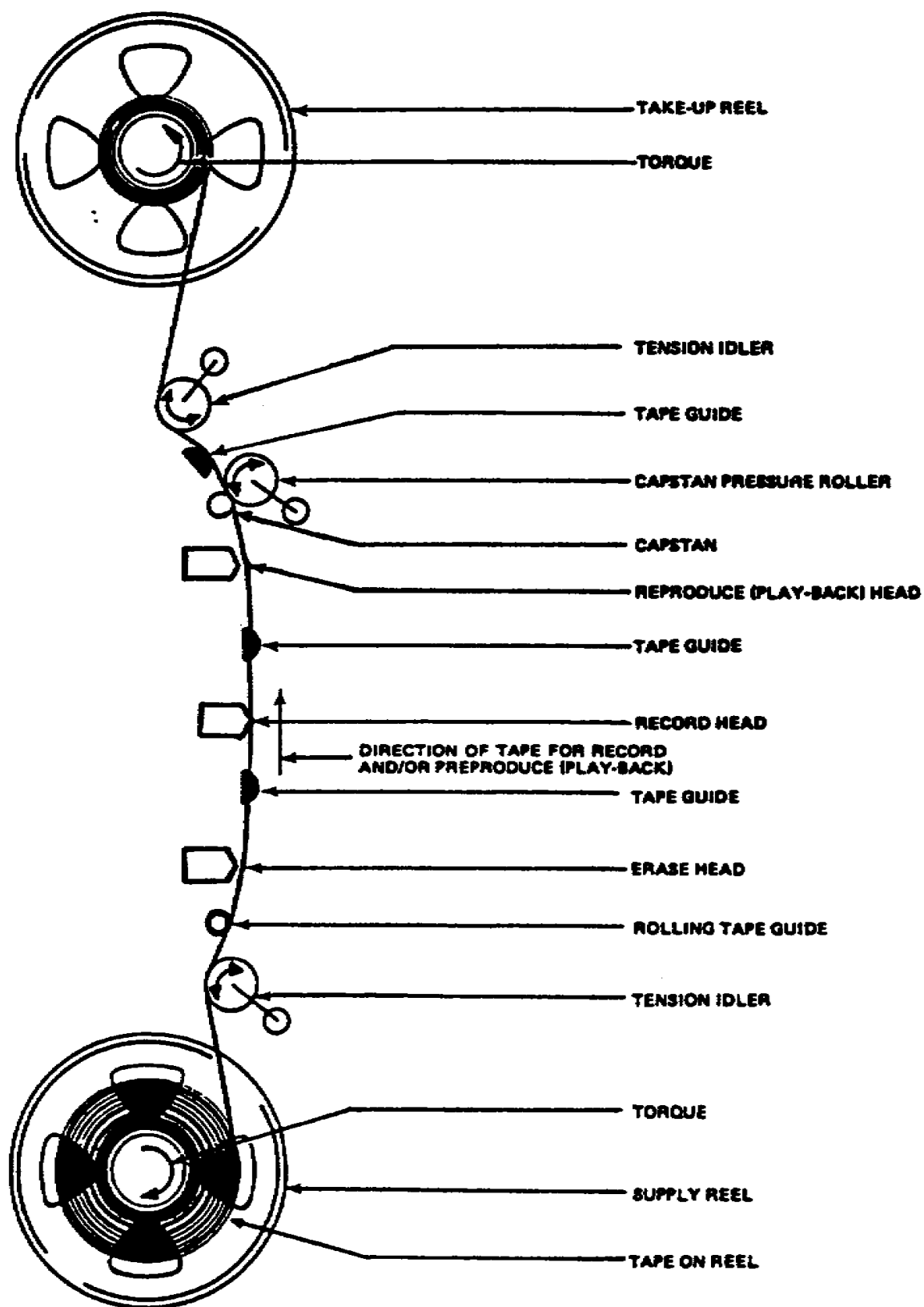


Figure 3-1a. Tape transport mechanism (record mode)

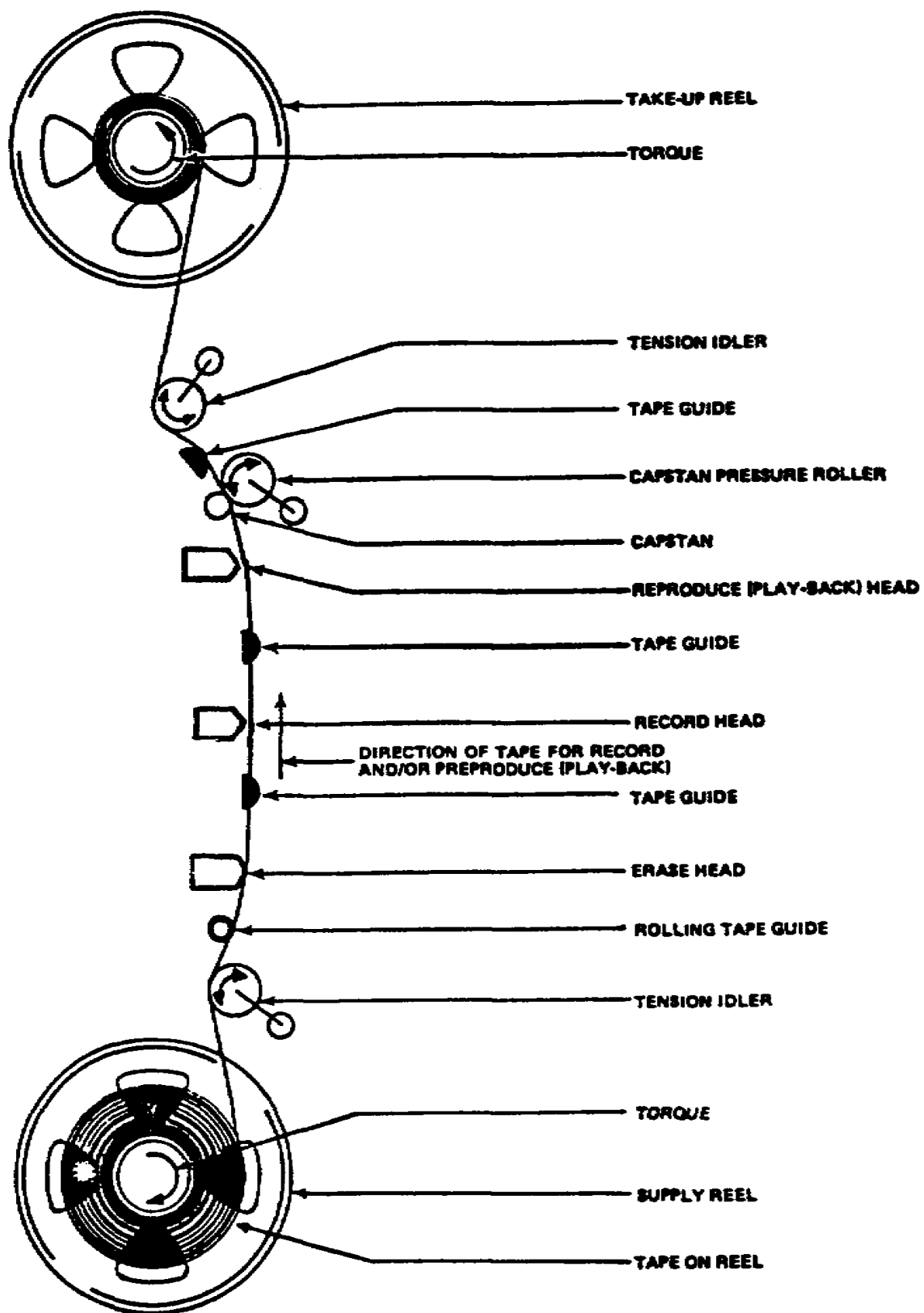


Figure 3-1b. Tape transport mechanism (erase mode)

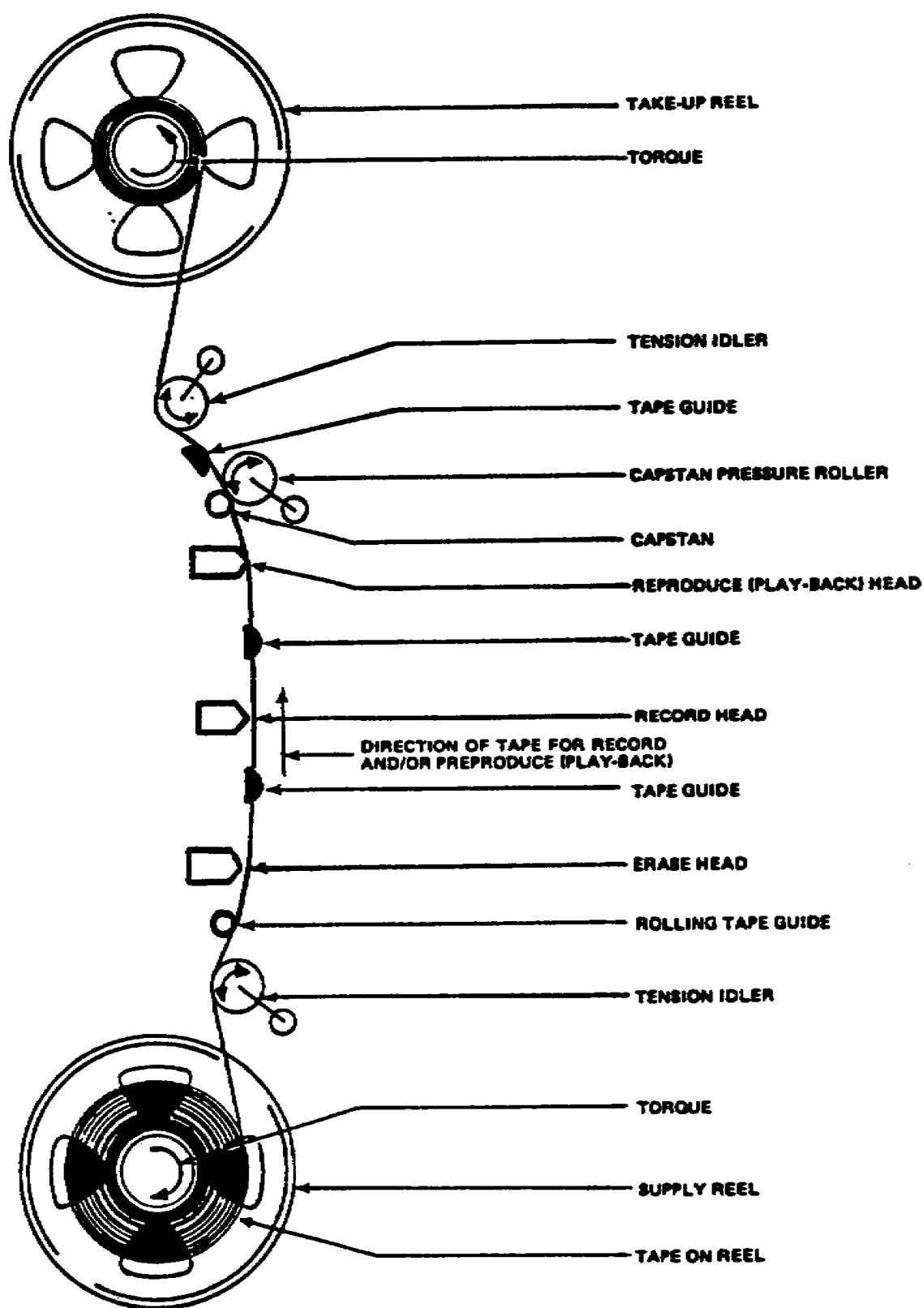


Figure 3-1c. Tape transport mechanism (reproduce mode)

(3) Immediately following the capstan and the capstan pressure roller is another tape guide. Each tape guide serves to keep the tape in alignment with the heads at all times. If the tape guides permit any vertical variation of the tape, a possibility exists of attenuation of the recorded signal during reproduction. In extreme cases the signal could be lost entirely, or the erase head would either fail to erase or improperly erase when a recording is made. The tension idler near the takeup reel serves the same purpose as the other tension idler. The torque on the takeup reel changes according to the amount of tape on the reel.

b. Three tape heads may be used on the more expensive tape machines. Some machines, such as those designed for home use, use the same head for recording and reproducing.

(1) The basic construction of tape heads is the same--that is, the head consists of a core of permeable material which is wound with a coil of wire (fig 3-2). This core of permeable material is formed into a contact. The core material is usually of a laminated construction (fig 3-3) rather than nonlaminated. The nonlaminated heads are cheaper to construct, but they usually produce poor results. The laminations, produce a better response to higher frequencies by reducing magnetic losses due to eddy currents.

(2) The core of the head is wound with a number of turns of wire, but the number of turns depends upon the purpose for which the head is designed. The manner in which the core is wound is dictated by the head use; also, two windings may be used. Most of the newer heads follow the two-winding design, one winding on each side of the gap. In most of the newer designs, the two windings are terminated externally, thus they may be connected in a parallel or series arrangement as desired. The core and winding are enclosed in a protective metal housing to prevent the winding from picking up hum emanating from motors, transformers, etc.

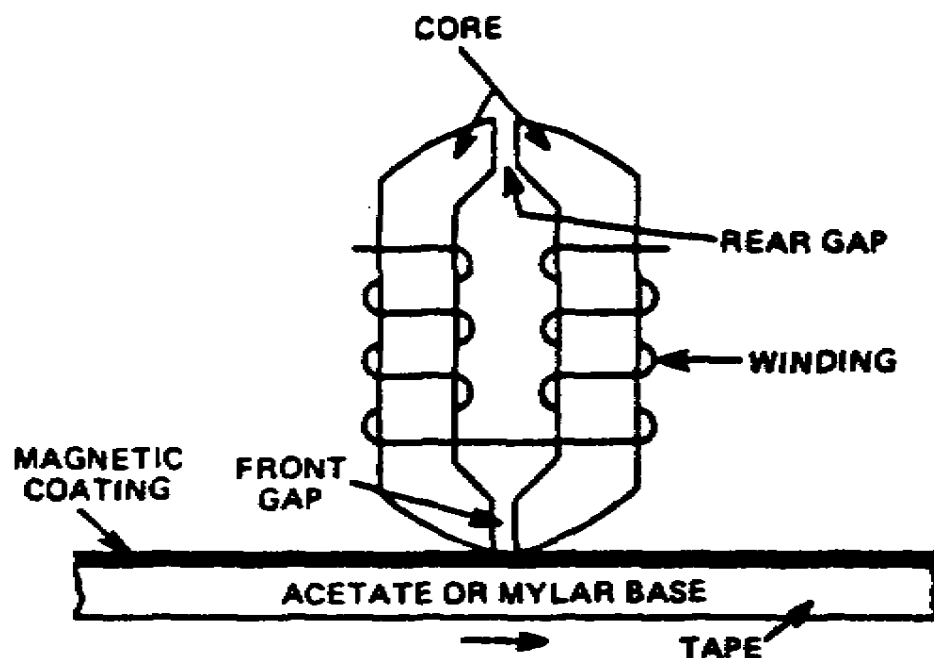


Figure 3-2. Construction of magnetic head

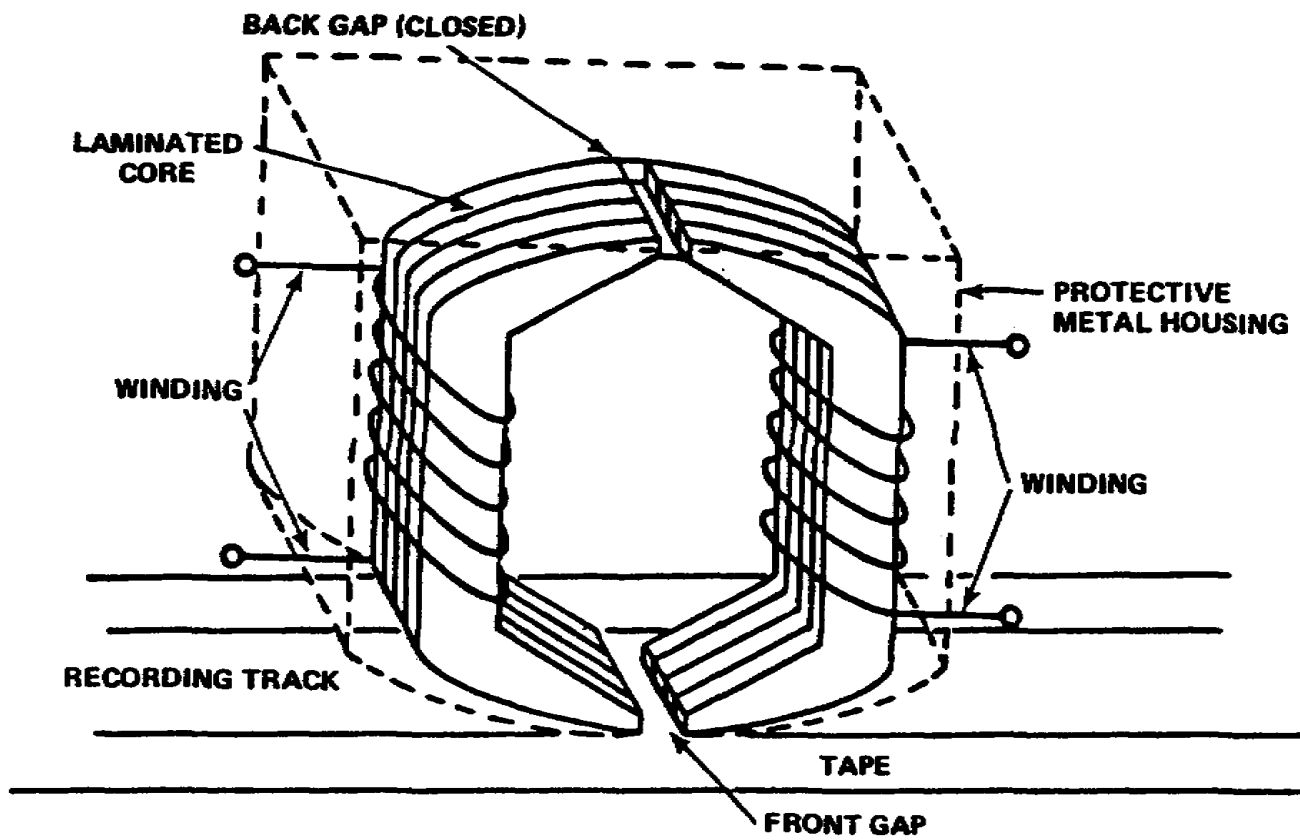


Figure 3-3. Laminated core tape head

c. So far, all of the heads under discussion have been of the electromagnetic type. To further expand on the erase head, some are constructed to use either a single permanent magnet or a series of permanent magnets to set up a magnetic field.

(1) If a single magnet is used, the tape is erased by the magnetic flux.

(2) However, with more than one magnet, the tape is erased by the changing cycles of the magnetic flux fields.

(3) The more popular erase heads are those which use a high-frequency current to create an AC magnetic flux. This current is supplied by the bias oscillator, which also provides the bias current to the record head, where the magnetic flux lines penetrate the magnetic coating of the tape (fig 3-4). The AC erase head has fewer turns of wire than the standard playback head, and it passes current easier and operates better at the higher frequencies.

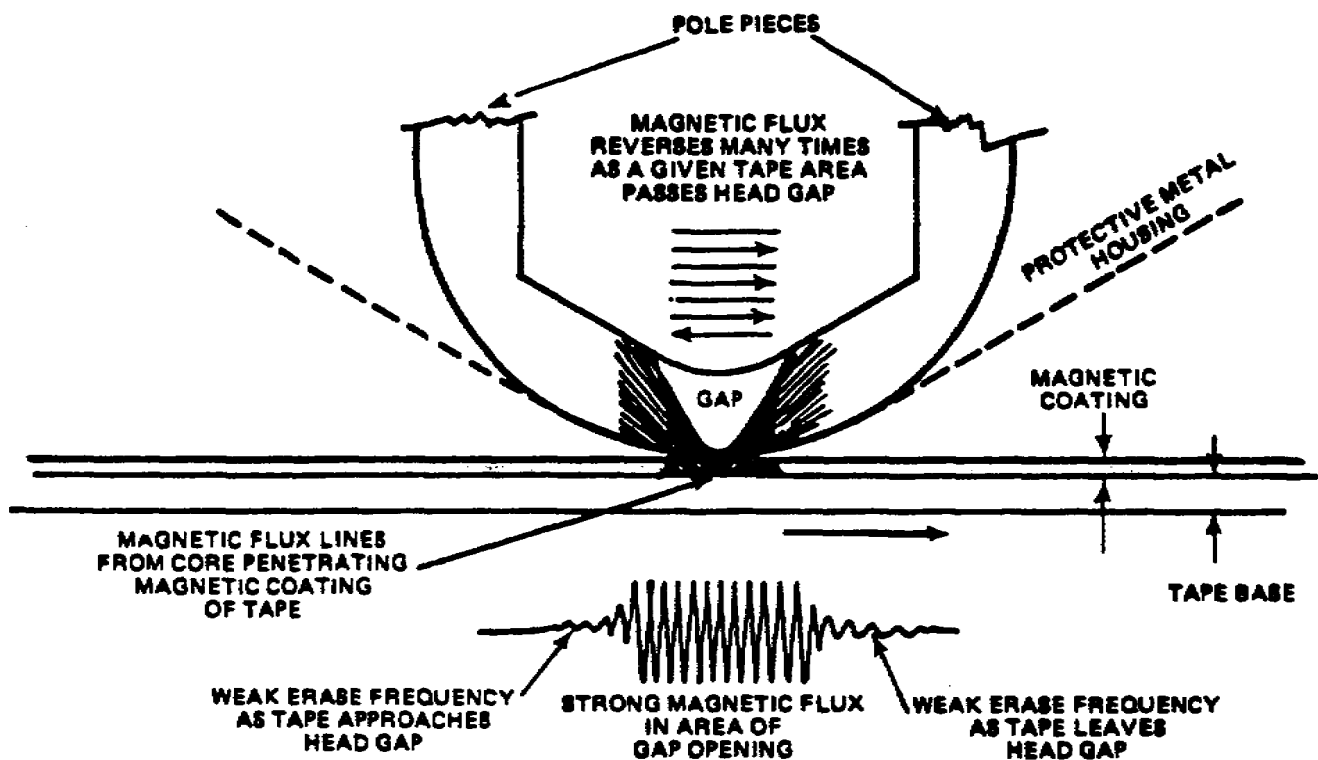


Figure 3-4. Action of high-frequency erase head

(4) Another feature of an AC erase head is a wider gap which permits the tape particles to change direction more times, thus giving a more complete erasure of the tape.

(5) Notice that as the tape approaches and then leaves the gap in the head, the erase action builds up from zero to maximum and back to zero. Thus, any magnetic pattern which was previously recorded is obliterated by the action of the high-frequency bias oscillator.

d. When an alternating current is sent through the winding of a record head, a magnetic field corresponding to the applied current is produced in the core (fig 3-5). The magnetic field has a great deal of difficulty passing through the nonmagnetic gap in the core. However, when the magnetic coating of the tape closes the gap, the field can easily complete its journey via the tape. The tape now becomes magnetized in accordance with the fluctuations of applied current.

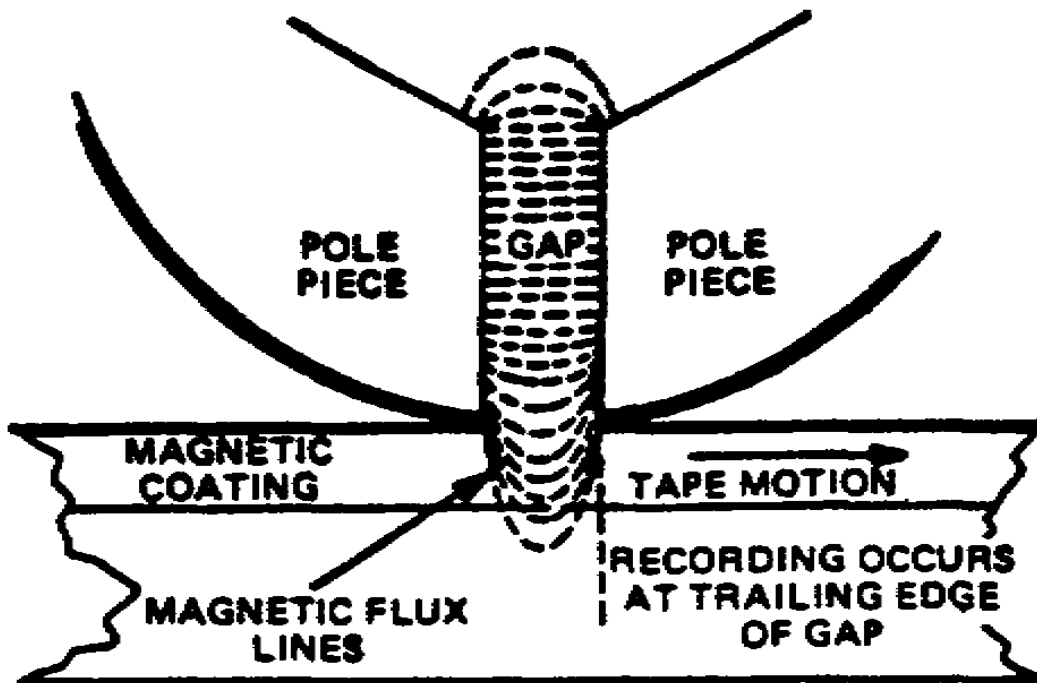


Figure 3-5. Flux lines in a recording gap

(1) The magnetic fluctuation of the tape continues until the instant the tape passes the trailing edge of the gap. The magnetic orientation at the instant of departure from the gap edge is the pattern that remains on the tape. For the best possible recording, the trailing edge of the gap should be as straight and sharp as possible. A principle difference between heads of poor quality and high quality is the definition of the gap edge. The amount of electrical signal required to produce a certain amount of magnetic flux on one head may create a stronger magnetic flux on another head because of differences in efficiency or elements of design. The signal level that causes distortion varies among heads of different manufacturers. You must take these factors into account if you substitute a different make or model of head for the one that originally came with the tape recorder.

(2) As the signal current is fed to the head; the high-frequency bias current is supplied simultaneously to the head (fig 3-6). The residual magnetization of the tape is accomplished by passing the signal current, plus a high-frequency bias current, through the recording head winding. This technique is referred to as direct recording.

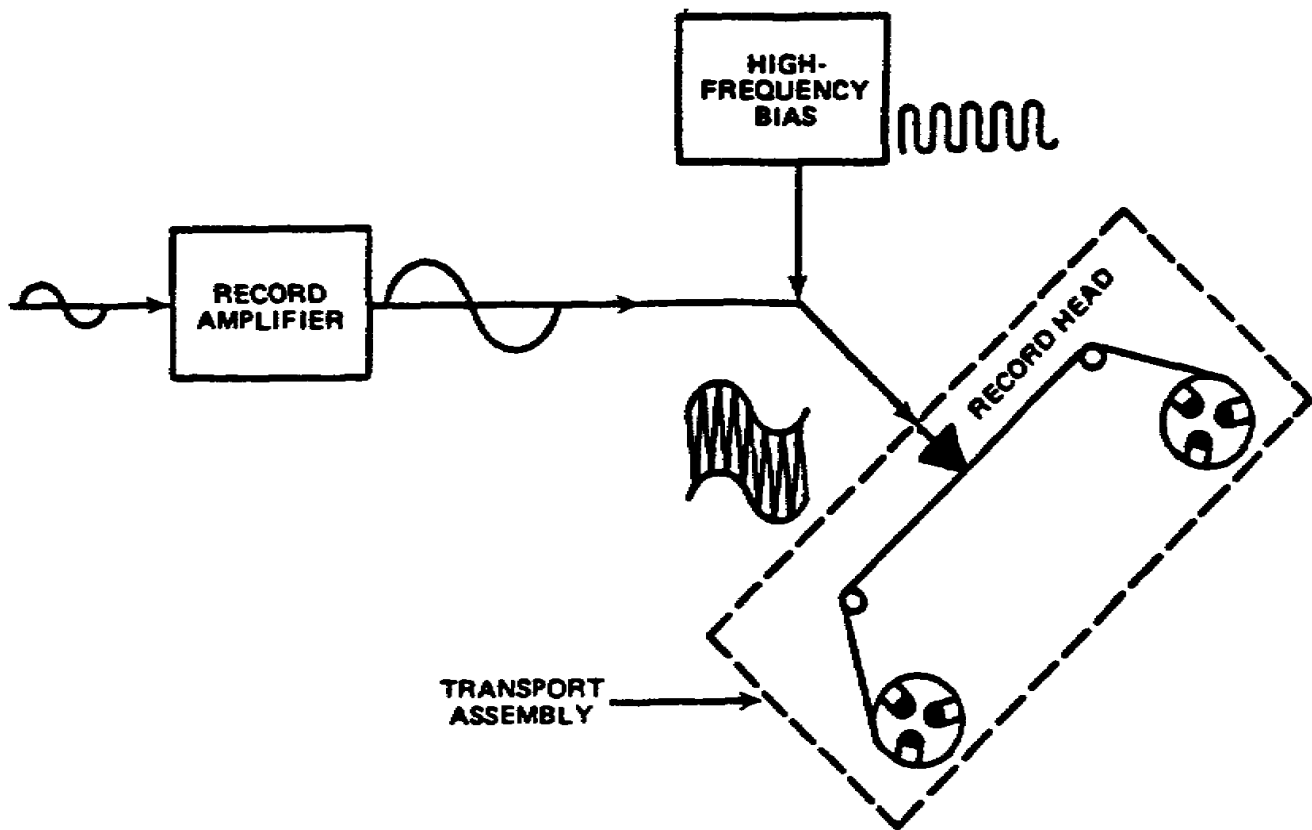


Figure 3-6. Recording with high-frequency bias

(3) The high frequency of the bias oscillator serves to activate the head over the linear portion of its magnetization curve. The linear operation puts the audio signal in a magnetization area for the most faithful recording. If, however, the bias signal is increased until the head is saturated, the linear operation is disturbed. The final magnetization produced in the tape is determined by the last flux encountered close to the trailing edge of the gap as the tape leaves the gap area. For this reason, the length of the recording gap is not as critical, within limits, for recording heads as it is for reproducing heads. The recording heads usually have a gap in the range of 0.0005 to as much as 0.001.

e. Certain features of the playback (reproduce) head are required to provide full response to the audio frequencies. One requirement is that the head gap be very narrow; that is, 0.0001 inch or smaller. A large number

of turns of wire is required in the winding since the head must be sensitive to the changes in flux recorded on the tape. The playback head functions in an opposite manner to the record head; that is, the tape induces a flux into the head core. The flux passing through the core induces a voltage into the winding, causing current in the associated circuit. This signal current is amplified by the playback amplifier for operation of speakers, headphones, or other devices. The playback head is of prime importance in the faithful reproduction of a recorded signal. For example, if we assume that a head is good mechanically, and it is playing back a signal which has all frequencies recorded with equal magnitude, we will find that the higher audio frequencies will produce a greater voltage output.

(1) An inherent characteristic of a playback head is that the rise in output is proportional to the rise in frequency response. However, remember that although a new head may have a narrow gap, as the head wears, the gap becomes wider, and as a result, the high-frequency response drops off.

(2) Also, along with gap width, the definition of the edge of the head must be smooth to produce high frequencies. If the edges of the gap are not straight and sharp, the gap behaves magnetically as though it were much wider than its physical dimensions.

f. Other factors which affect the frequency response of the head are tape speed, smoothness of the tape, pressure of the tape against the head, and quality of the tape. The tape speed is important because the more rapidly the changes in flux are drawn across the head gap, the stronger the voltage induced into the head gap, and the stronger the voltage induced into the head windings. This added strength, in turn, gives improved frequency response to the recorded signal. You can understand this condition if you consider that a slow moving tape causes the head to see an average change in the flux and not each small change, which is necessary to reproduce high frequencies. Smoothness of the tape and tape-to-head contact are directly related in their effect on frequency response as well as voltage output. If the tape is rough, the magnetic particles are not maintained constantly closed to the head, which is necessary to induce a smooth flow of flux variations. The rough spots or portions of the tape move the particles farther from the head and cause weakening of the flux changes; thus, the high frequencies are lost. Carrying this through further, you can understand that the same losses are prevalent if the pressure holding the tape against the head is weak.

Learning Event 2:

DESCRIBE AND IDENTIFY MAINTENANCE PROCEDURES FOR PROPER OPERATION OF AN AUDIO TAPE RECORDER

1. Electronics. Typical electronic circuits used in tape recording are indicated in Figure 3-7. There are certain refinements as dictated by performance requirements. Normally, the higher the frequency response required, the better the overall quality of the circuit components. Even though the record head requires very little drive power, the need for bias injection, impedance matching, and possible preemphasis makes it important to use the correctly

designed amplifiers in the recorder. In recorders, there is a requirement for voltage equalization of frequencies in the output. Earlier we said that the higher the frequency, the more the voltage output; for the lower frequencies, the opposite is true. Therefore, the very weak, low frequencies must be boosted. It is not enough to increase the gain of the amplifiers. The problem is to boost the low frequencies and limit the high frequencies. In most instances, it is sufficient to add RC networks to the input signal path of an amplifier. To attenuate the high frequencies, RC network values are selections that result in bypassing a major portion of voltage of the higher frequencies to ground. The reduction of the higher frequencies input voltage of an amplifier results in a relative boost of the lower frequency voltage. Frequency-selective feedback circuits between amplifier stages may also be used to equalize the output voltages of the high and low frequencies. Many variations of equalization circuits are used in both playback and record amplifiers.

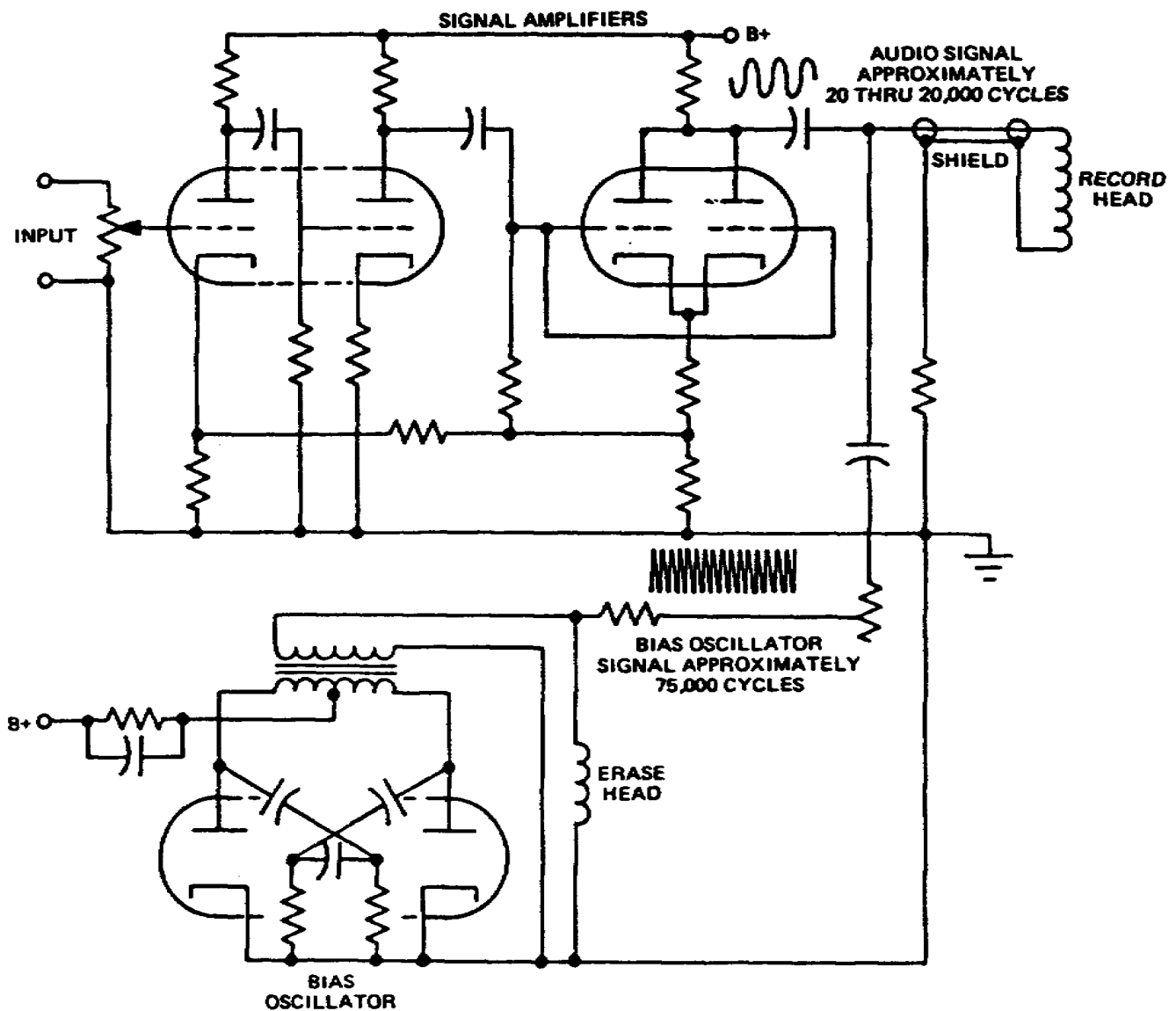


Figure 3-7. Typical record and bias oscillator circuits

2. Trouble diagnosis. To diagnose troubles in a tape machine, you need to remember that a combination of features can cause trouble. In a tape machine, you have a group of mechanical functions as well as the various electrical circuits. Indications obtained from the electrical circuits point to most of the troubles. These troubles may or may not be in the mechanical mechanism, but you must "read through" the troubles to make your diagnosis. Once you detect a malfunction, you should look immediately for the cause; however, a quick mental reference to the most common troubles and their causes should speed your diagnosis.

3. Variations of speed. Identifying "wow" and "flutter." The word "wow" is used to describe a slow variation of speed, whereas, "flutter" describes a fast variation of speed. If the speed is consistently wrong, the audio signal is off pitch. This condition is easily recognized with music but can be difficult to determine with spoken words.

a. A "wow" could be caused by certain faults, such as a slipping belt, a lack of proper pressure on the capstan motor winding damage, or an uneven tape surface.

b. A "flutter," which is much faster, would more likely be caused by something moving at a higher speed. The capstan could be out of round and give this fault with every revolution.

c. Sometimes a tape guide can cause a bouncing action to be repeated at a fast rate. A signal which is consistently off pitch or key may be caused by insufficient or excessive drag on the tape as it passes through the transport system. This could be incorrect action of the supply reel, the pressure pads, tape guides, or improper threading of the machine.

4. Weak outputs. If you have an indication that the output seems to be weak, or that it is not giving full response to the higher frequencies, you might look for electrical trouble. Pause for a moment and think what would happen if you have only a portion of a track passing over a head. We know that the strength of the output signal is relative to the magnetic influx recorded on the tape and the tape speed. You already know that head wear causes a drop in high-frequency response, but if the track or head is misaligned, you will not get full benefit from the recorded signal. You may need to check head wear, track, and head alignment. If these seem to be correct, then check the circuit components. Again, you can solve many of the tape machine problems by "reading" the symptoms and making a logical conclusion.

a. For still another example of a problem, let us assume that when you make an audio recording and play it back, you don't get a signal. There are two ways to start checking. Use a known good machine to check the tape or a known good tape to check the machine. If you determine that the trouble is in the record or playback portion, you should proceed to check out the items in those sections.

b. If the trouble is in the record circuits, you may check the input source or the bias oscillator; either one could cause a failure in the record mode.

c. If the bias oscillator is not working and the machine uses this same signal to erase the tape, a recorded tape would not be erased prior to a new recording. This is one quick check of the bias oscillator.

d. A substitute microphone can be used to make a quick check of the input source. Many recorders have a monitor jack which can be used to determine whether a signal is being fed into the recorder. Most recorders have a record indicator, either a light or a meter, which gives a visual indication of the input. By checking the circuit of the recorder in use, you can, through a process of elimination, narrow the area of trouble to a limited number of stages.

e. From this point, it is necessary to make the more routine checks of tubes and other components. To prevent head magnetization, do not check the continuity of heads with an ohmmeter.

f. The following check list is suggested for locating the cause of poor high-frequency response due to head problems.

(1) Check azimuth alignment with an alignment tape.

(2) Check for tape skewing which seems to occur simultaneously with amplitude fluctuations.

(3) Check to be sure the head meets the tape squarely.

(4) Check for stability of the tape path in its guides.

(5) Check for foreign deposits, nicks, or gauges on the head surface.

(6) Check for "breakthrough" in the head gap. A magnifying glass or microscope is helpful.

(7) Check for uneven wear.

(8) Replace the head if necessary.

4. Playback problems. A trouble in the playback circuits is most readily found by using a known good tape for playback. With some machines you have an intermediate output which can be checked to determine whether or not the signal is reaching a given point in the machine.

a. Some machines have a visual output indicator; if you have this type, you know that all circuits are good up to a stage prior to the power output; here, all but the last stage could be eliminated as the source of trouble.

b. In all cases, it is a matter of taking logical steps toward localizing the trouble to an area, to a circuit, and finally, to a component or components.

Lesson 3
PRACTICE EXERCISE

1. Erasing and recording are the two main functions of which of the following?
 - a. TV monitor
 - b. Camera chain
 - c. Tape recorder
 - d. Video selector
2. What are tape handlers?
 - a. People who have a degree in handling tapes
 - b. A term used to designate machines designed for fast start-stop operation
 - c. A machine designed to repair tape and play it back for proper operation
 - d. A term used to designate machines designed for automatic rewind
3. What is the purpose of the tape guide?
 - a. To guide the tape at a constant speed
 - b. To guide the tape to the tension idler
 - c. To permit vertical variation of the tape
 - d. To align the tape with the heads
4. How is a tape erased if the erase head is constructed of a single magnet?
 - a. By magnetic loss
 - b. By magnetic oscillation
 - c. By magnetic flux
 - d. By magnetic current
5. What do you do after a malfunction has been detected?
 - a. Report it to your supervisor
 - b. Look for the cause
 - c. Reduce the input voltage
 - d. Change the fuses
6. Which of the following statements describe the word "flutter?"
 - a. A broken audio signal
 - b. Moderate variation of speed
 - c. A fast variation of speed
 - d. A slow variation of speed

LESSON 4
DESCRIBE AND IDENTIFY THE PRINCIPLES OF RADIO AND
LINE TRANSMISSION, AM/FM CHARACTERISTICS, STEREO PHASE
PROBLEM, AND THE ELECTRONIC REQUIREMENTS OF RADIO RECEIVERS

TASK

Describe and identify the principles of radio and line transmission, characteristics of AM and FM stereo phase problems and the electronic requirements of radio receivers.

CONDITIONS

Given information and illustrations relating to principles of radio line transmissions, AM and FM characteristics, stereo phase problems and electronic requirements and radio receiver.

STANDARDS

Demonstrate competency of the task skills and knowledge by correctly responding to 80% of the multiple-choice test covering principles of radio line transmission, AM and FM characteristics, stereo phase problems, and electronic requirements of radio receivers.

REFERENCES

None

Learning Event 1:

DESCRIBE AND IDENTIFY THE PRINCIPLES OF RADIO AND LINE TRANSMISSIONS

1. Transmission of sound. Radio communications include transmission of signals through space to a point of reception from a point of origin not connected by wires. This is accomplished by the use of microphones to convert sound waves into patterns of electrical energy. This energy is amplified and modulated by transmitting apparatus and broadcast on radio frequencies into the air. At the point of reception, the electrical patterns are converted by sound waves, which emerge from the loudspeaker.
2. Modulate. To modulate means to regulate or adjust within a communication system, modulation has three very important functions.
 - a. It converts electrical signals from information; it sends multiple channels of information over one communication line (multiplexing) and it makes radio transmission possible.

b. A good example of a single amplitude modulated system is the fuel-level indicator system used in most cars. The fuel-level (the information) regulates the amplitude of an electrical current which is then transmitted to an indicator on the dash-board panel. Thus the current is said to 'carry' the information and is therefore referred to as the carrier.

c. AM adds range to a signal in the radio frequency range. The audio information in this procedure is identified as a modulating signal; the radio frequency signal is called the carrier. The purpose of the carrier is to get the message delivered. In other words, the carrier, as its name indicates, carries the information to the receiver from the transmitter. The amplitude of the carrier signal varies as the information varies (fig 4-1).

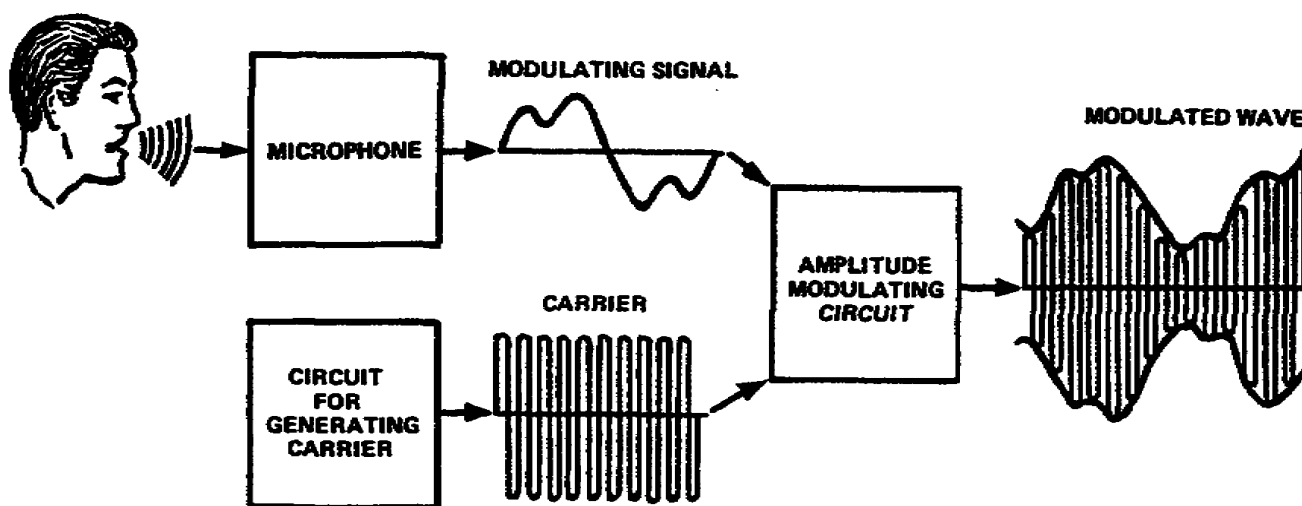


Figure 4-1. The amplitude modulating process. A modulating signal in the audio frequency range is imposed upon an RF carrier signal. The result is the modulated carrier signal

d. We've discussed two signals, one being the modulation signal, the other the carrier signal. These signals combined function at the carrier frequency. These signals are not alone when transmitting a modulated carrier, because when two electrical signals are combined they produce other signals. This process is called heterodyning, and as a result we get two other signals. One is developed when the carrier signal is mixed or added to information or intelligence frequency, and is called the upper sideband frequency. If one of these signals are deleted then what is remaining is called the lower sideband frequency.

e. If these three frequencies are combined (upper and lower sidebands and the original carrier) they form what is known as the modulated carrier signal. If a single frequency for the modulated signal changes, then there will be a pair of sidebands created for every new frequency. When more sidebands are added to the carrier, the modulated signal needs more space in which to operate in the broadcast band.

3. Heterodyne Process. Figure 4-2 is a block diagram of a superheterodyne radio-receiver. This receiver produces a carrier at a new frequency, keeping the information being transmitted unchanged.

a. To help you understand how the superheterodyne radio works, look at the section of the radio in which all of the tuning and station selection occurs (consists of the RF amplifier, the mixer, and the local oscillator). This section of the receiver receives the signal being broadcasted, heterodyne this signal with the one that is produced in the local oscillator and a third signal is produced called the Intermediate Frequency (IF) signal. This IF signal is processed through the radio and soon the original broadcasted information is heard coming out of the speaker.

b. Figure 4-2 illustrates two carrier signals being mixed in the superheterodyne system (receiver). F_1 and F_2 will be heterodyned in the mixer block of the receiver, and the result is the production of four signals. They are: F_1 at 1.5 MHz, F_2 at 1 MHz, the sum of the two signals ($F_1 + F_2$) or 2.5 MHz, and the difference of the two signals ($F_1 - F_2$) or 0.5 MHz. If, however, the incoming signal at F_2 was modulated, then both the sum and the difference signal would contain modulation.

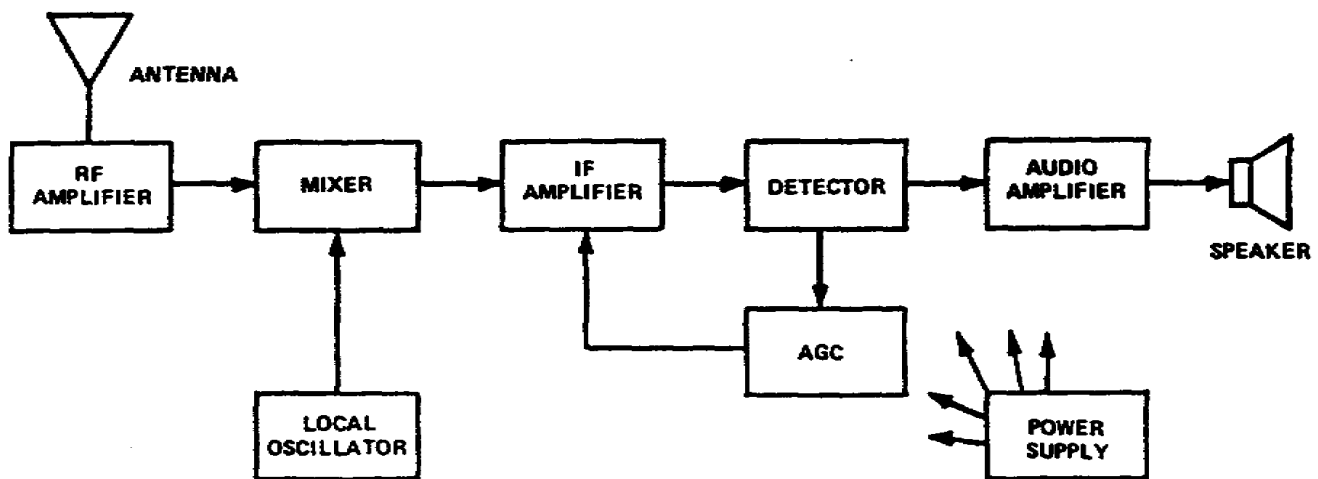


Figure 4-2. The heterodyning process produces four signals through the action of the mixer stage

4. AM's disadvantage. AM's biggest disadvantage, to be discussed further in the next learning event, is that electrical discharges in the air allows the carrier to be amplitude-modulated. As a result the listener hears interference and static and very often noise will override the modulation and interrupt the broadcast signal rather than the amplitude. The limiter block in the receiver cuts off any and all amplitude modulation intelligence upon receiving a frequency modulation signal.

Learning Event 2

DESCRIBE AND IDENTIFY THE CHARACTERISTICS OF AM RADIO

1. AM radio signal. The AM signal is one of the first kinds of transmission of radio signals. The information being broadcast by the station is varied in step with the amplifier of the transmitted signal. This type of system is what we know today as the superheterodyne radio.

a. The superheterodyne radio has several particular functions (fig 4-2). All of the functions are similar regardless of the components used in the radio. Therefore, whether the radio was a transistor solid-state or a vacuum-tube type, they both use the same functional diagram. We can go on to say that the electronic signal received from the transmitting source or station are processed the same whether the radio is transistorized or vacuum tube.

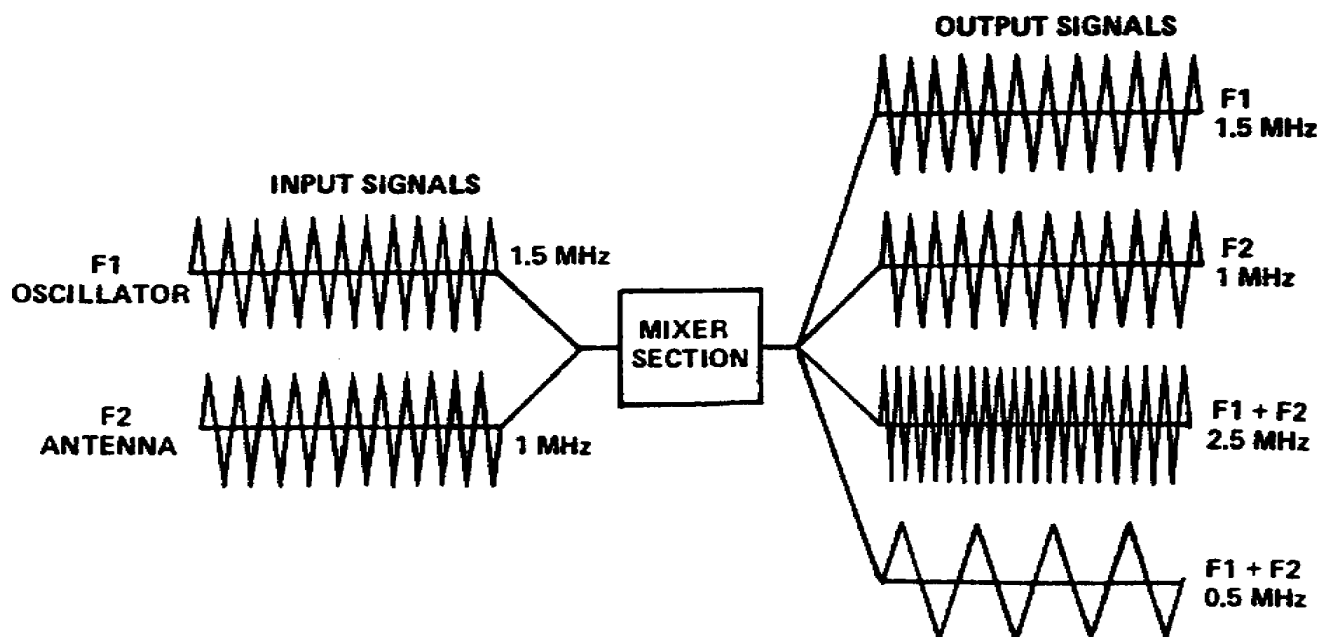


Figure 4-3. The AM radio block diagram

b. The AM superheterodyne radio works by a transmitted signal which is picked up by the antenna, processed through the set to the speaker as follows:

(1) The main purpose of the antenna is to pick up a broadcast signal and take that signal into the receiver for processing into sound waves.

(2) The "radio frequency amplifier" does what its name says. This amplifier is designed to operate in the radio frequency range. The amplifier provides for tuning or selecting a specific frequency and it amplifies the signal received in this frequency. The output goes to the mixer block.

(3) The "local oscillator" produces an electronic signal of its own. This signal is sent to the mixer block and is tunable. The main purpose of this block is to provide the electronic signal that is generated in the radio receiver. The electronic signal will mix with the signal selected by tuning elements in the RF amplifier. Newer models have a single knob that will allow for the tuning of the RF amplifier and the local oscillator at the same time.

(4) The mixer receives signals from the amplifier and the local oscillator. These signals are then mixed together electronically and as a result, there is a third signal produced. This third signal is known as the IF, or Intermediate Frequency signal. The IF signal operates on a frequency 455KHz for the AM radio. The IF amplifier block processes the signal that contains the same information as the receiver from the broadcast station, along with a signal known as the carrier.

(5) The "IF" or "Intermediated Frequency" is the output frequency from the mixer. This frequency is normally a fixed frequency where the superheterodyne receiver is concerned. Because the IF amplifier can be tuned for excellent performance, it is easy to acquire high gain and optimum selectivity.

2. AM carrier transmission. So far the radio we've been discussing has processed a signal containing two parts. One part consists of the intelligent information such as voice or music and the other part is the carrier. As stated previously, the carrier carries the information from the transmitter to the receiver at a certain frequency (each broadcast station operates at its own carrier frequency).

a. After the carrier transmits the information to the receiver, the carrier itself is processed along with the information through the mixer. This operation produces another carrier at the IF frequency.

b. This new carrier has included in it the information that is sent out on the broadcast station's carrier. Also, the intelligence contained in the IF carrier is sent through the IF amplifier to the "detector."

c. The carrier, after this process, is not needed for any reason; therefore, the radio acts as though this signal no longer exists. The detector's job at this point is to separate the carrier from the information, thus sending the information portion to the audio amplifier.

d. The input of the "audio amplifier" is designed to accept a tiny electrical signal. The electrical design of this block is able to amplify the electronic signal and apply enough power to operate the loudspeaker.

e. The "power supply" of all electronic devices are designed to provide certain operating voltages and currents from external sources, i.e., line voltage, battery, etc.

f. The "Automatic Gain Control" or "AGC" will compensate for the different signal strength levels sent to the radio receiver from the transmitter, and at the same time the AGC system monitors the amplification of the detector's signal. At this point the AGC returns a portion of the detected signal to the IF, and if RF amplifiers are either too high or too low, the AGC will act to either decrease or increase the amplification at these stages.

Learning Event 3:

DESCRIBE AND IDENTIFY THE CHARACTERISTICS OF FM RADIO

1. FM radio. The antenna serves the same purpose as it does in the AM radio; however, the "radio frequency" amplifier performs a dual function in the FM radio.

a. The first is to choose the incoming signal and then amplify this signal to a height that will allow the rest of the radio receiver to process it. This amplifier acts the same in an FM receiver as in an AM receiver, although some of the basic circuitry is different because of the different frequencies being received. In other words, the RF amplifier's function is the same in the AM radio and the FM radio, with the only difference being the frequency to be processed.

b. The purpose of the mixer is the same as in the AM radio. It mixes, as its name states, the signal received which contains the carrier signal with the signal from the local oscillator. These signals mixed together produce a third signal called the IF or Intermediate Frequency. This signal contains the IF carrier and operates on a frequency of 10.7 megahertz, and the intelligence found on the broadcast stations carrier.

c. The local oscillator generates a tunable electronic signal. This signal and the incoming signal in the RF amplifier are tuned at the same rate. The main purpose of the local oscillator is to generate and inject a carrier signal into the mixer block to develop the two signals which are required to produce the third signal known as the IF signal. The signal of 10.7 megahertz is produced in the mixer stage, and contains in it the carrier and the intelligence received from the broadcast station. This amplifier amplifies the signal from the very low level at the output of the mixer through several stages in order to get a large signal for the detector.

d. The limiter's functions is to expose the detector to a signal of constant amplitude. This process eliminates unwanted information in the signal, such as static, before it goes to the detector.

e. The purpose of the detector is to remove the broadcast information from the IF signal carrier. The carrier is no longer needed since it has taken the broadcast information through the receiver, in an amplified form and has presented this information to the detector. After the detector has extracted the carrier from the information, the information is sent to the audio amplifier, automatic frequency control, and the automatic gain control.

f. The basic purpose of any receiver is to reproduce broadcast information in the audio range (15Hz to 20KHz) as received from the transmitting station. The audio amplifier amplifies or magnifies this information, after which the information may go through several stages of amplification to produce a large enough signal to be processed by a power amplifier. After the information has been through the power amplifier, it is then sent to the loudspeaker. The loudspeaker transforms the electrical signal information back to sound waves where it is easily heard and understood.

g. The Automatic Gain Control operates the same in FM receivers as it does in AM receivers.

h. The Automatic Frequency Control can determine or sense deviation from a set frequency; its job is to keep the receiver at the desired operations frequency.

2. AM and FM receiver similarities and differences. There are both similarities and differences between AM and FM receivers.

a. Comparing the input of both the AM and FM receivers shows they both have antennas, RF amplifiers, mixers and a local oscillator. These blocks may be called "tuned," and will select one broadcast station's composite-signal.

(1) The composite-signal consists of the carrier and the information. Amplify and mix the composite-signal with the local oscillator signal and it will introduce an IF signal to the IF amplifier. Here again, the composite-signal is amplified and sent to the detector.

(2) In the AM and the FM detector, the information is removed from the carrier, and sent to the amplifier and converted to sound by the loud-speaker.

b. AM and FM differences.

(1) One difference between the two radio functions are the frequencies received and the detection systems.

(2) Another difference is that the FM radio requires an AFC to stabilize the local oscillator, thereby keeping the desired broadcast station tuned in.

NOTE: Study and memorize the basic block diagrams of radios and of televisions. Look for blocks that are common to all systems. Understand the purpose and/or functions of the blocks. You will find by doing this study and memorization, troubleshooting and servicing this unit will be a lot easier.

Learning Event 4:

DESCRIBE AND IDENTIFY PHASE SHIFTING AND DISTORTION PROBLEMS IN STEREO SYSTEMS

1. Importance of alignment. Accurate and precise head alignment is very important in terms of a stereo tape deck.

a. Azimuth misalignment between the record and playback heads, or from a different skewing of the tape during the record and playback modes, will result in phase shifting between channels. Because of this shifting, compatibility and interchangeability are much harder to obtain for stereo tapes than for mono tapes.

b. Therefore, this type of distortion is more evident when reproduced on a monophonic receiver. Keep in mind that monophonic receivers basically reproduce the sum of the two channels. Any phase shifting between these two channels differs with frequency, resulting in partial cancellation and reinforcement over the gamut of frequencies being reproduced. The end result can have a disastrous effect on the quality of the reproduced sound. This also means the stereo transmission is no longer compatible with monophonic reproduction when such errors exist.

2. Precise adjustment. Precise azimuth adjusting is required for reel-to-reel and stereo tape recorders. Earlier cartridge stereo systems did not provide for a tape-guide height adjustment, and the arrangement of the tape path allowed considerable "creeping" up the guide posts. More recent tape cartridges provide adjustable guide height as well as head adjustment. Some even have an additional guide post installed prior to the original input guide for the tape entering its final path across the head for a more rigid and flutter free state with just standard tension.

3. Aligning stereo head. Using a fulltrack monophonic alignment tape is a good way to align a stereo head. This allows excellent alignment of the two-head stereo assembly which receives equal amplitude and identical phase from the two tracks at the reference frequency on tape.

Learning Event 5:

DESCRIBE AND IDENTIFY THE ELECTRONIC REQUIREMENTS OF RADIO RECEIVERS

1. Radio receivers. The Federal Communications Commission (FCC) has assigned all radio broadcast stations their operating frequencies. The amplitude modulated band (AM) is assigned 540KH to 1.6MH, and the frequency modulated band (FM) is assigned 88MH to 108MH.

2. Electronic requirements. Radio receivers must meet particular electronic requirements. Among these requirement are sensitivity, selectivity, and fidelity.

a. Sensitivity means how well the receiver picks up or receives the broadcast signal. The higher the sensitivity of the receiver, the better it will pick up (weak) broadcast signals.

b. Selectivity is the ability of the receiver to select or tune into one station and refuse all the rest. In low quality receivers, the selectivity is poor, resulting with the listener hearing more than one station at a time.

c. Lastly, fidelity is how well the receiver reproduces the signal being transmitted with little or no loss of the broadcast signal.

LESSON 4
PRACTICE EXERCISE

1. Which of the following statements best describes modulation?
 - a. Information
 - b. Combination
 - c. Multiplication
 - d. Regulation
2. Which of the following statements best describes the process of heterodyning?
 - a. The combining of two electrical signals
 - b. The separating of two electrical frequencies
 - c. The combining of three frequency patterns
 - d. The separating of three frequency combinations
3. What does the local oscillator produce?
 - a. A mechanical signal
 - b. A sound wave
 - c. An electronic signal
 - d. A sine wave
4. What type of an input signal is the audio amplifier designed to accept?
 - a. An electrical signal
 - b. An electromagnetic signal
 - c. An outgoing signal
 - d. Multiplication signal
5. Which of the following generates a turnable electronic signal?
 - a. Mixer
 - b. IF carrier
 - c. Power supply
 - d. Local oscillator
6. Which of the following keeps the receiver at a desired operating frequency?
 - a. Automatic gain control
 - b. Automatic frequency control
 - c. Local oscillator
 - d. Power supply

7. What causes phase shifting between channels in tape decks?
- a. Distorted information
 - b. Azimuth misalignment
 - c. Poor selectivity
 - d. Guide height
8. Which of the following is a good way to align a stereo head?
- a. Use the one-hand tape
 - b. Use the high DC voltage tape
 - c. Use a full track monophonic alignment tape
 - d. Use the low DC current tape
9. The FM band is assigned which of the following frequencies by the Federal Communication Commission?
- | | |
|-----------------|-----------------|
| a. 88KH - 108KH | c. 108KH - 88MH |
| b. 88M - 108MH | d. 88UH - 808UH |
10. Which of the following statements best describes selectivity?
- a. How well the receiver selects its input voltage
 - b. How well the receiver selects its listeners
 - c. How well the receiver selects a frequency over all others
 - d. How well the receiver selects its measuring devices

LESSON 5
DESCRIBE AND IDENTIFY COMPONENTS OF RECORDING SYSTEMS, AUDIO SPEAKERS,
CABLES AND CORDS, AND USES OF BASIC MEASURING EQUIPMENT

TASK

Describe and identify components of recording system, audio speakers, cable and cords, and uses of basic measuring equipment.

CONDITIONS

Given information and illustrations related to recording system components and audio speakers, cable and cords, and uses of basic measuring equipment.

STANDARD

Demonstrate competency of the task skills and knowledge by correctly responding to 80% of the multiple-choice test covering identification of components of recording system, audio speakers, cable and cords, and uses of basic measuring equipment.

REFERENCES

None

Learning Event 1:

DESCRIBE AND IDENTIFY THE COMPONENTS OF RECORDING SYSTEMS

1. Recording system components. Components of recording systems are divided into two basic parts, equalizers, and attenuators.

a. All reproducing and sound recording equipment have something in common, that is, the loss of high frequency response. An equalizer, or compensator, is a device consisting of reactive elements that may be connected into an electrical circuit for the purpose of altering the frequency characteristics of that circuit. More simply, equalizers compensate for frequency distortion in cables, lines or loads, in broadcast audio systems. The basic equalizer is the integrated or the differentiated circuit which you'll find at the receiving end of the cable to acquire low frequency or high frequency attenuation.

(1) Most cables impose a progressive attenuation of the higher audio frequencies; this is shown in Figure 5-1. Therefore, an equalizer is used which imposes a progressive attenuation of the lower audio frequencies.

(2) Although it is impossible to make the frequency response of this system uniform, a good deal of improvement could be acquired by selecting a suitable equalizer circuit with correct component values.

(3) A limitation of the equalizer is the inability to make up or compensate for load changes. Such changes may occur during switching procedures. Therefore, equalizers can be switched in or out of the Load circuit. Also, equalizers have a definite insertion loss, and this loss may be compensated by increasing amplitude. Figure 5-2 shows a typical equalizer configuration.

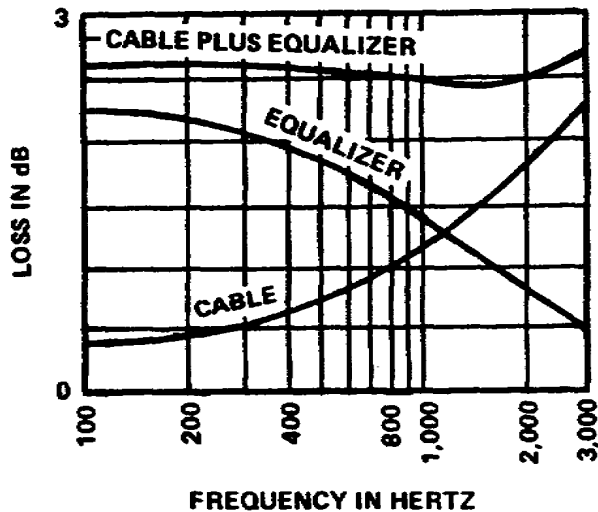


Figure 5-1. Cable, equalizer, and system frequency responses

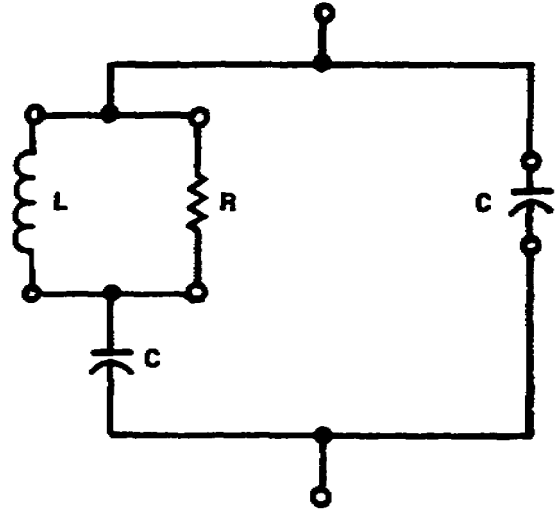


Figure 5-2. Typical equalizer configuration

b. Attenuator. An attenuator is a network designed to reduce the amplitude of a signal. For this reason the circuit is usually passive rather than active. These circuits are beneficial for calibrating or other sensitive measurements.

(1) If the attenuator is well designed, then the amount of attenuation is continuous over the entire range of frequency in the system to be checked. Attenuators pose no reactance; therefore, no phase shift. These circuits are built to handle various input and output impedances; therefore, these impedances must be matched properly or the attenuator will function improperly. Figure 5-3 shows two different passive attenuators made of non-inductive resistors.

(2) Circuit A is called a pre-network attenuator.

(3) Circuit B is called a T-network attenuator. Both circuits function from the audio-frequency range to the VHF spectrum.

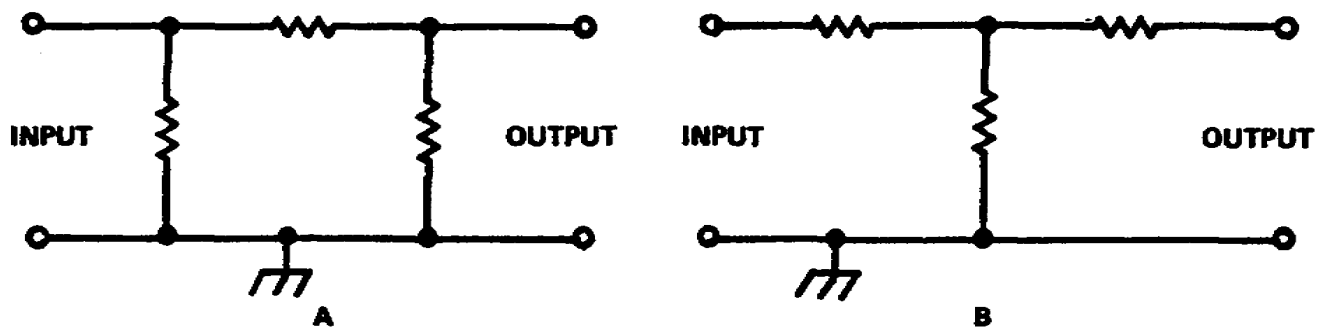


Figure 5-3. Attenuator. Attenuators often constructed from noninductive resistors. Here, two such devices are shown at A the pre-network and at B the T network. These attenuators are for use in unbalanced circuits

(4) However, from UHF and above the resistors begin showing inductive reactance. This happens because the wavelength is so short that the leads are quite long electrically; therefore, the attenuators no longer perform the function intended for them. Attenuators must be especially designed to suit the short wavelengths of the VHF's. These circuits must be physically small.

2. Attenuation. Attenuation is the decrease in amplitude of a signal between any two points in a circuit, usually expressed in decibels. Attenuation is the exact opposite of amplification and can be defined for power, current, or voltage. Occasionally attenuation in a particular circuit is sometimes expressed as a ratio.

a. As an example, the loss of signal in amplitude from say plus or minus 5 volts peak to plus or minus 1 volt peak is an attenuation factor of 5. This loss in decibels may be calculated using one of the following equations:

$$\begin{aligned} \text{ATTENUATION (db loss)} &= 10\text{Log}_{10} \times \frac{p_{in}}{p_{out}} && \text{"or"} \\ &20\text{Log}_{10} \times \frac{v_{in}}{v_{out}} && \text{"or"} \\ &10\text{Log}_{10} \times \frac{I_{in}}{I_{out}} \end{aligned}$$

b. Keep in mind that attenuation is the opposite of amplification. If the amplification factor is X db, then the attenuation factor is -X db.

3. Attenuation versus frequency characteristic. The attenuation versus frequency characteristic of a circuit is the amount of loss through the circuit as a function of frequency. The function is usually shown with the amplitude in decibels relative to a certain reference level on the vertical scale, and the frequency on the horizontal scale. Figure 5-4 illustrates the attenuation versus frequency characteristics curve for an audio low pass filter. This low pass filter was designed for use on an intelligibility enhancer for a voice-communications circuit.

a. Various devices are used for precise adjustments of the characteristics of attenuation versus frequency.

b. For instance, in high-fidelity recording equipment the equalizer is often used instead of the bass and treble controls to help obtain the desired audio response.

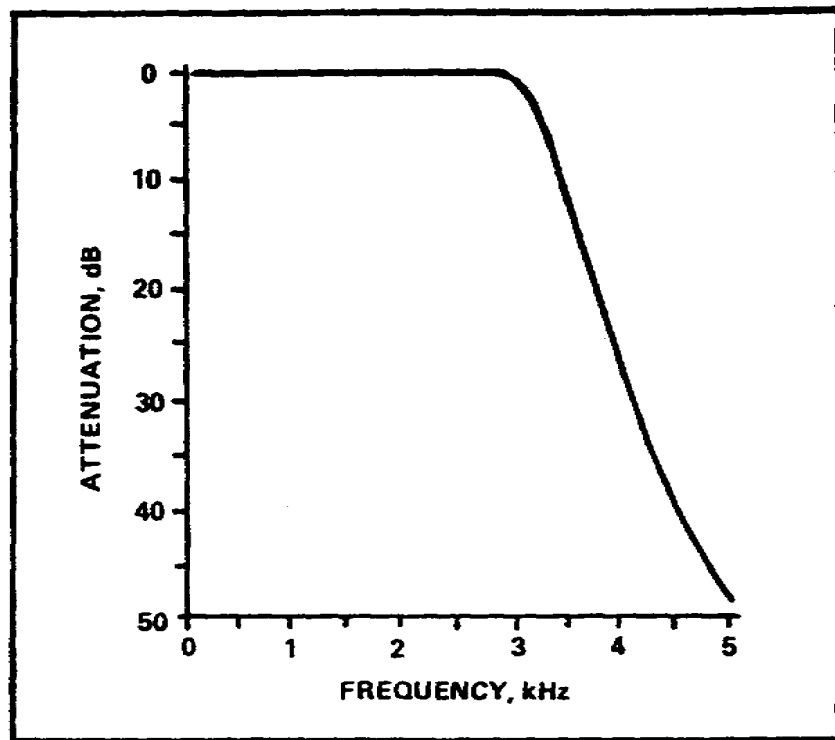


Figure 5-4. Attenuation. Attenuation versus frequency characteristics of a lowpass filter that might be used for communication purposes

Learning Event 2:

DESCRIBE AND IDENTIFY THE COMPONENTS AND FUNCTIONS OF A TYPICAL AUDIO SPEAKER

1. Speakers. Speakers transform energy from one form to another; i.e., electrical to mechanical energy. The speaker will convert the audio signal sent to it from the amplifier and change it into a instantaneous pumping motion. This motion (fig 5-5) is strong enough to transport air in vibrating patterns of waves that the ear hears as sound.

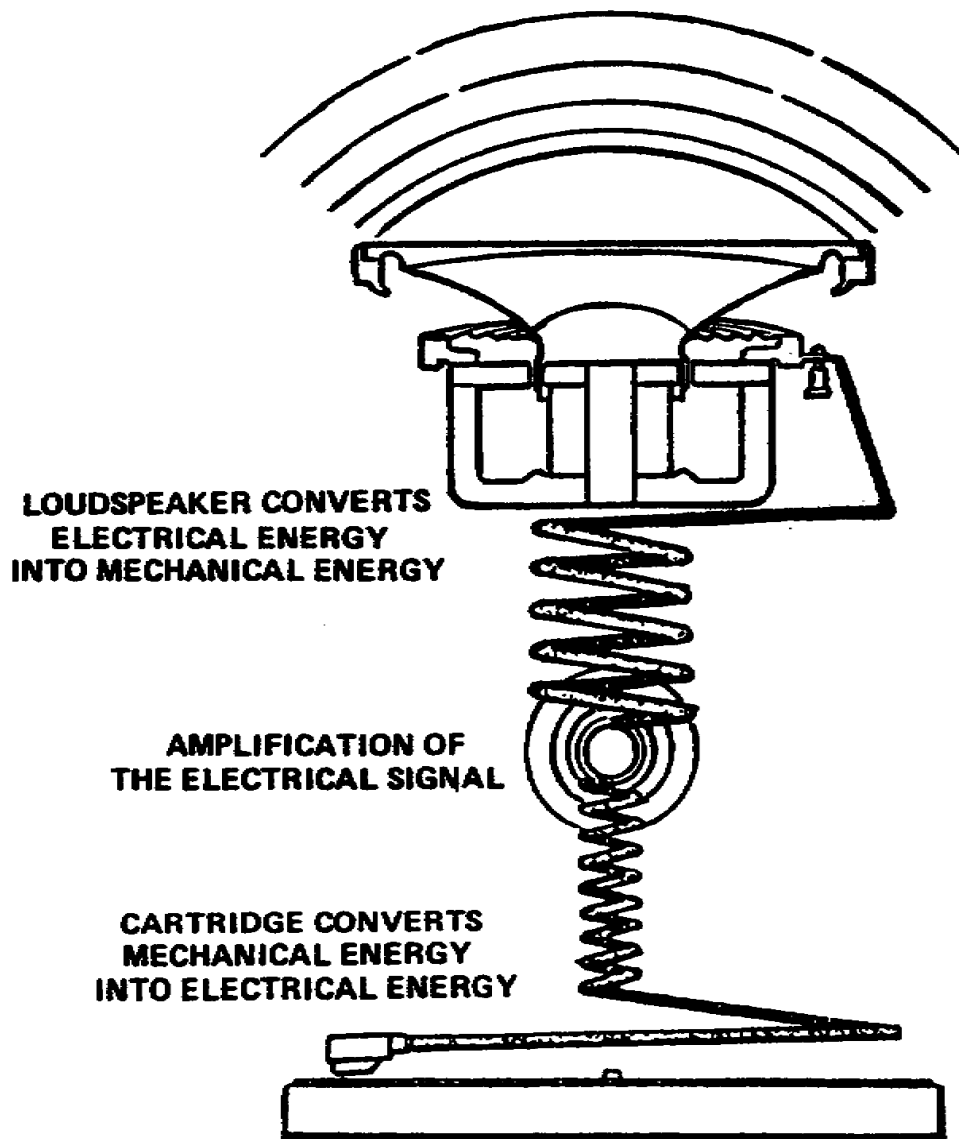


Figure 5-5. Speaker pumping action creates air vibrations we hear as sound

a. Drivers are the part of the speaker that actually move air. Drivers can be designed to get superior performance in the lower octaves (bass) or higher octaves (treble), usually not both. Most all speakers are basically AC electric motors functioning linearly instead of by rotation. Speakers have wire coils or another form of an electrical conductor hanging freely in the field of a permanent magnet.

(1) Electricity flows through the conductor and creates a magnetic field around the conductor with a strength equal to the amount of electricity moving through it.

(2) If the current changes directions, the north-south poles of the magnetic field reverses themselves with each current reversal. A permanent magnet's polarities remain constant.

(3) The law of magnetism states that opposite magnetic polarities attract, and like polarities repel each other. As a result, when alternating current in the form or configuration of an audio signal passes through the coil conductor, it interacts with the lines of force emanating from the permanent magnet. The conductor is alternately attracted and repelled, so forward and backward movement is created in accordance with the audio signal.

b. In most speakers the conductor is a wire coil and is attached to a cone that moves with it, pushing and pulling at the adjacent air surrounding it. Basically, you have just learned the classic operating principle of most speaker designs (fig 5-6).

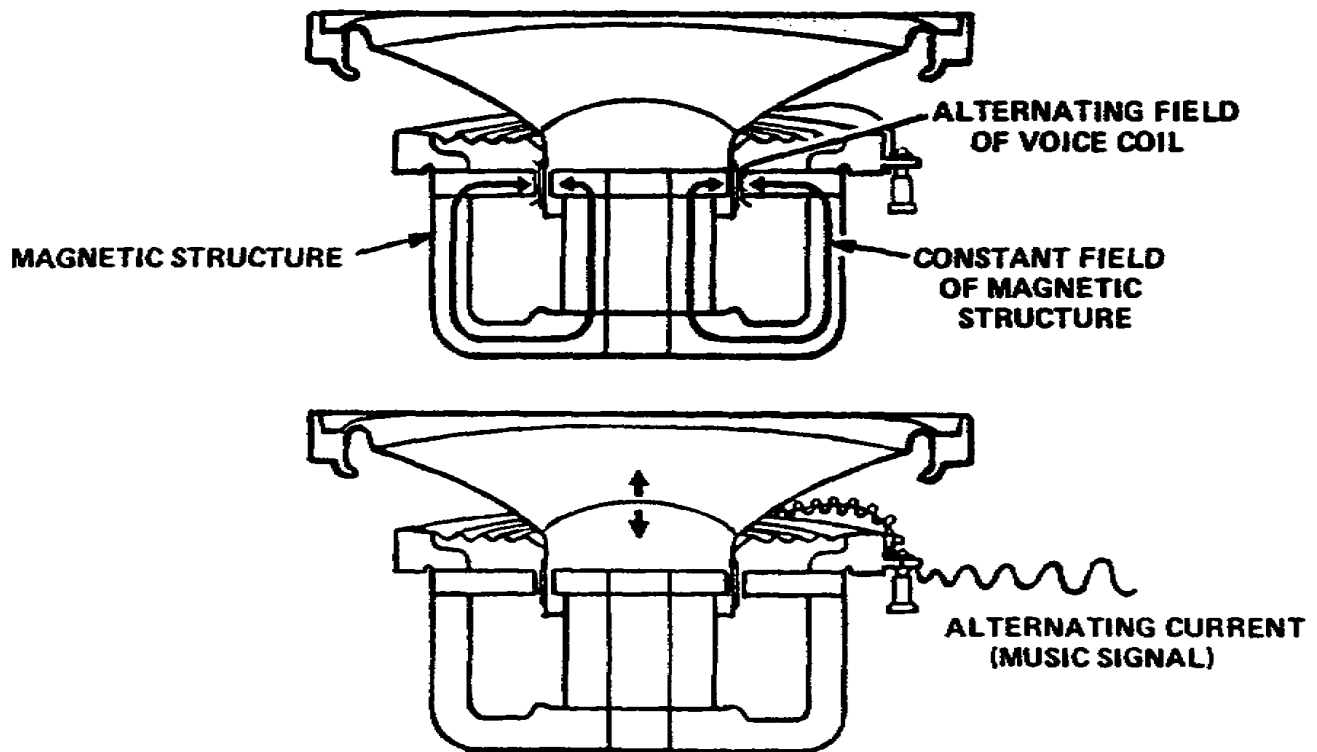


Figure 5-6. Changing field of voice coil causes oscillating movement relative to constant field of magnetic structure creating sound

2. Impedance. Impedance is the resistance to the passage of alternating electrical current. In the past, high-fidelity components were not as standardized as they are today, thus, making the input impedance of a speaker and the output impedance of an amplifier fairly critical to ensure they match. Today, most equipment is rated uniformly at an average of 8 ohms. Eight ohms is said to be average because impedance varies with the frequency of audio signal.

a. Even though impedance matching is basically a minor problem nowadays, there are some speaker systems with other ratings, like 4 ohms. Low impedance-rated speakers may afford you some trouble when you hook them up with the average 8 ohm speakers.

b. Normally, two sets of speakers are connected in parallel. The pair of 8 ohm speakers connected in parallel presents a 4-ohm load to the amplifier. An 8-ohm speaker and a 4-ohm speaker present the amplifier with 3 ohm average impedance.

CAUTION: The output stage of a transistorized amplifier can burn out if presented with a too low of an impedance load.

3. Damping factor. Damping factor is the ratio of its own internal impedance to the impedance present to the amplifier by an external load. The damping factor will increase as the load impedance increases compared with the internal impedance. Transistorized amplifiers possess fairly high damping factors. This is useful because it helps to damp excessive speaker oscillation which gives you a much better response to transient signals and a cleaner sound.

Learning Event 3:

DESCRIBE AND IDENTIFY THE TYPES OF CABLES AND CORDS USED IN RADIO/TELEVISION STUDIOS AND USES OF BASIC MEASURING EQUIPMENT

1. Cables and Cords. A cable is any group of electrical conductors bound together. A cable may consist of only two conductors, such as the coaxial cable familiar to RF design; or it may be made up of several individual conductors protected with its own layer of insulation (fig 5-7). Cables are widely used in electronic and communications systems. As an example, many telephone networks are completed with the use of cables, and in faraway areas, cable is the only means of television reception with the exception of satellite transmission.

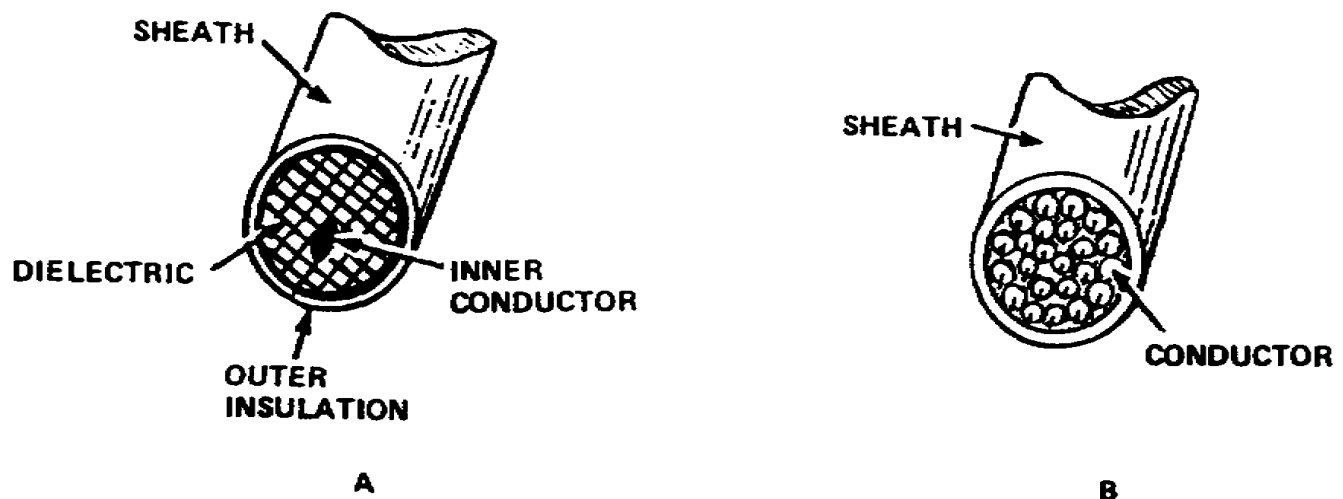


Figure 5-7. Two kinds of cable. At A, a coaxial cable with two concentric conductors. At B, a multi-conductor, unshielded cable

a. Coaxial cable is a two-conductor cable consisting of a single center wire surrounded by a tubular metal shield. Most metal shields are braided and insulated from the center conductor by polyethylene. Some coaxial cables have air dielectrics with the center conductor being insulated from the shield by polyethylene beads or spiral winding.

b. Coaxial cable is made in several diameters and characteristic-impedance values. A "hard line" cable is a low-loss, well-shielded coaxial cable, with an outer conductor of solid metal tubing.

c. Coaxial cable is easy to install; may be run next to metal objects, and installed underground without affecting the loss of performance. Many coaxial cables have greater loss per unit length than two conductor lines.

2. Radio-Television Cords. A cord is simple, durable cable, with two or three conductors, used to transfer electrical current to an appliance or device. The more familiar types of cords are the two and three conductors, 117 volts utility cords (fig 5-8).

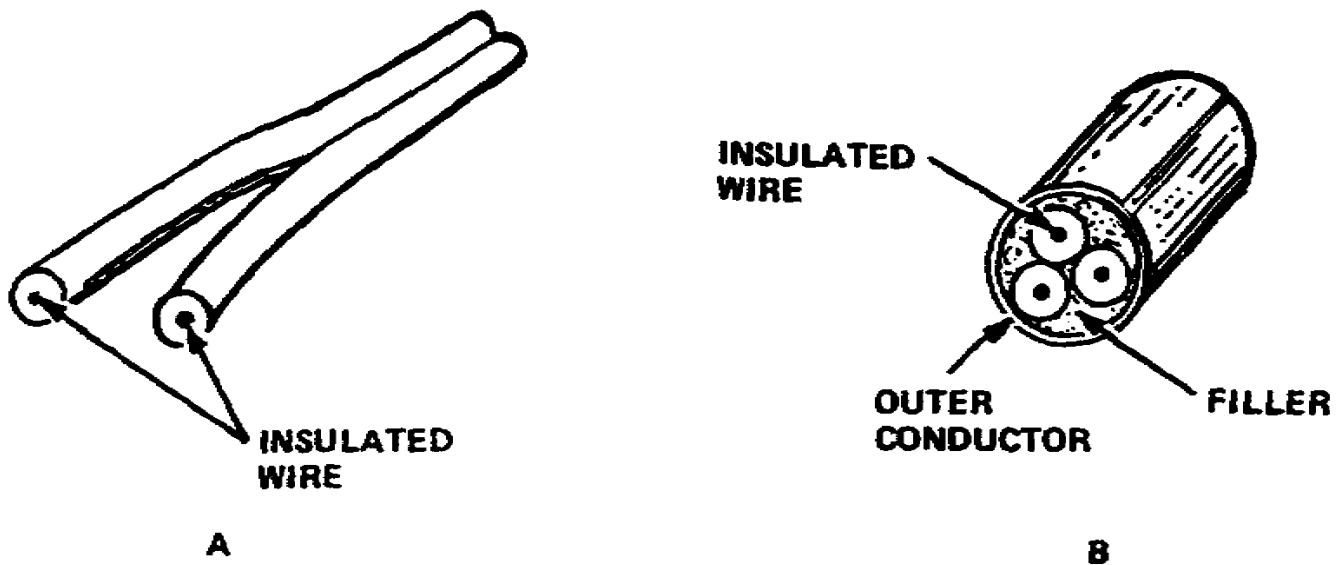


Figure 5-8. At A a two-conductor cord. At B a common three-wire utility cord

a. Basically, cords are not appropriate for transferring alternating current above the audio frequency range. This is because of dielectric and conductor losses.

b. Only cables designed especially for radio frequencies should be used for such application.

3. Basic measuring equipment. A technician uses basic measuring devices, such as oscilloscopes or multimeters, to measure actual working values or signals in a radio or television set, as well as for analyzing problems.

a. Turn on device. The first thing you would do to start the repair process is turn the device on and watch, listen, and smell trouble or malfunctions. After the initial diagnosis of which block or blocks of the radio are malfunctioning, refer to the manufacturer's manual, Technical Manual or Field Manual for schematics of the equipment you are troubleshooting.

b. Read schematics. To assist you on the schematic diagram, both the operating voltage values and typical waveforms should be printed. Also included on the schematic diagrams are the test points to measure signals and exactly how the equipment is wired.

c. Use test equipment. As a technician you use test equipment to measure voltage, current, resistance, or signal waveforms, then compare these values to the values indicated on the schematic diagram. If some values do not agree with the manufacturer's manual, Field Manual or Technical Manual (schematics), then you have probably located the trouble in your equipment. This is the point of troubleshooting where your knowledge of the circuitry coupled with the information obtained by using the test equipment plays a specific part in locating the malfunctions.

LESSON 5
PRACTICE EXERCISE

1. Which of the following statements best describes a speaker?
 - a. Transforms equalization into attenuation
 - b. Transforms backward sound into forward sound
 - c. Transforms DC current into AC current
 - d. Transforms electrical energy to mechanical energy
2. Which of the following is a characteristic of a speaker driver?
 - a. Operates a vehicle
 - b. Moves air
 - c. Creates equality
 - d. Reverses current
3. What will happen with a transistorized amplifier if the output stage is presented with a very low impedance load?
 - a. Flash its help light
 - b. Burn out
 - c. Respond better to signals
 - d. Disconnect itself
4. Which statement best describes a hard line cable?
 - a. High loss
 - b. Low loss
 - c. Medium loss
 - d. Wide loss
5. What must you, as a technician, do to start the repair process?
 - a. Ask advice from a friend
 - b. Wait for supervisor to talk to the commander
 - c. Turn equipment on and watch, listen, and smell
 - d. Leave equipment where it is, someone else will repair it
6. What is the purpose of an attenuator?
 - a. To reduce the switches of two circuits
 - b. To reduce the driver of the circuit
 - c. To reduce the amplitude of a signal
 - d. To reduce the entire range of DC current

ANSWERS TO PRACTICE EXERCISES

Lesson 1

1. c
2. c
3. d
4. a
5. c
6. b

Lesson 2

1. b
2. a
3. a
4. a

Lesson 3

1. a
2. b
3. d
4. c
5. b
6. c

Lesson 4

1. d
2. a
3. c
4. a
5. d
6. b
7. b
8. c
9. b
10. c
11. c

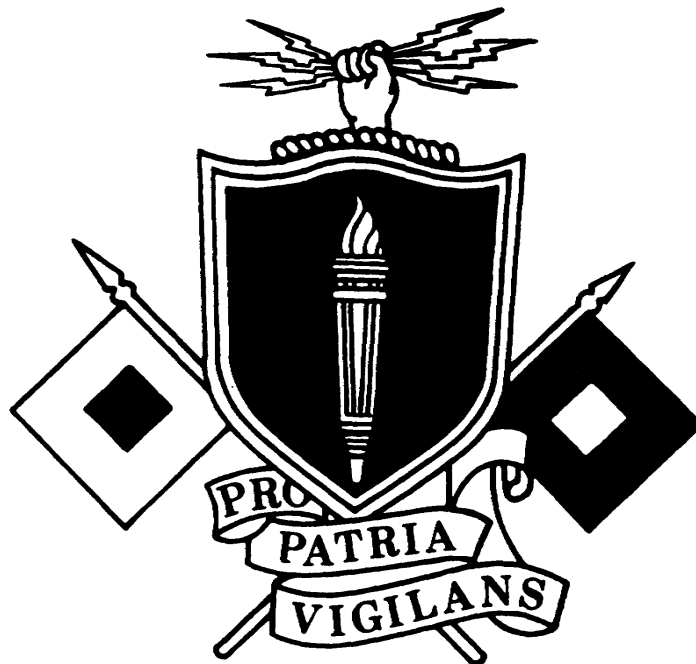
Lesson 5

1. d
2. b
3. b
4. b
5. c

SUBCOURSE
SS 0606

EDITION
8

ANALYZING COLOR VIDEO AND VIDEO TEST SIGNALS



THE ARMY INSTITUTE FOR PROFESSIONAL DEVELOPMENT
ARMY CORRESPONDENCE COURSE PROGRAM

A
I
P
D

READINESS/
PROFESSIONALISM



THRU
GROWTH

US ARMY RADIO/TELEVISION SYSTEMS SPECIALIST
MOS 26T SKILL LEVEL 1, 2 & 3 COURSE

ANALYZING COLOR VIDEO AND VIDEO TEST SIGNALS

SUBCOURSE SS0606

US Army Signal Center and Fort Gordon
Fort Gordon, Georgia

EDITION 8
5 CREDIT HOURS
REVISED: 1988

General

The Analyzing Color Video and Video Test Signals subcourse requires a basic understanding of television electronics, television systems operation, and television transmissions. This subcourse is designed to teach you the knowledge and the basic applications used in color television transmission and television test signals. Information is provided on the fundamentals of color, color transmission, color test signals, and basic television test signals. The subcourse is presented in three lessons, each lesson corresponding to a terminal objective as indicated below.

Lesson 1: DESCRIBE THE FUNDAMENTALS OF COLOR

TASK: Describe the fundamentals of color used in television transmission.

CONDITIONS: Given the information and illustrations relating to the fundamentals of color.

STANDARDS: Demonstrate competency of the task skills and knowledge by correctly responding to 80 percent of the multiple-choice test questions covering the fundamentals of color used in television transmission.

Lesson 2: DESCRIBE THE COLOR BAR TEST SIGNALS

TASK: Describe and identify the four basic color bar test signals.

CONDITIONS: Given information and illustrations relating to the four basic color bar test signals.

STANDARDS: Demonstrate competency of task skills and knowledge required for identification of the color bars signals discussed in this lesson by correctly responding to 80 percent of the multiple-choice test questions covering the four basic color bar test signals.

Lesson 3: DESCRIBE THE BASIC ELECTRONIC TELEVISION TEST SIGNALS

TASK: Describe and identify five basic electronic television test signals.

CONDITIONS: Given information and illustrations pertaining to the basic television test signals.

STANDARDS: Demonstrate competency of task skills and knowledge required for identification of the test signals discussed in this lesson, by correctly responding to 80 percent of the multiple-choice test questions covering five basic electronic television test signals.

This subcourse is designed to provide the reader a good understanding of the fundamentals of color video and the basic applications of video test signals. It is not designed to instruct on equipment repair.

This subcourse supports the following MOS 26T tasks:
STP 11-26T13-SM-TG, September 1985

113-575-0021	Troubleshoot and Repair a Television Receiver
113-575-0038	Troubleshoot and Repair Video Pulse Distribution Amplifiers
113-575-0043	Troubleshoot a Color Television Camera
113-575-0044	Troubleshoot a 3/4-inch Video Cassette Recorder/Reproducer
113-575-0045	Troubleshoot a Television Transmitter
113-575-0046	Troubleshoot a Television Video Switcher
113-575-0049	Troubleshoot a Time Base Corrector
113-575-2040	Perform Functional Check of a Color Television Film Camera Chain
113-575-2041	Perform Functional Check of a Color Television Camera System

113-575-2042	Perform Functional Check of a Color Television Studio Camera Colorplexer
113-575-2043	Perform Functional Check of a Color Television Studio Camera
113-575-2045	Perform Functional Check of a Time Base Corrector
113-575-2047	Perform Functional Check of a Television Transmitter
113-575-3033	Perform Measurement of the Visual and Audio Transmitter Carrier Frequency
113-575-3035	Perform Daily Maintenance of a Television Switcher
113-575-8017	Perform Alignment Check of a Waveform Monitor

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Whenever pronouns or other references denoting gender appear in this document, they are written to refer to either male or female unless otherwise noted.

INTRODUCTION TO ANALYZING COLOR VIDEO AND VIDEO TEST SIGNALS

The Federal Communication Commission (FCC) standards for broadcast television are based on the work of the National Television System Committee (NTSC). The term "NTSC Color" is often used because the specific details of the television transmission system were designed and developed by NTSC. NTSC sets the standards which are used in the United States and in the various countries that use this system.

Once the guidelines were established for black and white and color television transmission, test equipment had to be designed to maintain the specifications of the signal being transmitted. The NTSC joined in collaboration with the Electronics Industries Association (EIA), the Society of Motion Picture and Television Engineers, and the Institute of Electrical and Electronic Engineers (IEEE) to develop various television test signals.

This subcourse explains the fundamentals behind the development of the color signal and how it is transmitted. The subcourse identifies and discusses various applications of the television test signals such as: Color bars, Multiburst, Gray-scale Linearity, Vertical Interval Test, Vertical Interval Reference, and Sin2 Window test signals. The information contained in this subcourse will provide knowledge necessary to enhance your competence in the field of television engineering.

Lesson 1
DESCRIBE FUNDAMENTALS OF COLOR

TASK

Describe the fundamentals of color used in television transmission.

CONDITIONS

Given the information and illustrations relating to the fundamentals of color.

STANDARD

Demonstrate competency of the task skills and knowledge by correctly responding to at least 80 percent of the multiple-choice test covering the fundamentals of color used in television transmission.

REFERENCES

None

Learning Event 1:
DESCRIBE COLORIMETRY

1. General. To learn the color TV system you must have a basic background in the fundamentals of color. The entire concept of color television is based upon how the eyes react to light frequencies. From studies conducted on how people see, it was determined that the color signals would occupy a certain amount of space in the frequency bandwidth for color television. The process of specifying and determining colors had to be accomplished before the color television system could be developed. This is a science in itself and is known as colorimetry.

2. Colorimetry. The science and practice of determining and specifying colors is referred to as colorimetry. The science of colorimetry was especially important to the color engineers who contributed to the design of the present color television system. Since the system had to be designed to reproduce things as they are seen in nature, the characteristics of light, vision, and color were taken into consideration.

a. Colorimetry is a very complex subject. It is not necessary to be an expert colorimetrist in order to understand the takeup of the color picture signal and the way in which it is used in the color receiver. However, a better understanding of

the color television system is attained if the most important fundamentals of colorimetry are known. The principles of color as applied to television are slightly different from those which many of us have been taught in connection with other types of color reproduction.

b. The properties of light and vision must be understood before studying the principals of color. Light is the basis of color and the eye must be able to convey picture sensation to the brain. But the eye has certain visual limits.

3. Limits of vision. The limits of vision are chiefly determined by four factors; intensity threshold, contrast, visual angle, and time threshold.

a. Intensity threshold. This is the lowest brightness level that can stimulate the eye. It is very much dependent upon the recent exposure of the eye to light. When a person enters a darkened room it takes the eye a long time to reach maximum sensitivity. The required time, which is usually about an hour, differs among individuals. When a person returns to a lighted area the time it takes for the eye to reach maximum is very short, actually just a matter of minutes.

b. Contrast. This represents a difference in the degree of brightness and in the intensity between black and white elements of the reproduced picture. The range of contrast should be great to produce a strong picture, with bright white and dark black for the extreme intensity values.

c. Visual angle. As an object is made smaller or is placed further from the eye, the angle formed by the light rays from the extremities of the object to the eye becomes smaller. This angle is referred to as the visual angle. In order for the eye to respond, the visual angle must be such that the image covers a definite area on the retina. If this area is decreased, a point at which the eye could no longer see the object is reached. This principle is used in eye tests. The minimum visual angle is dependent upon the contrast and brightness of the image. For example, an object with sharp contrast can be distinguished at a narrow visual angle, while the same size object with a lower contrast might not be visible.

d. Time threshold. There is a minimum time during which a stimulus must act in order to be effective. This is called the time threshold. If the exposure interval is too short, the rods and cones of the eye do not have time to respond to the image on the retina. The time threshold is also dependent upon the size, brightness, and color of the object. These four factors are all important factors that were taken into consideration in development of the color system for television. Now, light sources must be discussed.

4. Light Sources. To see, we must have a source of light, just as in the process of hearing we must have a source of sound before we can hear. When we speak of light, we usually think of light coming from the sun or the light which is emitted from some artificial lighting source such as electrical light. This type of light is referred to as direct light. Another type of light is indirect or reflected light, given off by an object when direct light strikes it. Direct light falling on an object is either absorbed or reflected. If all the light is reflected, the object appears white. If direct light is entirely absorbed, the object appears black. The larger the amount of light that is reflected by an object, the brighter the object will appear to the eye. In addition, the brighter the light source, the brighter the object will become. This can be demonstrated by casting a shadow on a portion of an object and noting the difference in brightness of the two areas. The portion without the shadow will appear brighter.

5. The visible light spectrum. Light is one of many forms of radiant energy. Any energy that travels by wave motion is considered radiant energy. Classified in this group along with light are sound waves, X-rays, and radio waves. As shown in Figure 1-1, light which is useful to the eye occupies only a small portion of the radiant energy spectrum. Sound is located at the lower end of the spectrum; cosmic rays are at the upper end. Light falls just beyond the middle of the spectrum. Along the top of the spectrum is the frequency scale, and along the bottom is the Angstrom unit scale (fig 1-1).

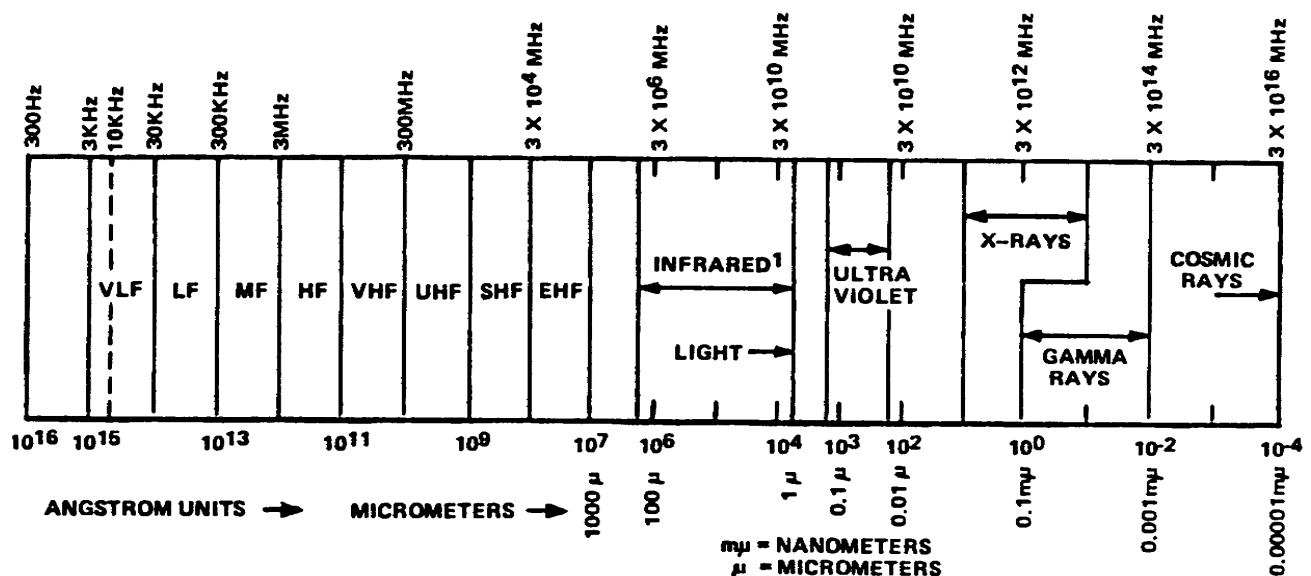


Figure 1-1. Radiant energy spectrum

a. Wavelengths in the region of light are measured in millimicrons. These units are also shown along the bottom of the spectrum in the illustration. Visible light is made up of that portion of the spectrum between 380 and 780 nanometers (fig 1-2). The usable portion of the light spectrum for television falls between 400 and 700 nanometers (fig 1-3).

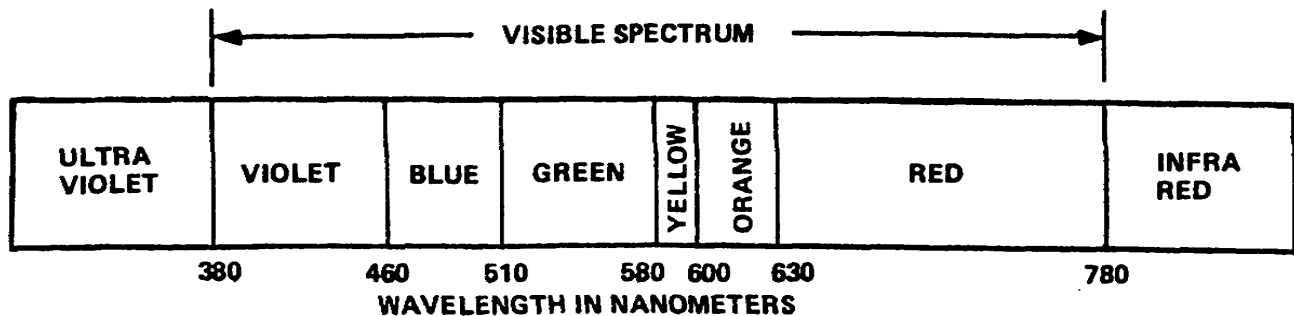


Figure 1-2. Visible light spectrum

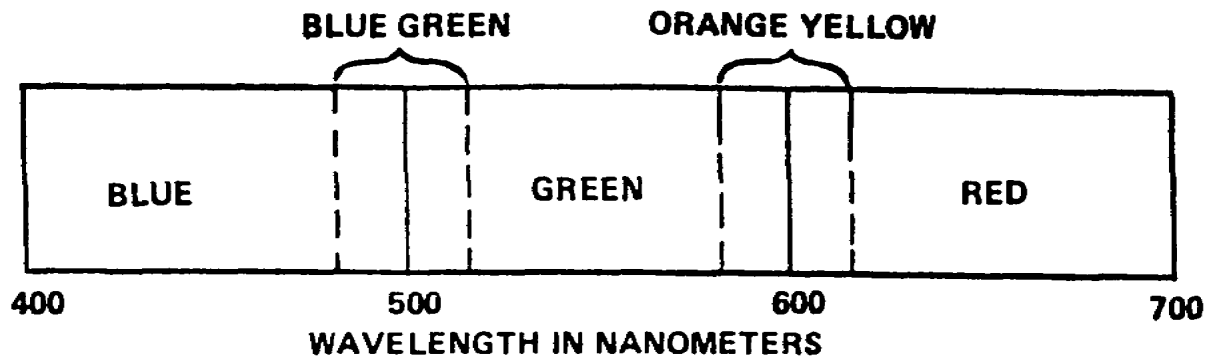


Figure 1-3. Visible light spectrum used for color television

b. When all of the light spectrum from 400 to 700 nanometers is presented to the eye in nearly equal proportions, white light is seen. This white light is made up of various wavelengths which represent different colors. Passing light through a prism will show the composition of the visible light spectrum, (fig 1-4). The light spectrum is broken up into various wavelengths, with each wavelength representing a different color. The ability to disperse the light with a prism results because light with shorter wavelengths travels slower through glass than does light of longer wavelengths. Six distinct colors are visible when passing white light through a prism. Since the colors of the spectrum pass gradually from one to the other, the theoretical number of colors becomes infinite. It has been determined that about 125 colors can be identified in the visible spectrum.

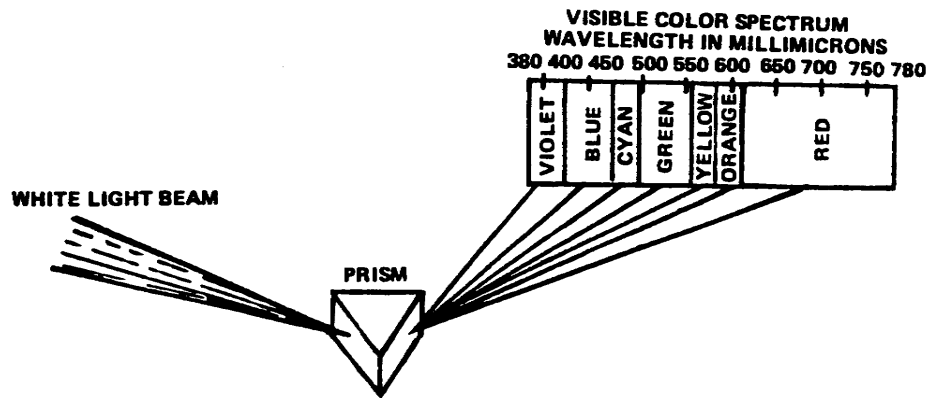


Figure 1-4. Effect of prism on white light

Learning Event 2:

DESCRIBE LUMINOSITY AND THE ADDITIVE METHOD OF COLOR MIXING

1. Luminosity curve. The fact that the human eyes do not perceive each color with equal efficiency is due in some way to the physical construction of the eye. It is believed that the cones of the retina respond to color stimuli and that each cone is terminated by three receptors. Each receptor is believed to respond to a different portion of the spectrum, with peaks occurring in the red, blue, and green regions. An average can be taken of the color response of a number of people, and a standard for the average person can be derived.

a. This standard response is called the luminosity curve for the standard observer (fig 1-5).

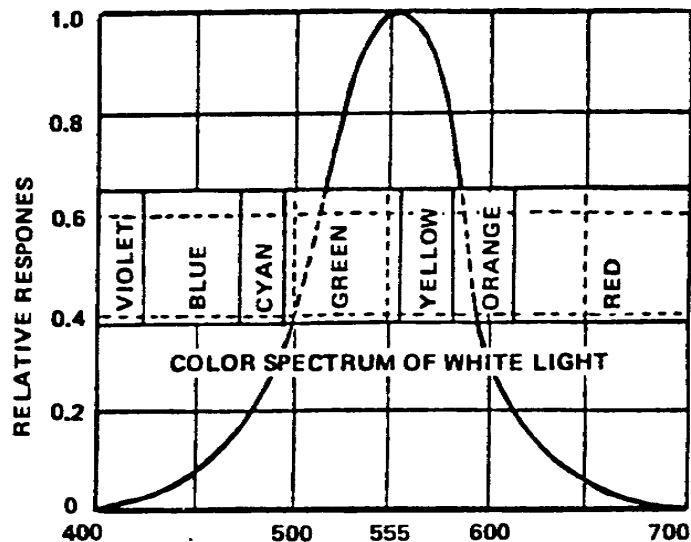


Figure 1-5. Luminosity curve

b. The curve is a plot of the response verse wavelength. We can look at the luminosity curve and see that maximum response

occurs at a wavelength of approximately 555 nanometers and that less response is indicated on either side of that point. From this information, it can be seen that the average person's eye is most sensitive to yellow-green light.

2. Qualities of color. There are three qualities which are used to describe any one color. These are hue, saturation, and brightness.

a. Hue is a quality which is used to identify any color under consideration, such as red, blue, or yellow. Hue, which defines the wavelength of the color, would be synonymous with frequency, which defines the wavelength of the radio wave.

b. Saturation is a measure of the absence of dilution by white light and can be expressed with terms such as rich, vivid, or pure. Saturation defines the purity of the color, and is synonymous with signal to noise ratio, which defines the purity of the radio wave. A 100-percent saturated color contains no white light.

c. Brightness defines the amount of light energy which is contained within a given color. It is synonymous with amplitude, which defines the amount of energy in the radio wave. Brightness is a characteristic of both white light and color. Hue and saturation are characteristics of color only. The brightness level of a color can be changed without changing the saturation. The converse is also true.

3. Any given color, within limitations, can be reproduced or matched by mixing three primary colors. This applies to large areas of color only. Color vision for small objects or small areas is much simpler because only two primary colors are needed to produce any hue. This is because, as the color area is reduced in size, it become more difficult to differentiate between hues. For small areas every hue appears as gray. At this point a change in hue is not apparent; only a change in brightness level can be seen. For example, a large area of blue can be easily distinguished from a large area of blue-green. However, when these areas are reduced in size, it becomes more difficult to distinguish between the colors.

4. Color mixing. In color television, the additive process of color mixing is used. It uses colored lights for the production of colors. The colors in the additive process do not depend upon an incident light source; self-luminous properties are characteristics of additive colors. Cathode ray tubes contain self-luminance properties, so it is logical that the additive process would be employed in color television.

a. The three primaries for the additive process of color mixing are red, blue, and green. Two requirements for the primary colors are that each primary be different and that the combination of any two primaries do not produce the third. Red, green, and blue were chosen for the additive primaries because

they fulfilled these requirements, and the greatest number of colors could be matched by the combination of these three colors. Three additive primaries are combined in a definite proportion (fig 1-6). White has been produced through the addition of all three primaries. Red and green combine to make yellow. The combination of red and blue produces magenta (bluish-red), while blue and green combine to make cyan (greenish-blue).

b. Yellow, magenta, and cyan are the secondary colors and are the complements of blue, green, and red, respectively. When a secondary color is combined with its complementary primary, white is produced. For example, combining yellow with blue produces white. Cyan added to red produces white and magenta plus green produces white. Carrying this one step further, the complementary colors when added together produce white. The expression circles in Figure 1-6 relate to color mixing.

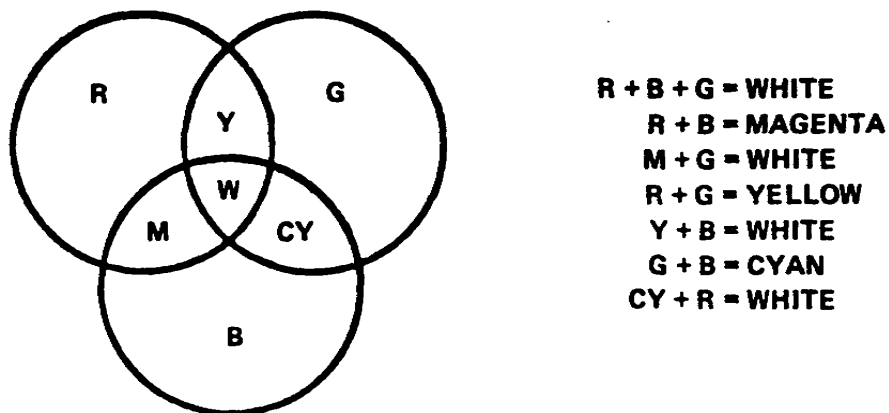


Figure 1-6. The expression circles of color mixing

c. Since yellow + blue = white, and red + green = yellow, then red + green + blue = white. Because the addition of the three primaries can produce white, the addition of the correct proportions of the three complementaries which are made up of the three primaries can also produce white. Therefore cyan + magenta + yellow = white.

d. It is not necessary to overlap the primary colors in the additive process to produce a different color. Two sources of color may be placed near each color, and at a certain viewing distance the two colors will blend and produce the new color. The eye actually performs the additive process. The screen of a color kinescope contains hundreds of thousands of phosphorous dots arranged in triangular patterns (fig 1-7). Each dot is excited by its own electron beam. The cluster of dots will emit a white light or any other color depending on the strength of the various electron beams. Due to the limits of vision of the human eyes and the process discussed above, we are actually seeing an illusion when we watch our television receiver.

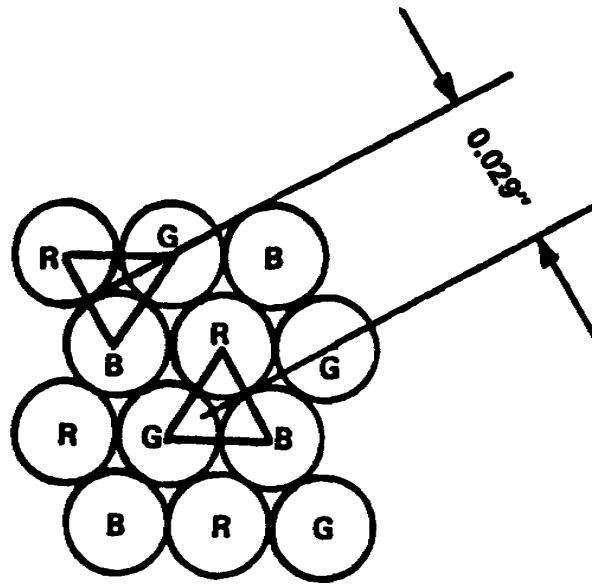


Figure 1-7. Phosphorous dots

e. Each additional primary color contributes a certain percentage of brightness in the mixture of white. Green is the brightest of the three primaries, red is the second brightest, and blue is the dimmest. This has been determined through experimentation with the response of the eye. The eye responds more to green than any other of the primary colors. With the total brightness of white considered as unity, green contributes 59 percent of the total, red 30 percent, and blue 11 percent. Therefore, when combining green with red we have yellow with a brightness level of 89 percent. Cyan has a brightness value of 70 percent. The third complementary color, magenta, has a brightness value of 41 percent. It obtains 30 percent from red and 11 percent from blue. The order of brightness for each color is known as the luminance staircase (fig 1-8).

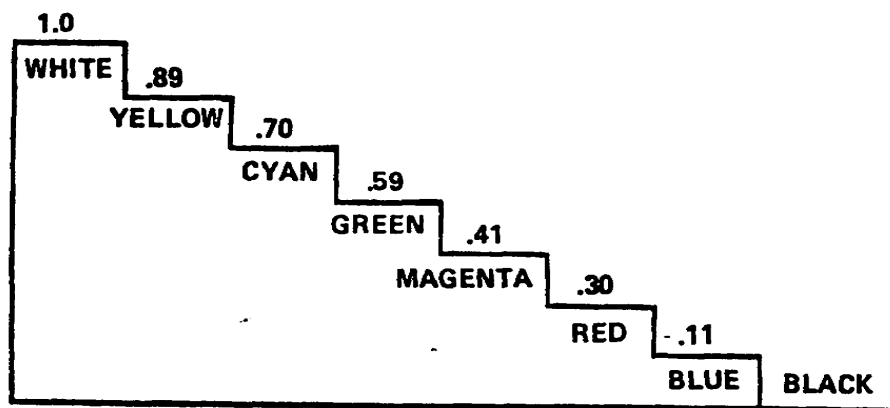


Figure 1-8. Luminance staircase

5. The Commission Internationale de l'Eclairage (CIE) chromaticity diagram and the NTSC triangle. In the development of a color matching and specification system, extensive color matching tests on many observers were conducted using a device known as a colorimeter. In order to establish an average which could be considered as that of the standard observer, many persons were used, with each performing similar tests. The results of these tests are known as tristimulus values for the color mixture curves.

a. By the use of mathematical equations, the information contained in the color mixture curves has been converted to a graphical representation of the color on a three-dimensional plane and is referred to as the Maxwell Triangle. For practical purposes the three-dimensional Maxwell triangle has been converted to a two-dimensional drawing and designated as the CIE chromaticity diagram.

(1) Examining the diagram in Figure 1-9, you see that the horseshoe curve, which is known as the spectrum locus, is graduated into numerals ranging from 400 in the left-hand corner to 700 at the extreme right. These figures represent the wavelengths of the various colors in nanometers. The blues extend from approximately 400 to 490 nanometers, the greens from approximately 550 to 580 nanometers, and the reds (including orange) extend from 580 to 700 nanometers.

(2) Since fully saturated colors contain no white light, the spectrum colors which lie directly on the horseshoe curve are 100-percent saturated. At point E in Figure 1-9, only white light is present, so there is zero percent saturation. This same principle applies when observing the vectorscope, which is a device used for measuring relationships between the various color signals being transmitted as well as the amount of saturation present.

(a) Various percentages of saturation fall along a straight line drawn between any point on the spectrum locus and point E (fig 1-9). As you move towards point E, the saturation is decreased.

(b) Conversely, as you move toward the curve, the saturation is increased. Thus, you can see that a 100-percent saturated color is one that has 100-percent purity or freedom from white and that a desaturated color is a color which contains some amount of white light.

b. When primary colors were selected for color television work, it was found that those primaries were limited by color phosphors that were available for the picture tube. Figure 1-9 shows the actual location of the primaries (red, blue and green) that are used in color television. These points represent the primaries selected by the NTSC, and define a triangle within the boundaries of the chromaticity diagram.

(1) NTSC is a research group set up by leading equipment manufacturers and broadcasters. The group examines all aspects of television, such as frequency, bandwidth, quality, power, color, and methods of transmission.

(2) The area within the triangle represents the range of colors that are obtainable when these primaries are used. In the NTSC triangle, red has a wavelength of approximately 610 nanometers, green is approximately 540 nanometers, and blue is approximately 470 nanometers. At first glance, this triangle appears much smaller than the spectrum of colors obtainable when ideal primaries are used. But, if you give Figure 1-9 a close inspection, you see that the NTSC primaries fall very close to saturated colors on the chromaticity curve. The red primary, for example, is actually on the curve.

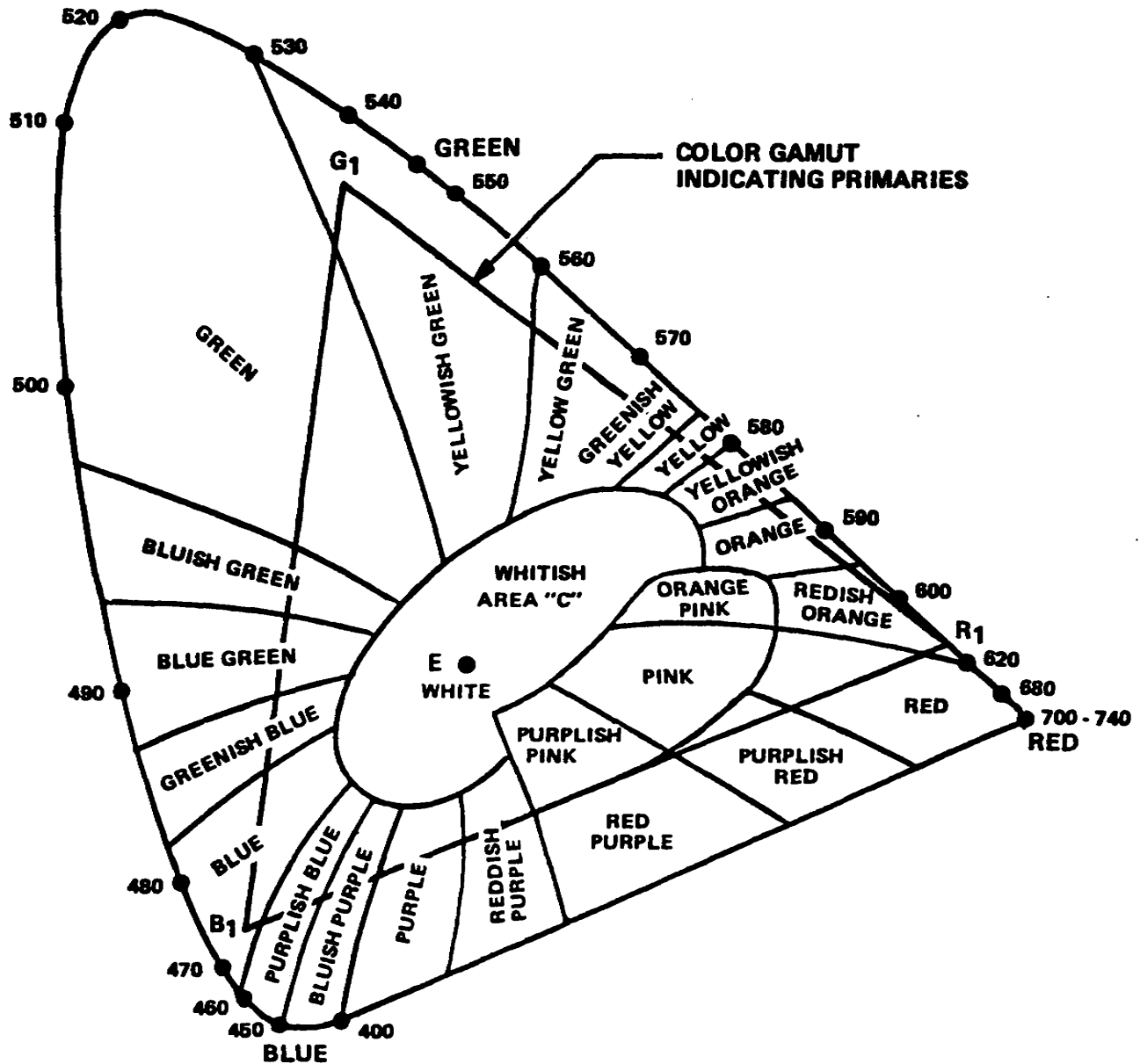


Figure 1-9. CIR chromaticity diagram and the NTSC triangle

Learning Event 3:
DESCRIBE THE NTSC COLOR TRANSMISSION SYSTEM

1. Compatibility is one of the primary requirements of the color television system. Compatibility provides a high definition black and white picture for present standard black and white receivers without any modifications to the TV receiver. This means that the following must apply:

a. First, a color telecast must provide a full 6-MHz black and white signal with the same amplitude modulation, sync, and blanking characteristics as does any ordinary standard monochrome telecast.

b. Second, the chrominance information, which includes the hue and saturation variable of color, must be transmitted within the standard 6-MHz television channel.

c. Third, the transmitted chrominance information must not in any way cause objectionable interference with the black and white signal (the brightness variable of color).

d. At first glance it seems to be a difficult task since the 6-MHz channel is apparently already well filled. However, you will learn that it is not impossible to transmit the chrominance information along with the monochrome signal within the standard 6-MHz television channel.

2. As previously stated, color television programs must be transmitted so they can be faithfully reproduced by black and white receivers. This feature is known as compatibility (fig 1-10).

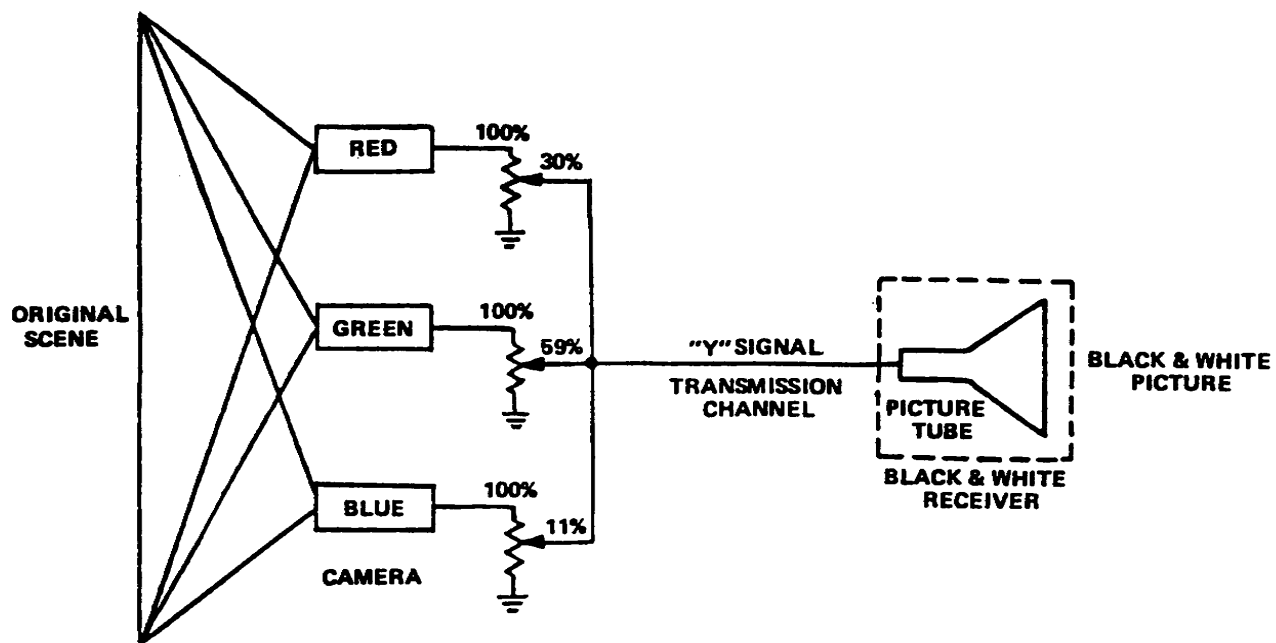


Figure 1-10. Compatibility

3. Reverse compatibility (fig 1-11) or black and white reception on a color receiver is the next requirement. A black and white signal' transmitted by a monochrome system is split three ways and is applied to the red, blue and green electron gun cathodes of a tricolor kinescope. Before the signal is applied to its electron guns, the tricolor tube is adjusted to produce a white raster. After a white raster is obtained, the signal is applied to all three guns and the black and white signal being transmitted produces a monochrome picture on the tricolor kinescope. In the process of producing a white screen, the kinescope automatically separates the brightness signal into a ratio of 30 percent red, 11 percent blue, and 59 percent green as the signal is applied to the electron guns.

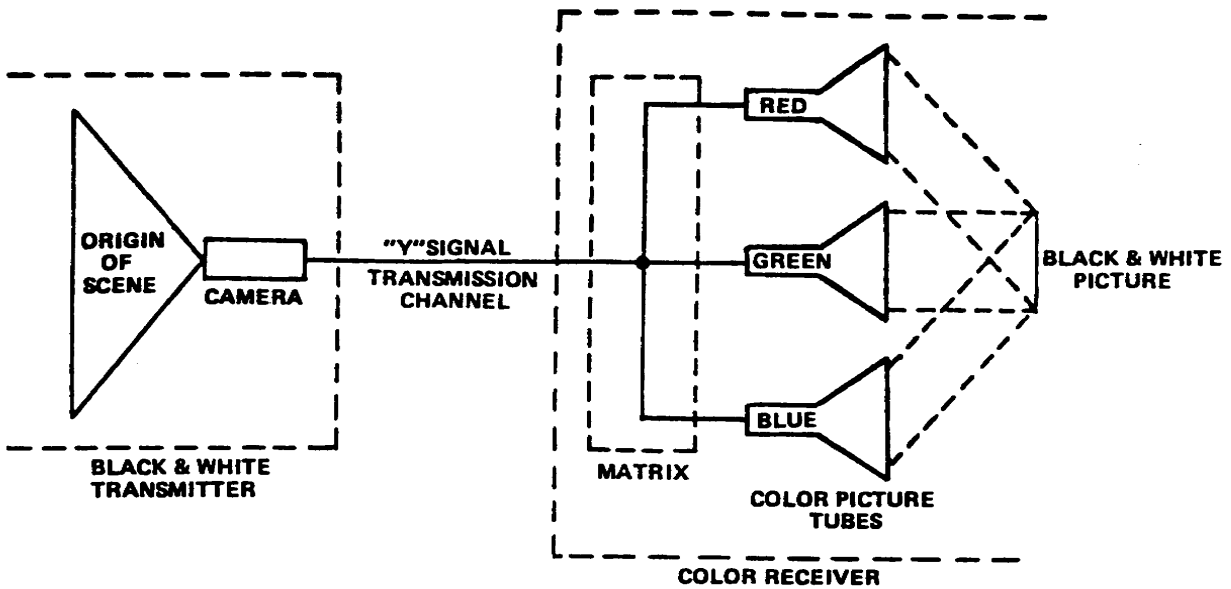


Figure 1-11. Reverse compatibility

4. A review of the standard bandwidth breakdown of a TV channel is presented in figure 1-12, so you can associate it with the bandwidth of the color signal. The bandwidth is 6 MHz, the video carrier is placed 1.25 MHz above the vestigial sideband, video information is compressed within the 4.2 MHz band above the video carrier, and for compatibility the monochrome and chrominance information is placed within the same 4.2 MHz band (fig 1-12).

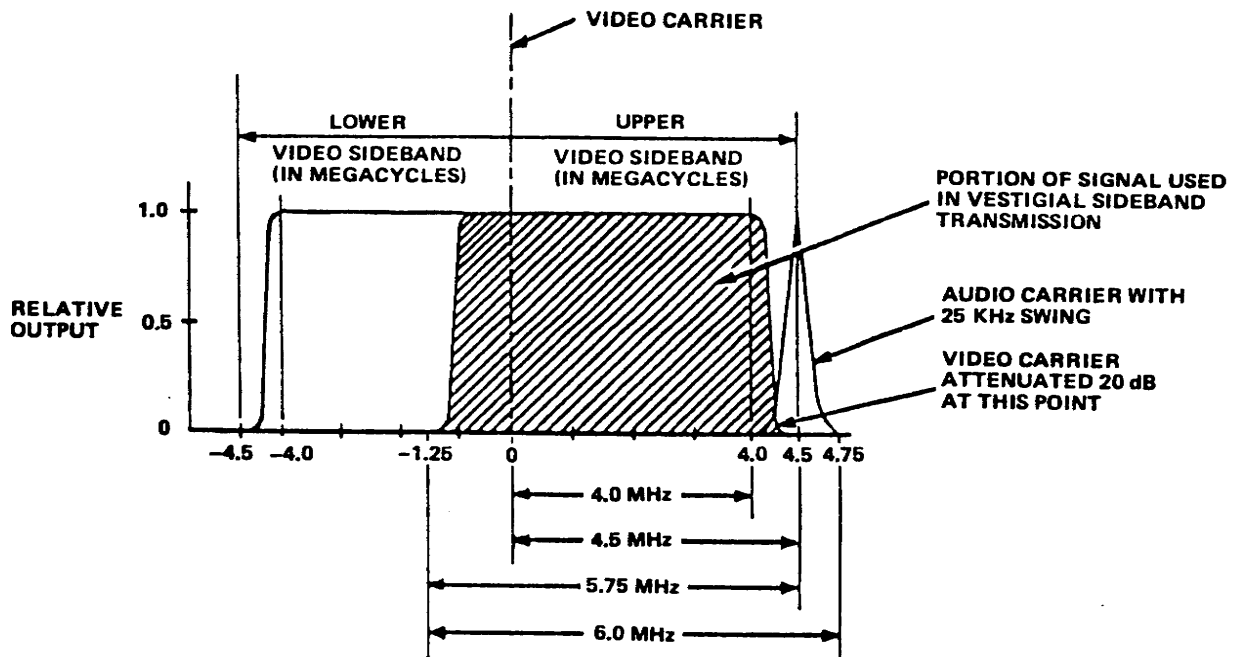


Figure 1-12. Standard television bandwidth

a. The color information is contained within the same 4.2 MHz band as the monochrome signal. It was discovered that a monochrome 4 MHz video signal does not occupy every cycle of the 4 MHz assigned to it. Rather, this signal appears in forms of clusters or "bursts" of energy located in harmonics of the 15750 Hz line-scanning frequency.

b. Figure 1-13 indicates that in a TV scene, the electrical signal consists of bursts of signal energy at the line harmonics with harmonics of 30 Hz (frame rate) and 60 Hz (field rate) clustered on either side. Other frequencies are attenuated so much that the space in between is considered to be unoccupied by any electrical signal. From Figure 1-13 it can be seen that half of the video spectrum is unused. Since the scanning rate for the chrominance and for the luminance signals are the same, the concentrations of energy produced by both are spaced at the same intervals. It is feasible, therefore, that the bands of concentrated energy of the chrominance signal could be spaced between the bands of the luminance signal. As seen in Figure 1-13, the spaces in the frequency occur at odd multiples of one-half the line frequency.

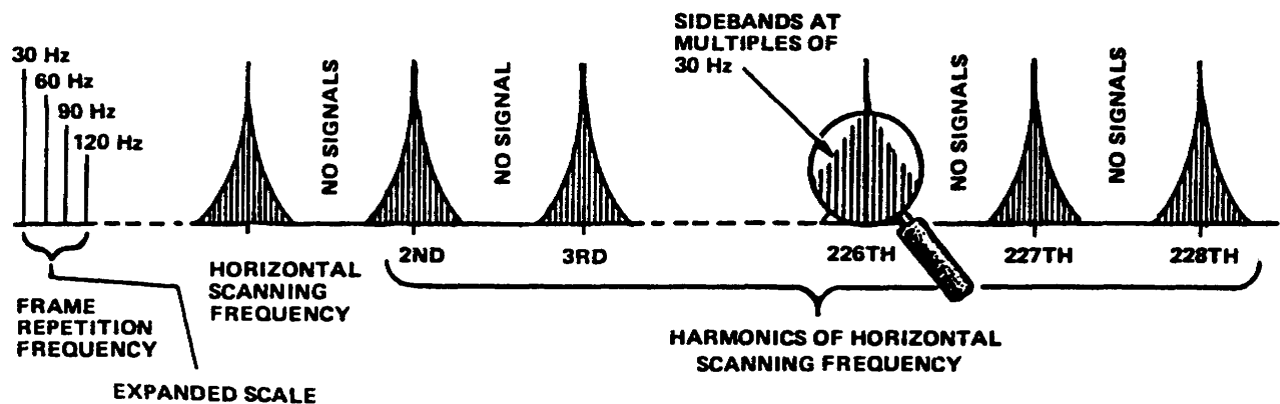


Figure 1-13. Distribution of energy in the frequency spectrum of a standard monochrome signal

c. If a subcarrier frequency equal to an odd multiple of one-half the line scanning frequency is chosen, the chrominance and luminance signals are interleaved. This practice is followed today (fig 1-14).

5. Color signal components. A color signal consists of two components; a monochrome signal and the signal which carries information concerning color. Each component will be examined separately.

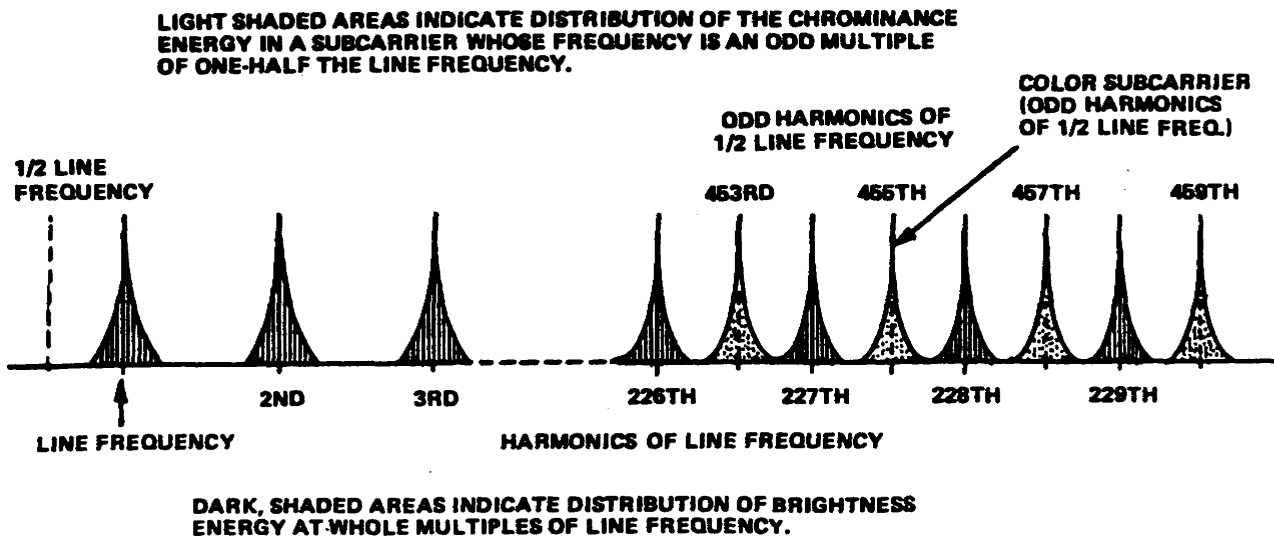


Figure 1-14. Interleaving of color with luminance signals

a. The monochrome signal (luminance or black and white), portion of the total color signal is equivalent in all respects to the present monochrome signals. It is formed by combining the red, blue and green signals from their respective color camera pickup tubes in these proportions:

$$Y \text{ (luminance)} = 0.59G + 0.30R + 0.11B$$

Where:

Y = a mathematical symbol representing the luminance signal

G = green signal

R = red signal

B = blue signal

(1) This particular proportion was chosen because it closely follows the color sensitivity of the human eye. That is, if you take equal amounts of red, blue, and green light and superimpose the rays from these lights on a screen, you will see white. However, if you then look at each light separately, the green will appear twice as bright as the red, and from 6 to 10 times as bright as the blue. This is because the eye is more sensitive to green than to red and more sensitive to red than to blue.

(2) Thus, the luminance signal is composed of 59 percent green signal (that is, 59 percent of the output of the green camera pickup tube), 30 percent red, and 11 percent blue, and contains frequencies from 0 to 4.2 MHz.

(3) The terms monochrome and luminance are synonymous. They are also often referred to as the brightness signal. Every monochrome signal contains nothing but the variations in amplitude of the picture signal, and these amplitude variations at the picture tube produce changes in light intensity at the screen.

b. The second component of the television signal is the color signal itself, which is interleaved with the black and white signal. To determine what information this portion of the total signal must carry, we will examine how the eye reacts to color, since it is in the eye where the color image is formed. The color-discerning characteristics of the human eye have been thoroughly studied and, briefly, here is what is known:

(1) The typical human eye sees a full color range only when the area or object is relatively large. When the size of the area or object decreases, it becomes more difficult for the eye to distinguish colors. Thus, where the eye required three primary colors, now it finds that it can get along very well with only two. That is, these two colors will, in different combinations, provide the limited range of colors that the eye needs or can see in these medium-sized areas.

(2) When the detail become very small, all that the eye needs to (or can) discern are changes in brightness. Colors cannot be distinguished from gray, and in effect the eye is color blind.

(3) These properties of the eyes are put to use in the NTSC color system. First, only the large- and medium-sized areas are colored; the fine detail is fendered in black and white. Second, even the color information is regulated according to bandwidth; that is, the larger objects receive more of the green, red, and blue than the medium sized objects.

(4) The color signal takes the form of a subcarrier and an associated set of sidebands. The subcarrier frequency is 3.579545 MHz or rounded off to 3.58 MHz. This represents a figure which is the product of 7875 Hz multiplied by 455. The value 7875 Hz is one-half the line frequency of 15750 Hz, and if we use an odd multiple of 7875 Hz as a carrier, the frequency falls midway between the harmonics of 15750 Hz. If we use even multiples of 7875, we would end up with 15750 Hz or one of its harmonics, and this would place the color signal at the same points throughout the band as those occupied by the black and white signal (fig 1-14). By taking an odd multiple of 7875 Hz, we cause the signal to fall in between the bundles of energy produced by the first signal, and the two do not interfere.

(a) It is highly desirable to have the color subcarrier frequency as high above the picture carrier as possible in order to minimize the interference with the black and white video information (fig 1-15).

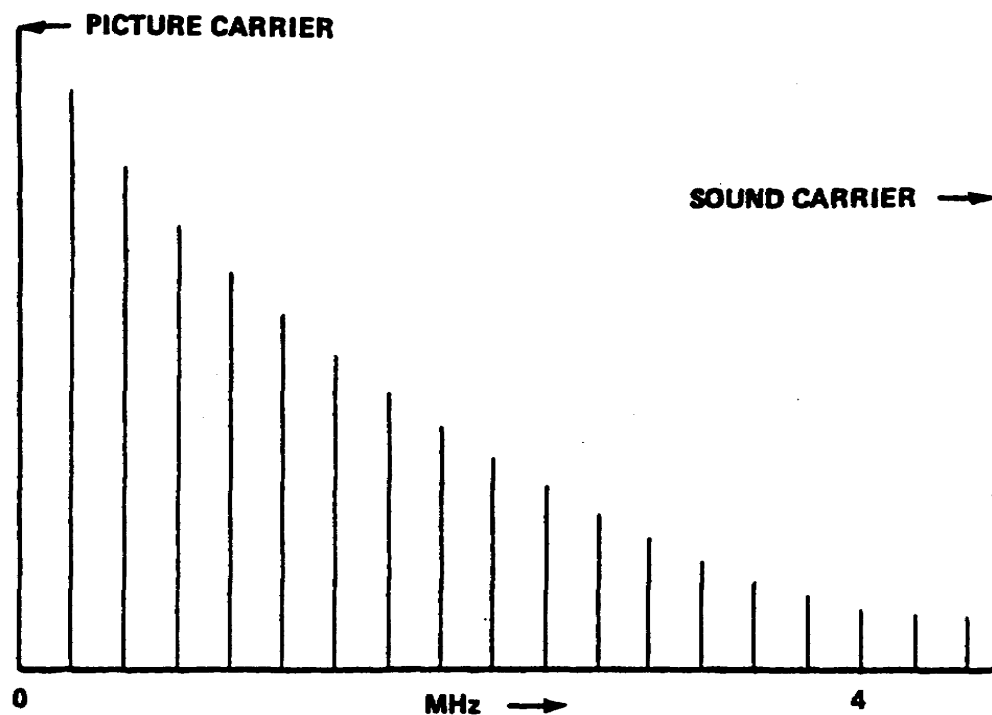


Figure 1-15. Black and white video energy distribution

(b) The energy level of the black and white video falls very rapidly with increasing video frequencies. By placing the color subcarrier as high as possible the different energy levels minimize possible interference (fig 1-16). Practical limits set the upper limit to 3.6 MHz.

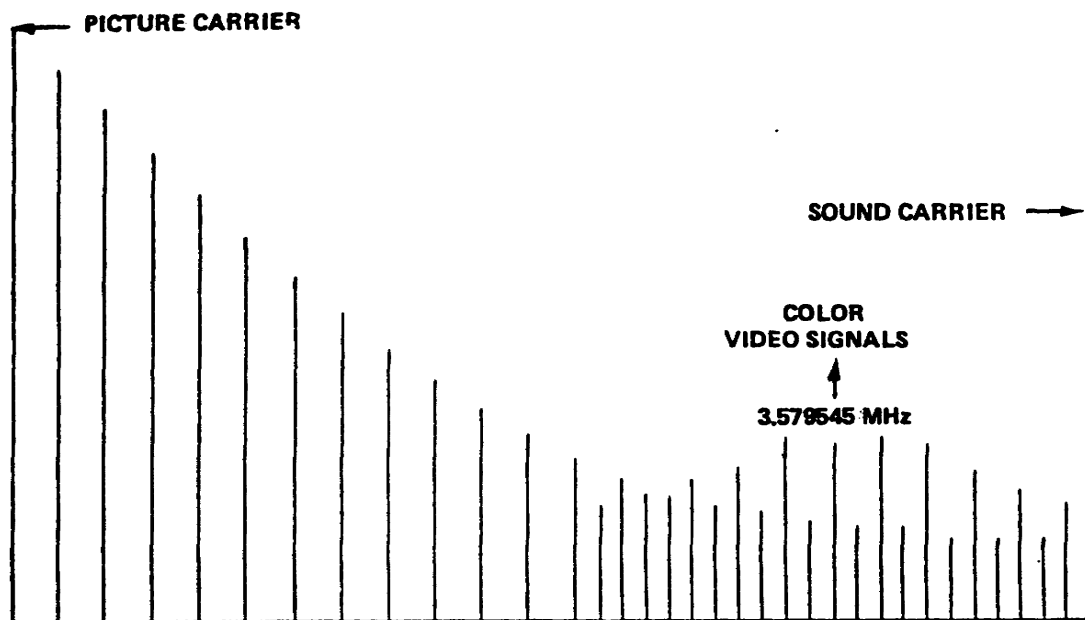


Figure 1-16. Placement of the color subcarrier

(5) There is a very objectionable 0.92 MHz (920 kHz) signal generated from the beat between the sound carrier and the color subcarrier ($4.5 \text{ MHz} - 3.58 \text{ MHz} = 0.92 \text{ MHz}$). The beat is much less objectionable if the sound-carrier frequency is a multiple of the horizontal scan frequency away from the video carrier frequency. In standard black and white TV, the 286th harmonic of the horizontal line rate, 15750 Hz is 4.5045 MHz. The line frequency whose 286th harmonic is 4.5 MHz is 15734.26 Hz. $F (\text{line}) = 4.5 \text{ MHz} / 286 = 15734.26$ (new line frequency for color).

(a) This frequency is within the deviation limit set by the NTSC monochrome standards. With the horizontal scan frequency changed, the color subcarrier must be chosen to interleave. It must be an odd multiple of one-half the horizontal scan rate. With 3.6 MHz as an upper limit, it was found that the 455th harmonic of half the horizontal scan rate becomes:

$$F (\text{color subcarrier}) = 455 \times 15734.26 \text{ Hz} / 2 = 3.58 \text{ MHz}.$$

Since there are 525 lines, and using a 2:1 interlace, the new vertical scan frequency becomes:

$$F (\text{vertical}) = 2 / 525 \times 15734.26 \text{ Hz} / 1 = 59.94 \text{ Hz}.$$

(b) Notice that the new scanning frequencies used for color transmission are slightly below the nominal values used in monochrome receivers. However, the changes amount to less than the 1 percent tolerance allowed, and the new frequencies fulfill the requirements for compatibility in monochrome reception.

6. Tolerance of subcarrier frequency. To maintain close synchronization of the color receivers, the tolerance for the subcarrier frequency is set at ± 0.0003 percent, or around ± 10 Hz; and the rate of change cannot be more than 1/10th Hz per second. The same tolerance applies to the field and line frequencies. In actual practice, all of these frequencies are developed from the same source to minimize variations from established figures.

7. Chrominance sideband transmission. Since picture detail is a function of the transmitted signal bandwidth, and since there is a limited amount of bandwidth allowed for chrominance information, this is an important point to consider. The highest usable video brightness signal frequency is 4.1 MHz, with the chrominance subcarrier at 3.58 MHz (fig 1-17). Transmitting symmetrical or double sidebands of chrominance would mean that color definition would be limited to 0.5 MHz and color would be absent in all fine detail in the picture. It is possible however, to transmit the chrominance sideband vestigially: that is, with one side band suppressed, the same as the black and white signal.

Although this would extend the color definition to possibly 1.5 MHz, it is practical to transmit only one of the chrominance signals vestigially. One of the color difference signals would then extend from 0 to 1.5 MHz, while the other color difference would be limited from 0 to 0.5 MHz.

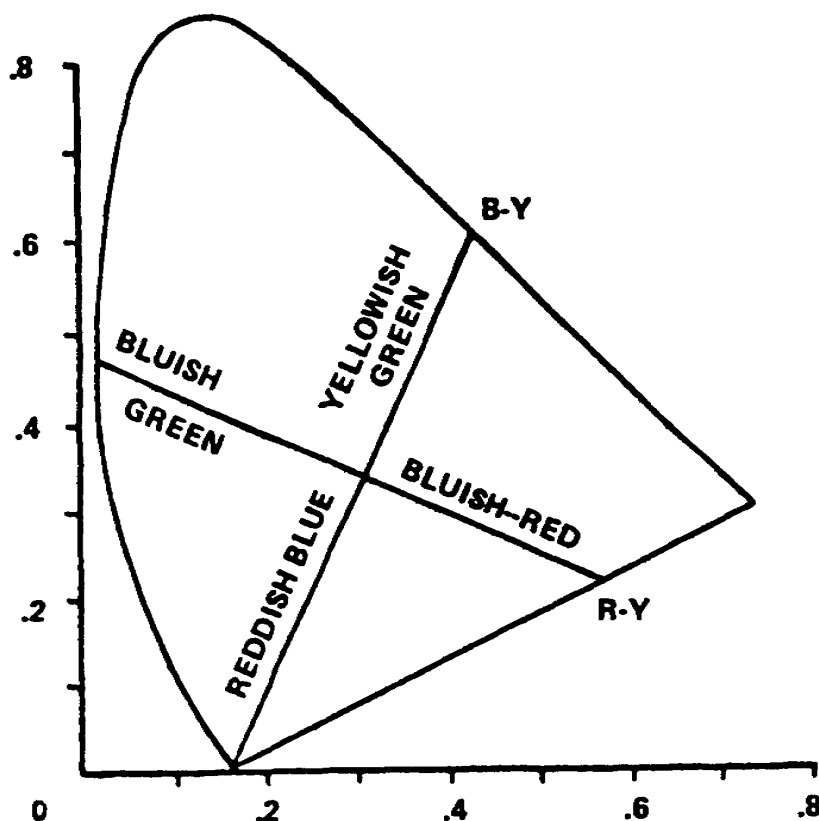


Figure 1-17. R-Y and B-Y chromaticity coordinates

8. Color difference signals. The color difference signals are the signals which can be produced by subtracting the Y signal from each color camera signal. For example, the Y signal is inverted so that all values are negative (-30R, -59G, -11B). This is algebraically added to each camera tube output in turn, producing three chrominance signals, R-Y, G-Y, and B-Y. Only two color difference signals plus the Y signal need to be transmitted to reproduce the color elements of any televised scene. One of the color difference signals may be developed in the receiver, since any two color difference signals contain all the necessary color information. Thus, only the R-Y and the B-Y signals need to be transmitted.

a. It should be noted that if R-Y were the extended sideband, fine detail would appear as either a bluish-red (magenta) or a bluish-green (cyan). On the other hand, if B-Y were the extended sideband, only reddish-green or yellow-green colors would be produced (fig 1-17).

b. Fine color detail is represented accurately to the eye by orange or cyan for any color. If this principle were to be used by R-Y and B-Y transmission standards, it would still be necessary to transmit extended sidebands of both color difference signals, since both are necessary to reproduce either cyan or orange.

(1) It appears then, that color definitions using the color difference signals must be limited to 0.5 MHz of sidebands extension (upper), and therefore cannot, by their inherent colors, represent full fidelity of the televised scene. The eye cannot detect all colors accurately for all sizes of picture detail. Color areas beyond a certain fineness of detail can be accurately represented to the eye by either orange or cyan, since the eye cannot distinguish any color other than one of these. For extreme fineness of detail the eye cannot detect any color sensation. Only a brightness variable is necessary to represent the object as having color.

(2) If the axis of the color subcarrier signals were shifted in phase from the reference subcarrier so that one axis would represent orange and cyan, with the other axis at right angles to it, then many transmission problems would be solved. The orange-cyan axis could be extended to 1.5 MHz, and since the fine detail conveyed by this extended bandwidth need only be either orange or cyan to represent accurate color reproduction to the eye, full color fidelity would be possible in picture detail up to 1.5 MHz of picture definition.

(3) By readjusting the phase of the chrominance signals and transmitting one signal vestigially with extended bandwidth, all colors are reproduced in picture detail from 0 to 0.5 MHz. Beyond this point, one of the chrominance signals drops out. With the orange-cyan signal still present to 1.5 MHz, effectively the eye still sees all color though only orange and cyan are transmitted. The eye cannot distinguish color in picture detail represented by video frequencies beyond 1.5 MHz. With no chrominance signals transmitted beyond this point, the brightness signal will accurately convey the illusion of color in video detail from 1.5 to 4.1 MHz.

9. High definition color transmission. The readjustment of chrominance signal phases is called high definition color transmission and is the system of color transmission used today. Since the chrominance axes in this system are not the same as R-Y and B-Y, they have been given new titles. One is called the "I" signal since it is nearest in phase to the burst or the reference subcarrier, and the other is called the "Q" signal as it is in quadrature with the I signal.

a. Figure 1-18 is a vector diagram of the I and Q color coordinates and their relationship to the old R-Y/B-Y system. The I and Q signals are produced with their phase coordinates 90 degrees from each other. The +I signal is 57 degrees from the reference subcarrier, with -I at 237 degrees (180 degrees from +I). The +Q signal is displaced 57 degrees + 90 degrees, or 147 degrees from reference subcarrier, with the -Q signal 180 degrees from it, or 327 degrees from the reference subcarrier.

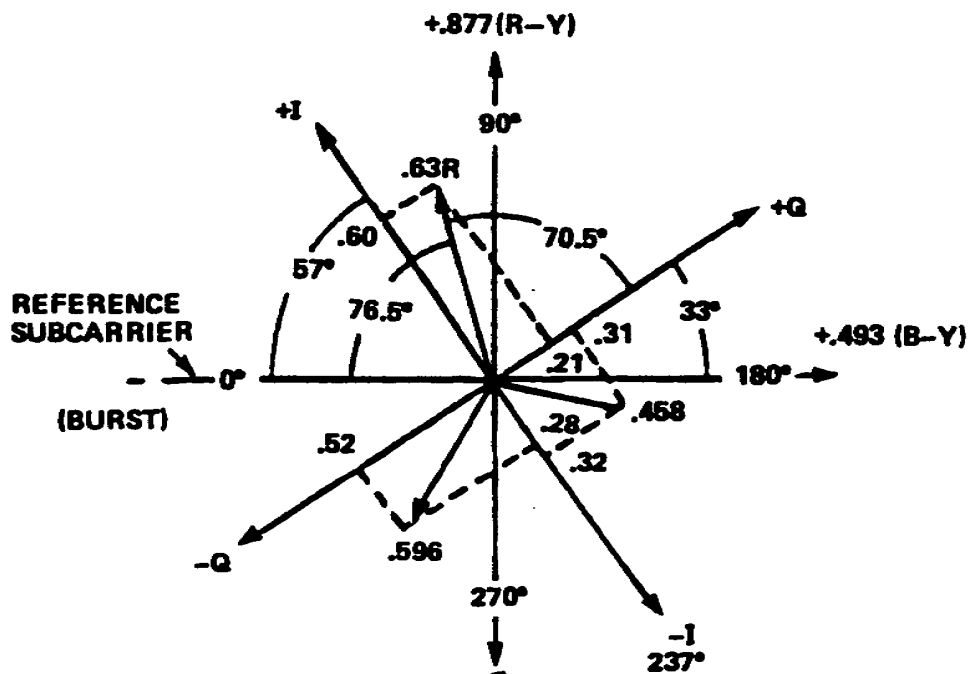


Figure 1-18. Vector diagram

b. Color transmission begins at the camera where the light of the original scene is separated into three primary colors; red, blue, and green.

(1) Three individual signals or electrical elements are provided by means of three pickup tubes to represent the information of the three primary colors. The three electrical signals representing red, green, and blue hues of the televised scene are then routed to a device known as a colorplexer (also known as an encoder). Colorplexers are sometimes referred to as the heart of the television system. This unit combines the various individual signals originating at the camera into a composite color television signal. Figure 1-19 illustrates a typical colorplexer. One can see that the red, blue, and green signals from the camera enter the colorplexer and are fed to the matrix selection.

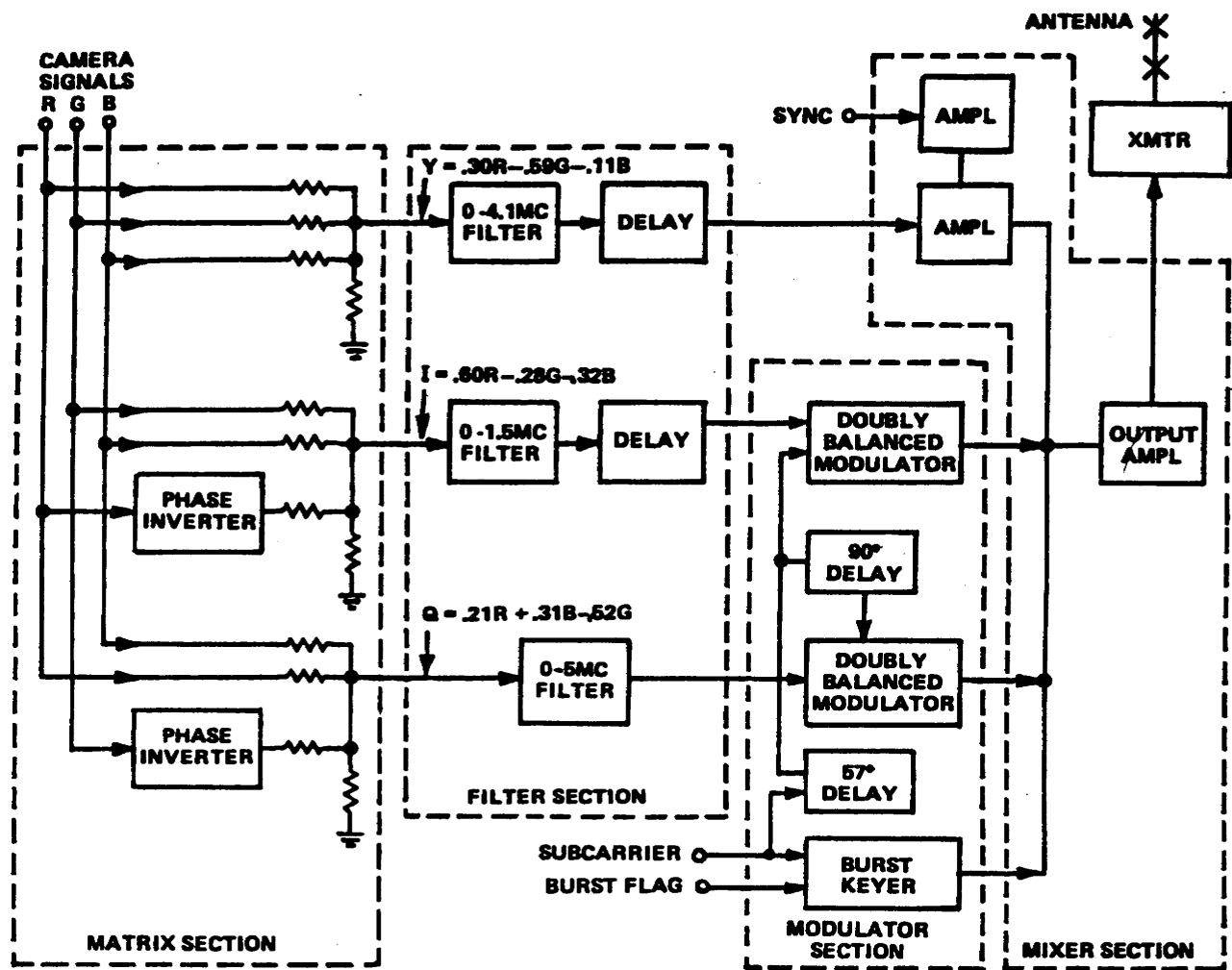


Figure 1-19. Basic colorplexer simplified block diagram

(2) Matrixing is the process of repackaging the information contained in the red, blue, and green output signals from the color camera. The outputs of the matrix are the Y, the I, and Q signals. The I and Q signals were previously known as the R-Y and B-Y signals. The Y signal is formed by applying the red, blue, and green pickup tube outputs to the base of an amplifier. Then the three signals are in phase with one another at the amplifier's input and output.

(a) A resistor network (crossconnected voltage divider) determines that the amplitude of the Y amplifier output will consist of 30 percent red, 59 percent green, and 11 percent blue. This Y signal corresponds to the variations of brightness in the scene being televised. This is the signal received by a black and white TV receiver, and is the brightness component in a color receiver.

(b) The I signal is formed by applying the red signal to the base, and the blue and green signal to the emitter of the I amplifier (fig 1-20). This circuitry determines that the output of the red signal will be 180 degrees out of phase with the other two color signals. Thus the designation is +60 percent red, +28 percent green, and +32 percent blue. The polarity signs only indicate phase relationships. The resistor network determines the amplitude of the signals.

(c) The Q signal is formed by applying the green signal to the base and the red and blue to the emitter of the Q amplifier. Here, the green is 180 degrees out of phase with the red and blue. The resistor network sets the percentages at -52 percent green, +21 percent red, and 31 percent blue (fig 1-21).

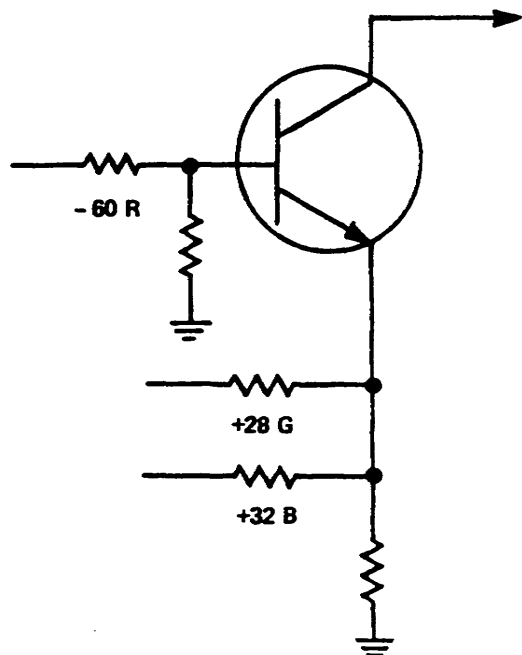


Figure 1-20. I matrix

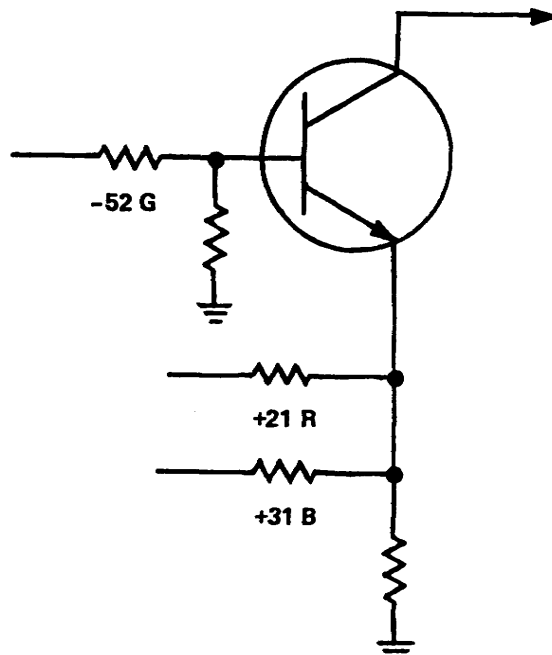


Figure 1-21. Q matrix

c. Band limiting and delay. The outputs of the individual matrix sections feed the filter section (fig 1-19). The filter section establishes a bandpass for each of the video signals, 4.1 MHz for Y, 1.5 MHz for I, and 0.5 MHz for Q. The channel is broad-banded but has vestigial-sideband characteristics because of the upper-frequency cutoff of the transmitter (fig 1-24). This channel is single-sideband for frequencies higher than 0.5 MHz. Transmission of frequencies up to 0.5 MHz is double-sideband on both the I and Q channels.

(1) This operation allows two types of receiver action: One, the receiver may use the extra color information in the wideband I channel, or, two, receivers may ignore this extra information and reproduce only chrominance detail supplied up to 0.5 MHz.

(2) Because the Y, I, and Q are different bandwidths, and since their envelopes must have a specific placement in time with regard to each other, the I and Y signals are sent through delay networks so that all three signals have the proper time placement when applied to the mixer (adder) section.

d. Two-phase modulation (generation of the color signal). The I and Q output of the filter section feeds two doubly-balanced modulators, where two-phase modulation takes place (fig 1-19).

(1) Two-phase modulation is a technique by which the I and Q signal scans are combined into a two variable signal for transmission over a single channel.

(a) This is accomplished by adding sidebands obtained through modulation of two 3.58 MHz carriers separated in phase by 90 degrees. The resultant waveform is the vector sum of the components. The two carriers, which are derived from the same oscillator, are suppressed by doubly balanced modulators. Thus, only the two amplitude modulated sidebands, 90 degrees out of phase, are transmitted.

(2) At the receiving end of the system, the I and Q signals are recovered by heterodyning the two-phase wave against two locally generated carriers of the same frequency (but with a 90-degree separation), and applying the resultant signals through low pass filters to other matrix circuits in the receiver.

(3) Figure 1-22 illustrates a simplified diagram of a doubly-balanced modulator. The input stage is a pair of differential amplifiers which supplies signal output of equal amplitude, 180 degrees out of phase with the input.

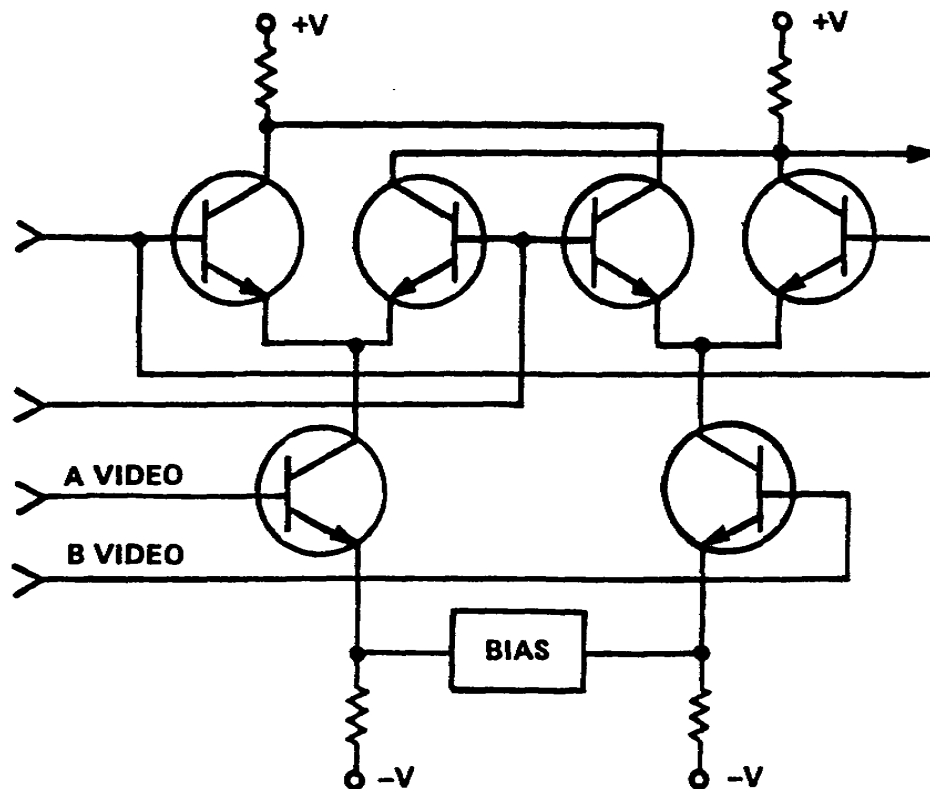


Figure 1-22. Doubly balanced modulator

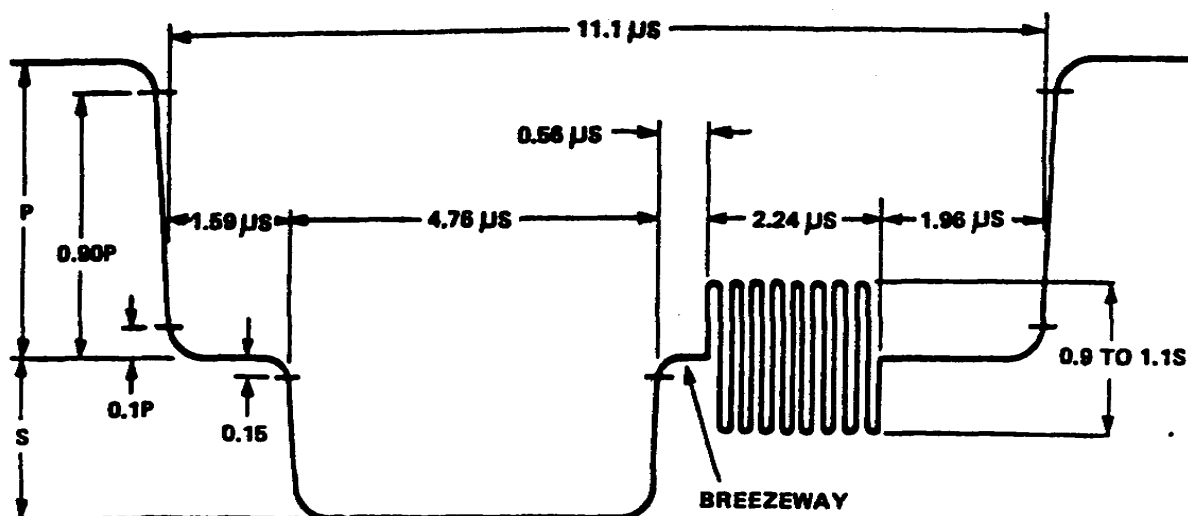
(4) Looking again at Figure 1-19, one can see that the 3.58 MHz CW subcarrier is applied to the I and Q modulators through delays. The I signal is delayed 57 degrees from subcarrier and the Q signal is delayed $57 + 90$ or 147 degrees away from subcarrier. This corresponds to the I and Q vectors shown in figure 1-18. Also, the subcarrier is applied to a burst keyer where a portion of the subcarrier is inserted onto blanking for use as a color sync.

e. Color synchronization signal. Since the subcarrier is suppressed at the colorplexer, the local 3.58 MHz oscillator at the receiver must be accurately synchronized in frequency and in phase with the master oscillator at the transmitter. In order to maintain these two oscillators in phase, a short burst of the transmitter 3.58 MHz oscillator voltage is transmitted at the beginning of each horizontal scanning line.

(1) The burst is generated at the color frequency standard generator by a gating circuit which is turned on by burst keying pulses derived from a device known as a burst flag generator. This device is also locked in with the station sync generator.

(2) The burst consists of approximately 8 to 11 cycles of the 3.579545 MHz signal and is placed on the back porch of the horizontal blanking pedestal next to the horizontal sync pulse, and all are placed in the horizontal blanking interval (fig 1-23). FCC standard phase relationships between I and Q signals and the color synchronizing burst are shown in the vector diagram (fig 1-18). The I and Q signals are transmitted in phase-quadrature, and the color burst (referred to as reference subcarrier) is transmitted with an arbitrary 57-degrees phase lead over the I signal.

f. In the mixer section of the colorplexer, the outputs of the Y, I, Q, and burst keyer sections are added together to form the composite color signal (also, sync is added in the luminance channel for a single color camera chain). The bandpass is now formed with the addition of the I and Q signal,



	NOMINAL MICROSECONDS	TOLERANCE MICROSECONDS
BLANKING	11.1	+0.3 -0.6
SYNC	4.76	± 0.32
FRONT PORCH	1.59	+0.13 -0.32
BACK PORCH	4.76	+0.96 -0.61
SYNC TO BURST	0.56	+0.08 -0.17
BURST	2.24	+0.27 0
BLANKING TO BURST ¹	6.91	+0.08 -0.17
SYNC & BURST	7.56	+0.38 -0.49
SYNC & BACK PORCH	9.54	± 0.32

1. BLANKING TO BURST TOLERANCES APPLY ONLY TO SIGNAL BEFORE ADDITION OF SYNC.

Figure 1-23. Horizontal blanking interval

Lesson 1
PRACTICE EXERCISE

1. Brightness is synonymous with which of the following terms?
 - a. Frequency
 - b. Contrast
 - c. Light
 - d. Amplitude
2. What is the horizontal scanning rate for color transmission?
 - a. 60 Hz
 - b. 15750 Hz
 - c. 59.94 Hz
 - d. 15734.26 Hz
3. How many primary colors are required to produce any hue for a small object?
 - a. Two
 - b. Three
 - c. Four
 - d. Five
4. What is the color produced when 59 percent green is combined with 30 percent red?
 - a. Cyan
 - b. Yellow
 - c. Magenta
 - d. White
5. What is the science of determining and specifying colors?
 - a. Additive mixing
 - b. Subtractive mixing
 - c. Luminosity
 - d. Colorimetry
6. What does hue define in a color?
 - a. Wavelength
 - b. Luminance
 - c. Saturation
 - d. Purity

Lesson 2
DESCRIBE THE COLOR BAR TEST SIGNALS

TASK

Describe and identify the four basic color bar test signals.

CONDITIONS

Given information and illustrations relating to the four basic color bar test signals.

STANDARDS

Demonstrate competency of task skills and knowledge required for identification of the color bars signals discussed in this lesson by correctly responding to 80 percent of the multiple-choice test questions covering the four basic color bar test signals.

REFERENCES

None

Learning Event 1:

DESCRIBE THE ENCODED COLOR BARS TEST SIGNAL

1. The encoded color bars signal. The Electronics Industries Association (EIA) standard for the encoded color bars signal is established in their recommended standard RS-189. RS-189 provides the specification of the encoded color bars signal and its various applications. Some of the most common uses of this signal involve rapid checks of television transmitters, performing timing checks of production switchers, leader reference signals on video tapes, and to serve as a calibration signal for the adjustment of color monitors and encoders.

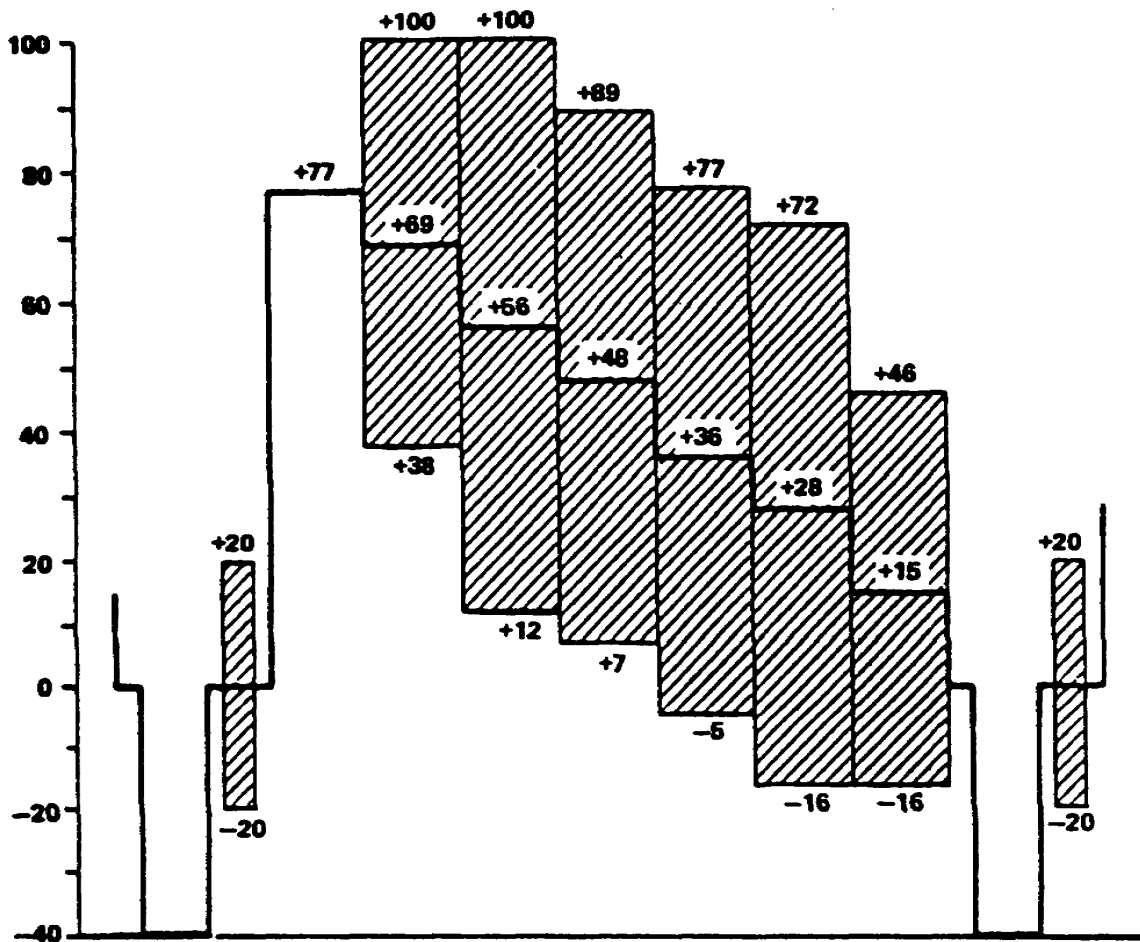
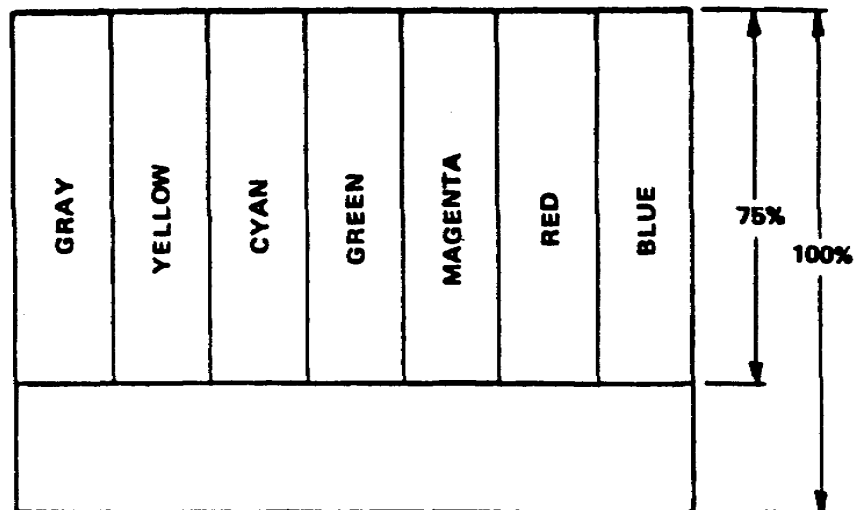
2. The encoded color bars signal consists of two major parts. The first three-fourths of the active scanning lines in each field are divided into seven equal intervals. These intervals represent one luminance interval and six chrominance intervals. The intervals are arranged in descending order of luminance from left to right as you observe a picture monitor or waveform monitor (fig 2-1).

a. The first interval, Gray (TV White), not to be confused with peak or reference white, has a luminance level of +77 IRE. This luminance level is normally associated with nonmodulated

font. The six remaining luminance intervals are chrominance modulated in the following order: Yellow, Cyan, Green, Magenta, Red, and Blue. The luminance level for yellow is +69 IRE and the chrominance modulation level is +/31 IRE. Luminance for Cyan is +56 IRE and chrominance modulation is +/- 44 IRE. Luminance for Green is +48 IRE and chrominance modulation is +/- 41 IRE. Luminance for magenta is +36 IRE and chrominance modulation is +/41 IRE. Luminance for Red is +28 IRE and chrominance modulation is +/- 44 IRE. Luminance for Blue is +15 and chrominance modulation is +/31 IRE. These colors correspond to saturated colors transmitted at 75% of full amplitude.

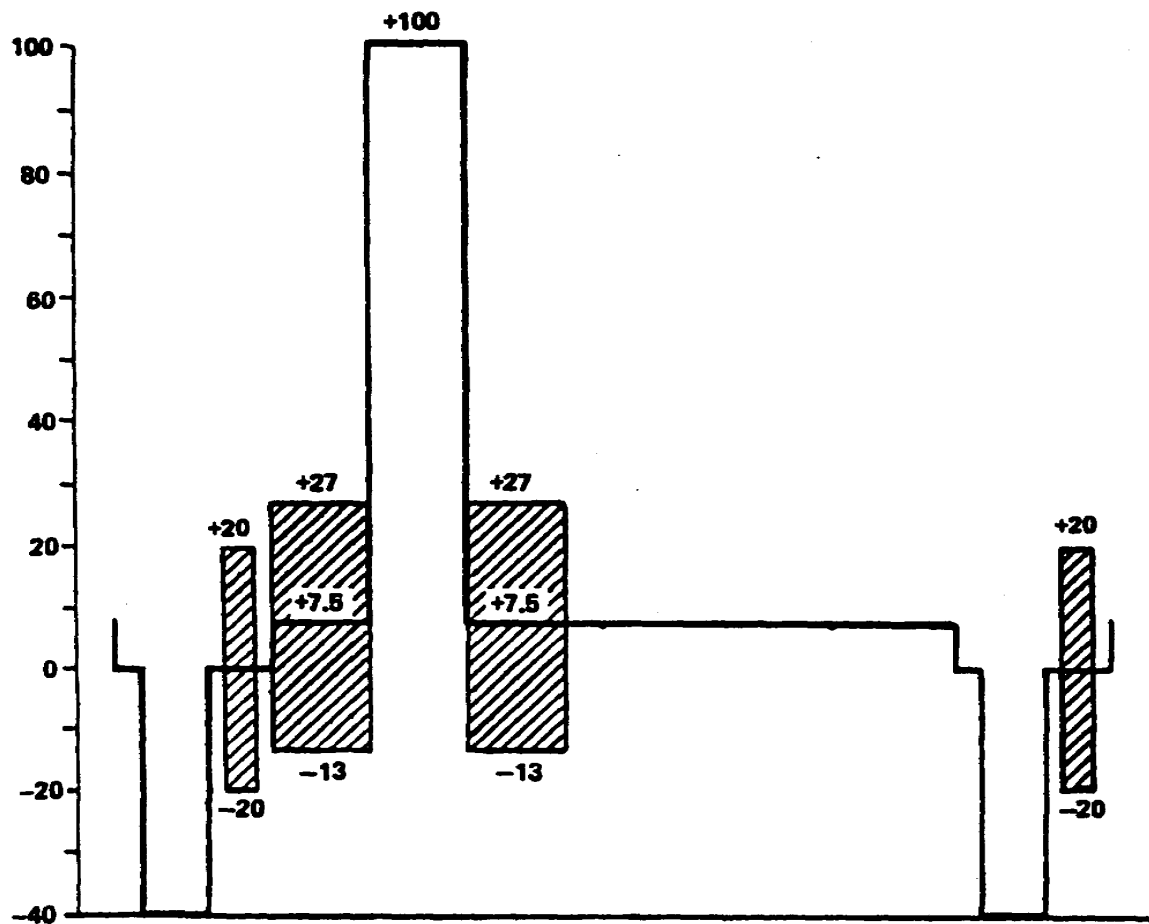
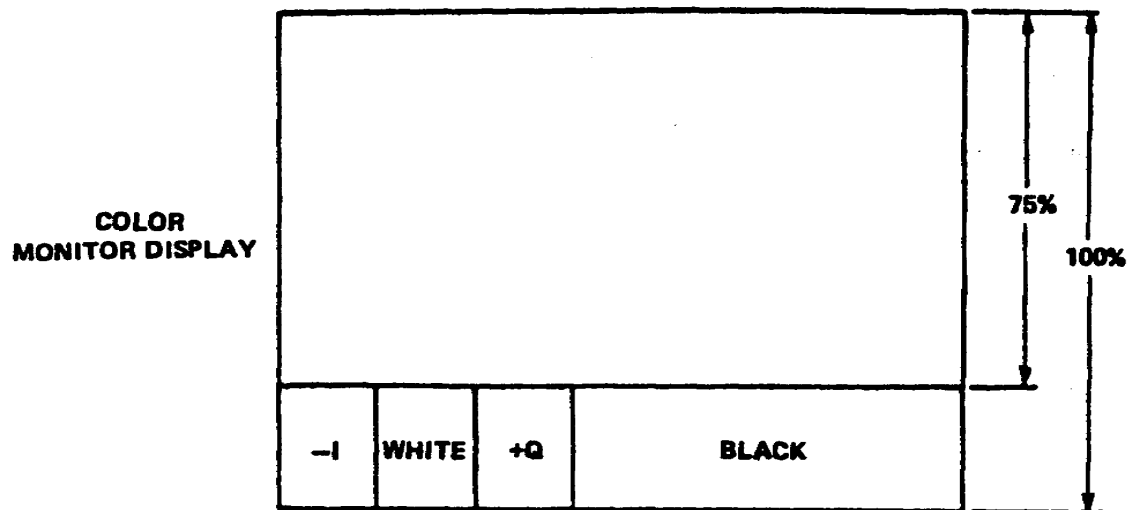
b. The remaining one-fourth of the active scanning lines in each field are used for the transmission of special test information. This information consist of a subcarrier signal envelope with a phase corresponding to -I, a reference white pulse with peak amplitude of 100 IRE, a subcarrier signal envelope with a phase corresponding to +Q, and a reference black interval (fig 2-2).

**COLOR
MONITOR DISPLAY**



IDEALIZED OSCILLOSCOPE DISPLAY (HORIZ RATE) OF PRIMARY AND COMPLEMENTARY COLORS.

Figure 2-1. The first three-fourths of the active scanning lines in the encoded color bars signal



IDEALIZED OSCILLOSCOPE DISPLAY (HORIZ RATE) OF I & Q TEST SIGNALS & REFERENCE WHITE BAR.

Figure 2-2. The remaining one-fourth of the active scanning line of the encoded color bars signal

Learning Event 2:
DESCRIBE THE ALIGNMENT COLOR BARS TEST SIGNAL

1. Alignment color bar test signal. The Society of Motion Picture and Television Engineers (SMPTE) published a journal containing an engineering committee report, ECR 11978. The recommendation specifies the purpose, format, and usage of a television picture monitor alignment color bar test signal with chroma set and black set signals.

2. The alignment color bar test signal is intended to standardize the adjustment of chroma gain, chroma phase, and black level monitor controls.

a. Chroma gain and chroma phase for picture monitors are conventionally adjusted by observing the standard encoded color bars signal with the red and green monitor guns switched off. The four visible blue bars are adjusted for equal brightness. This procedure is prone to error because of the subjective judgement necessary and especially because the blue bars are widely separated on the screen.

b. The use of the chroma set signal portion of the alignment color bar test signal greatly increases the accuracy of this adjustment since it provides a signal with the blue bars to be matched vertically adjacent to each other. Because the bars are adjacent, the eyes can easily perceive any difference in brightness. It also eliminates effects due to shading or purity from one part of the monitor to another.

c. Black level for picture monitors is conventionally adjusted by observing a known black portion of the signal and matching it to a blanked area of the signal. This procedure is also prone to error due to the subjective judgment necessary to make the match. The use of the black set signal portion of the alignment color bar test signal greatly increases the accuracy of this adjustment since it provides a positive go-no-go criterion for the proper setting. It also minimizes errors due to variations of ambient light.

3. Figure 2-3 shows the appearance of the EIA standard RS-189-A encoded color bar signal as it would appear on a picture monitor. Figure 2-4 shows the appearance of the alignment color bar test signal as it would be displayed on a picture monitor.

4. The SMPTE color bar signal consists of 67% of the field with the standard seven color bars, 8% of the field with the new chroma set signal, and the remaining 25% with the combination of the -I, white, Q, black, and the black set signal. The seven color bars signal is identical to the one used for the EIA signal, except for the percentage of the field it occupies.

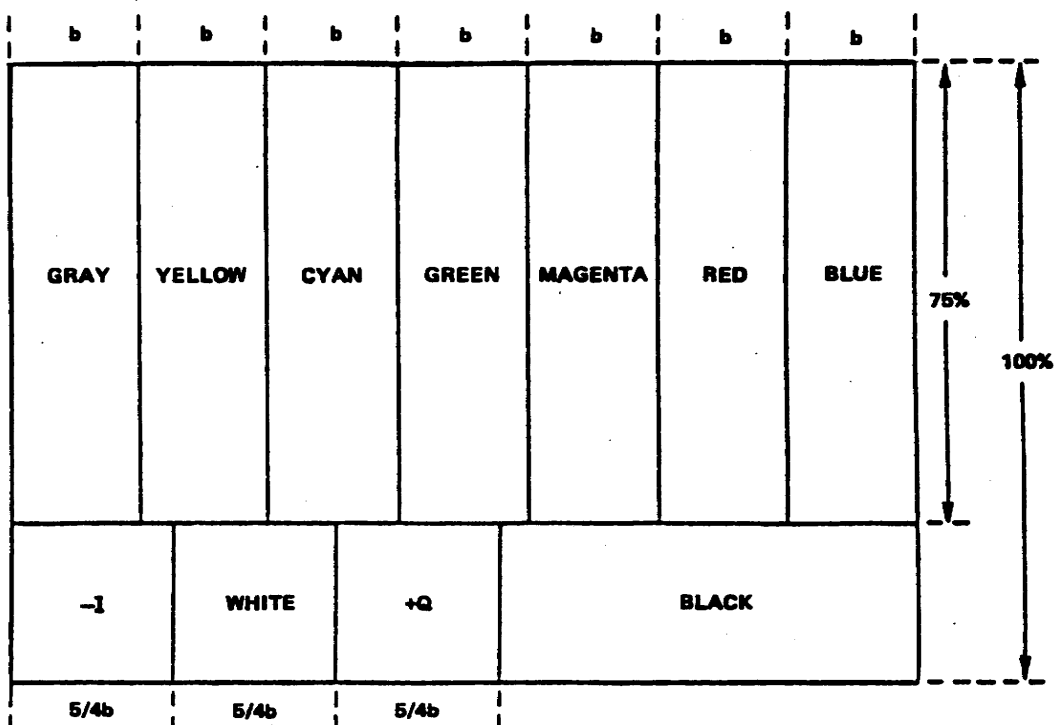


Figure 2-3. EIA standard RS-189 encoded color bars signal

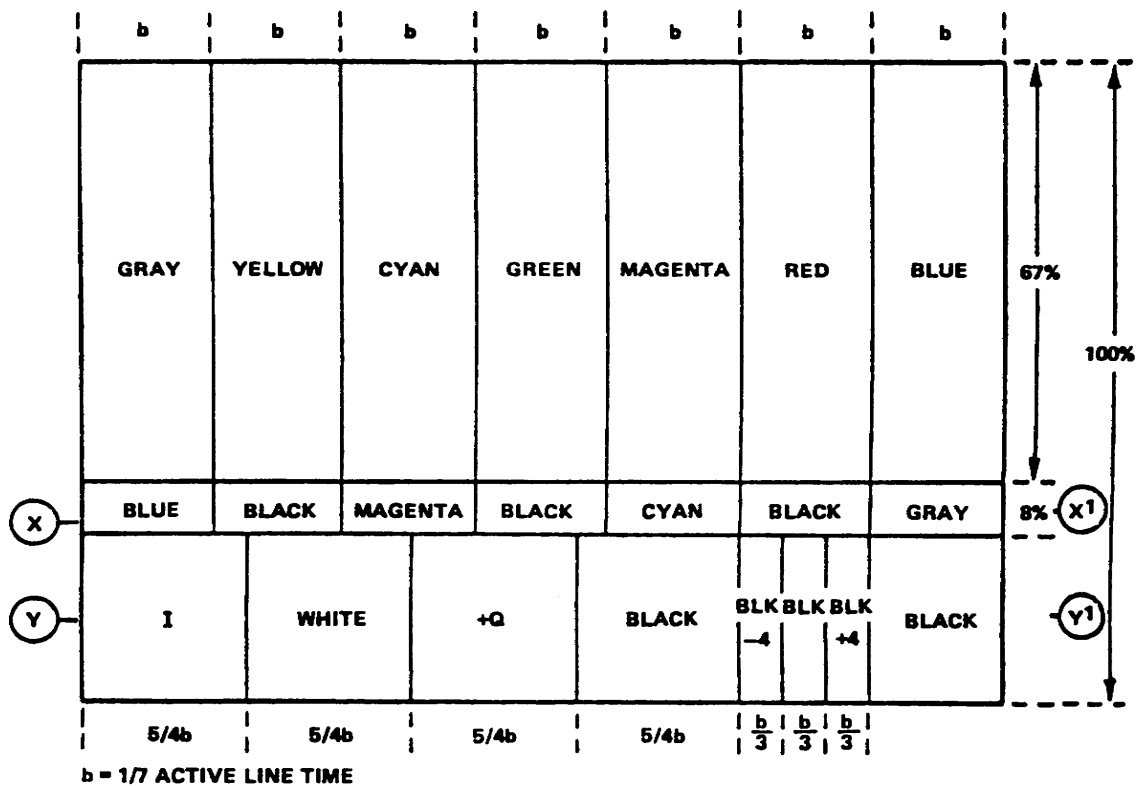


Figure 2-4. SMPTE alignment color bar test signal

a. The chroma set signal is made up of the color bars, containing blue, in reverse order. The color bars signal contains blue in every other bar (blue, magenta, cyan, and white). The color set signal consists of four color bars, separated by black bars (fig 2-5a). The color bars which contain blue are placed beneath the EIA color bars that also contain blue, but in reverse order; blue beneath white, magenta beneath cyan, and vice versa. To maintain timing, the color set signal bars are separated by black bars of equal duration.

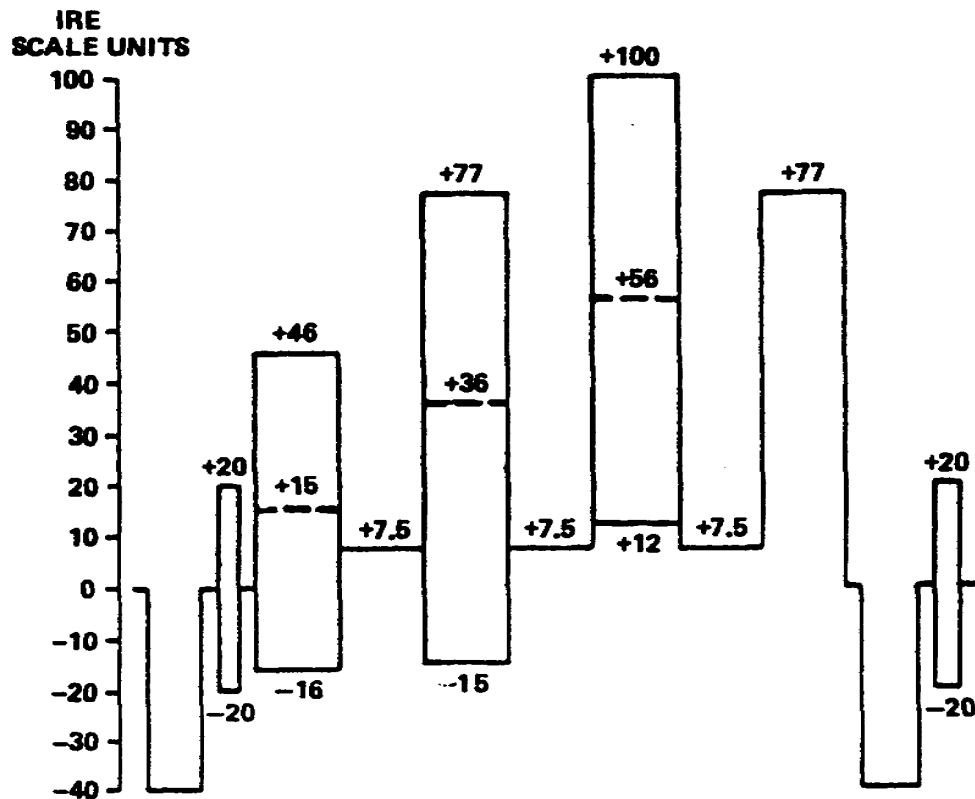


Figure 2-5a. One line of chroma set signal, X-X1

b. The -I, W, Q, and B signals, used in the SMPTE color bar signal, contain a black set signal (fig 2-5b). Its location and duration are identical to those of the red color bar. The signal itself is made up of three black amplitudes, 3.5 IRE, 7.5 IRE, and 11.5 IRE. This provides levels that are 4 IRE above and below the setup level, making it possible to compare small differences in the black level.

5. As stated earlier in this lesson, the SMPTE color bars signal is used for making phase and gain adjustments in color monitors and for verifying overall accuracy of the decoding functions. An experienced operator can learn to judge the accuracy of monitor adjustments by direct observation of the color bar pattern. For more objective measurements, the waveforms resulting from the decoding of the color bars signal can be used. For example, the phase and gain adjustments may be checked by observing the waveforms at appropriate points. The luminance component of the color bars signal provides a convenient grey scale display for setting color balance and tracking on color monitors.

a. The accuracy of matrix and phase adjustments in encoders may be readily checked by comparison of the color bars signal with the output of such a device when the signal is applied to the encoder inputs.

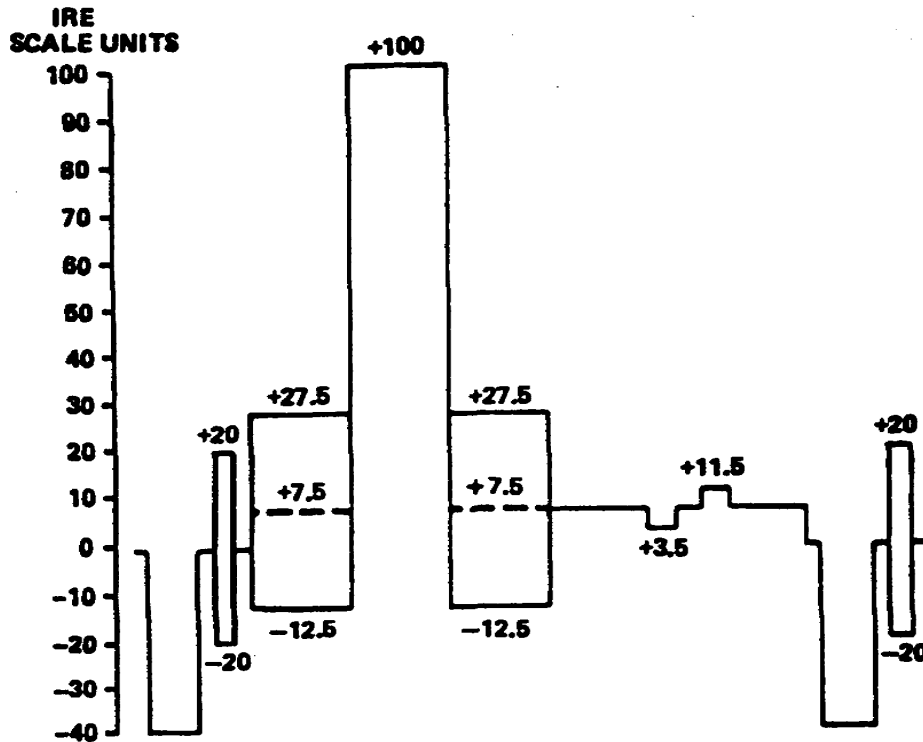


Figure 2-5b. One line of black set signal

b. The color bars signal embodies several convenient reference relationships that facilitate its use. The relative amplitudes of all signal components can be checked by direct observation of the complete waveform on a television waveform monitor. A waveform monitor should display the relationships a, b, and c, illustrated in figures 2-6 and 2-7.

(1) The positive peak levels of the yellow and cyan bars are nominally equal to reference white level.

(2) The negative peak level of the green bar is nominally equal to reference black level, when 7.5% setup is used

(3) The negative peak levels of the red and blue bars are nominally equal (-16 IRE).

c. The relative phases and amplitudes of the chrominance portion of the signal are generally checked by observation on a vectorscope. The quadrature phase relationship between I and Q components of the encoded signal can be conveniently checked by observation of the -I and Q signal axes (fig 2-8).

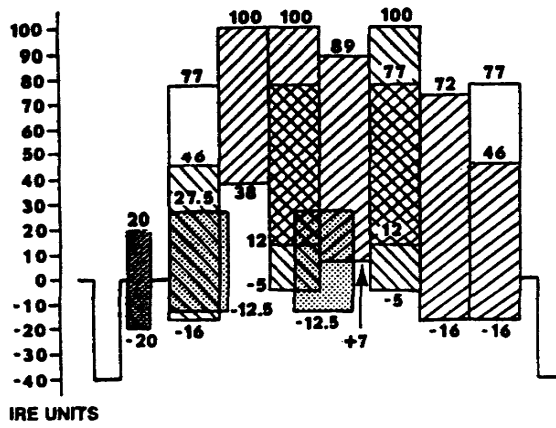


Figure 2-6. Chroma amplitudes

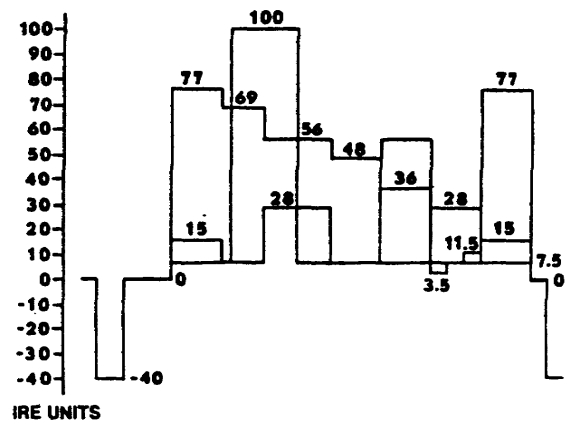


Figure 2-7. Luminance levels

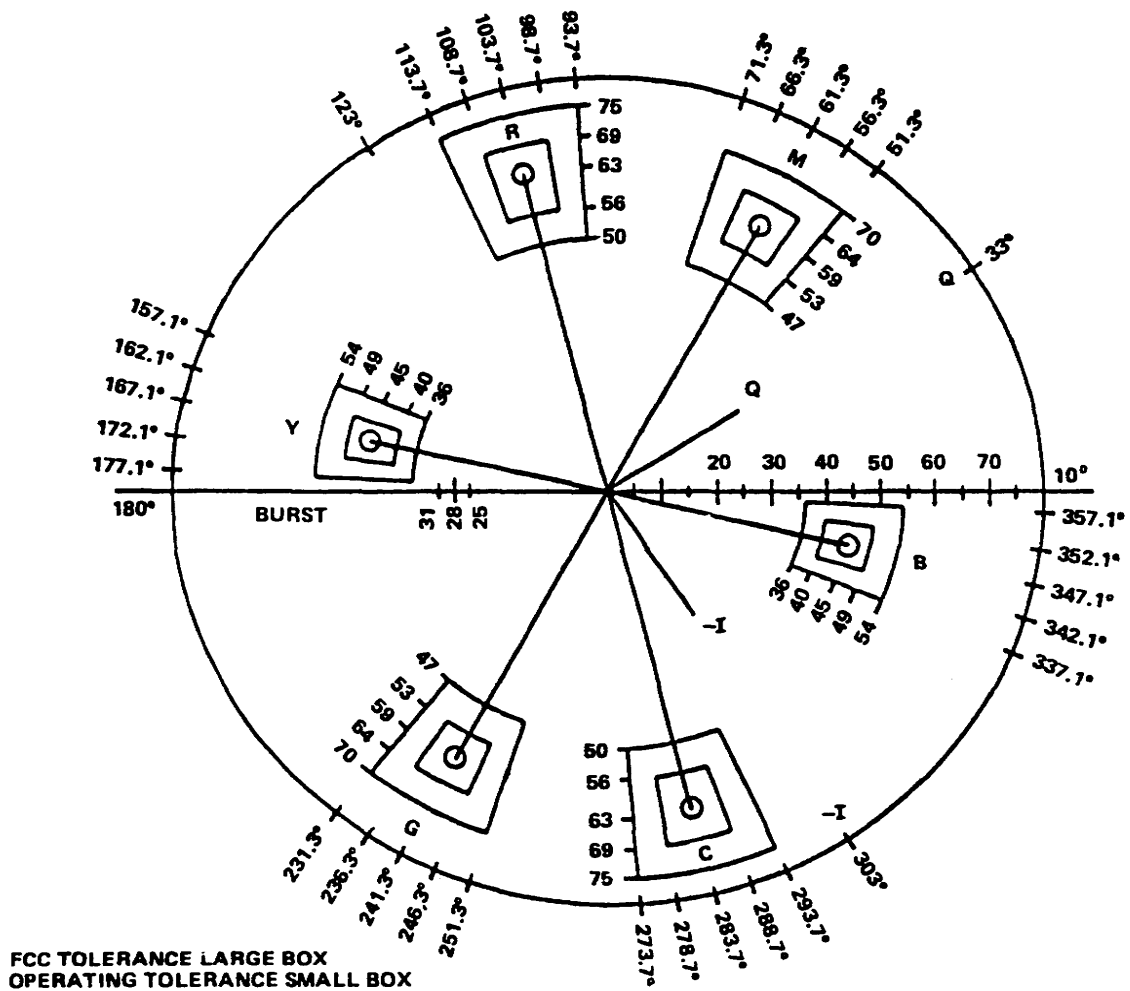


Figure 2-8. Vectorscope graticule

6. The chroma and black set signals are used to set the chroma, hue, and brightness of a picture monitor. The chroma and hue controls are set by comparing the blue chrominance from the color bars to the blue chrominance of the reverse color bars. The only required setup to making these adjustments is that the monitor must be in a blue-only mode. This is done by turning off the red and green screens.

7. The procedure for adjusting a monitor is as follows:

- a. Turn off the picture monitor's red and green screens.
- b. Compare the extreme left or right blue bar with the reverse color bar segment directly below it. Adjust the monitor chroma control until there is no color difference (fig 2-9).
- c. Next, compare either of the center blue bars to the reverse color bars segment directly below it. Adjust the monitor hue control until there is no color difference (fig 2-9).

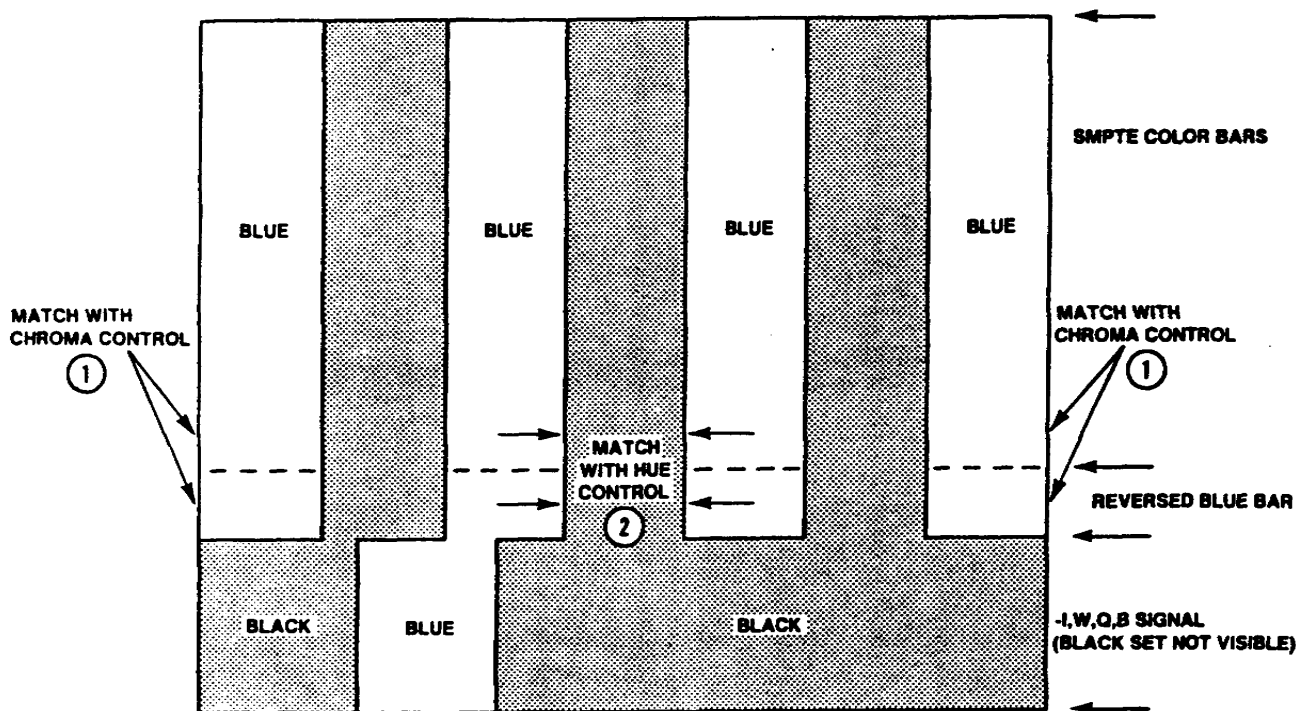


Figure 2-9. SMPTE chroma and hue set matching diagram

d. With all three of the monitor's screens turned on at ambient viewing conditions, adjust the brightness control until the gray 11.5 part of the black set signal is just visible, but the difference between the blacker than black (3.5 IRE) and the black (7.5 IRE) segments is not discernable (fig 2-10).

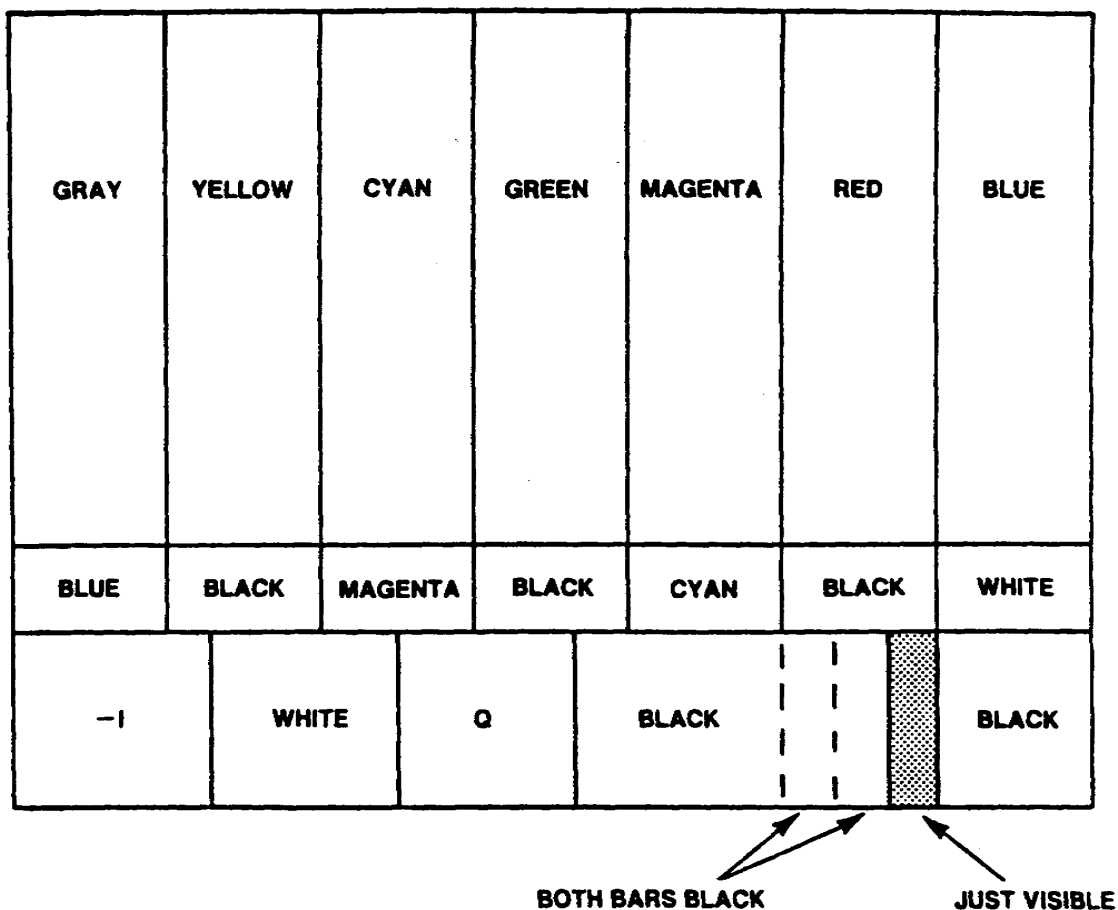


Figure 2-10. SMPTE black set matching diagram for brightness

Learning Event 3:

DESCRIBE FULL FIELD AND GATED-RAINBOW PATTERN COLOR BARS

1. The full field color bars signal consists of eight equal intervals arranged in descending order of luminance amplitudes as follows: Gray, Yellow, Cyan, Green, Magenta, Red, Blue, and Black (fig 2-11). This signal is normally used for checking luminance, hue, and saturation parameters of the television system.

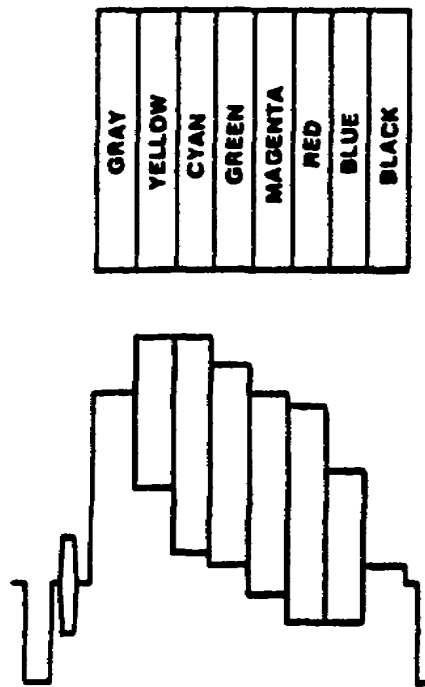


Figure 2-11. Full field color bars signal

2. The paragraphs describing the EIA and SMPTE color bars apply to the full field color bars, with exception of use of the -I, W, Q, B, chroma set, and black set signals. The full field color bars does not utilize the latter signals.

3. Certain color bar generators like the Tektronix TSG1 and TSG7 can alter the sequence of the full field color bar pattern for various test applications. The following is a sample of some of the different applications:

a. Split-field Y reference signal. This signal provides color bars in the first half of the field and luminance only gray scale in the second part of the field (fig 2-12). The split-field Y reference signal is especially useful for checking color balance and tracking of color picture monitors, chrominance-luminance delay, and chrominance-luminance intermodulation.

b. Split-field red signal. This signal includes the color bars in the first half of the field, while the second half of the field contains the red color bar signal only (fig 2-13). Video system noise, VTR head-banding, and red phase are readily seen using the solid red split field signal.

c. Split-field reverse signal. This signal consists of standard color bars in the first half of the field, followed by color bars in reverse order in the second half of the field (fig 2-14). This signal is useful in checking velocity modulation in video tape recorders.

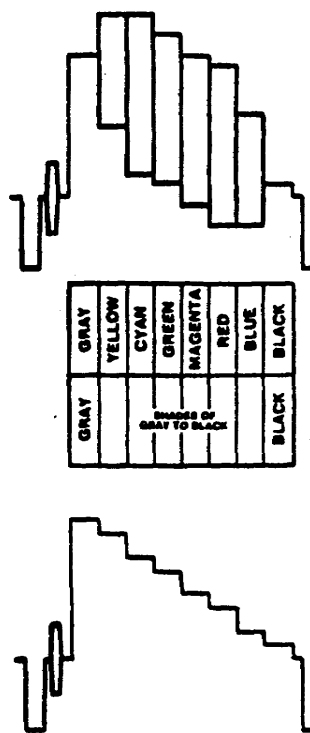


Figure 2-12. Split-field Y ref

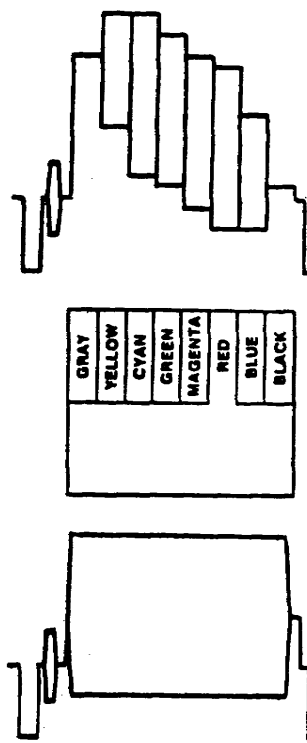


Figure 2-13. Split-field red

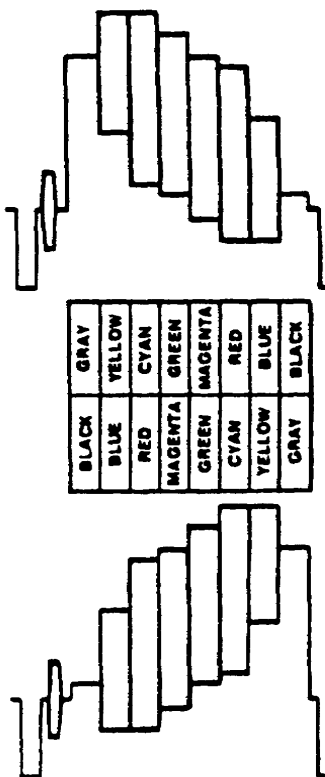


Figure 2-14. Split-field reverse

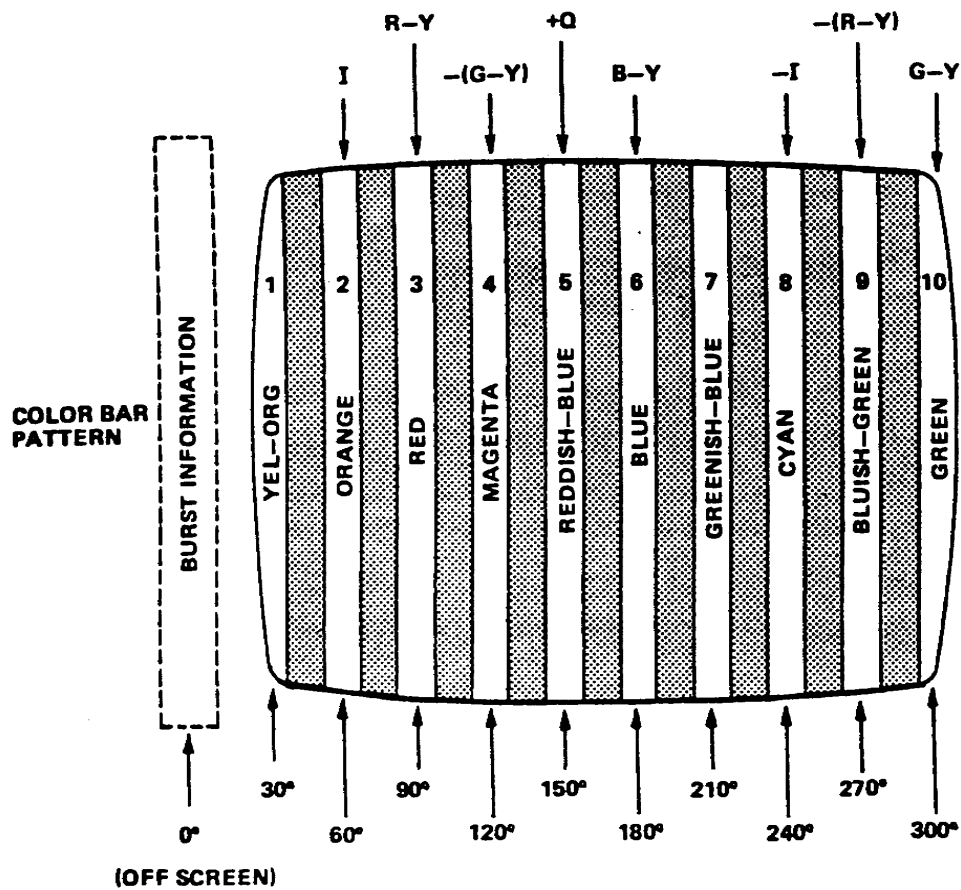
4. The gated rainbow pattern, is a ten-color bar pattern and is shown in Figure 2-15a as it appears on a TV receiver. In Figure 2-15a the sequence of each color is separated by a black vertical line. The black line is caused by gating off the signal between colors. The color bars are each separated in phase by 30 degrees, beginning with burst phase at 0 degrees. There is no bar corresponding to 330 degrees.

a. The appearance of the gated rainbow signal on an oscilloscope is shown in Figure 2-15b. Note the color burst signal, the ten color-bar signals, blanking between the color signals, and horizontal sync pulses. The color burst signal is on the back porch of horizontal sync the same as a TV station signal. However, there is no Y signal component associated with the gated-rainbow color bars. The gated-rainbow color bar pattern displays the bars with equal saturation and brightness levels on the color picture tube.

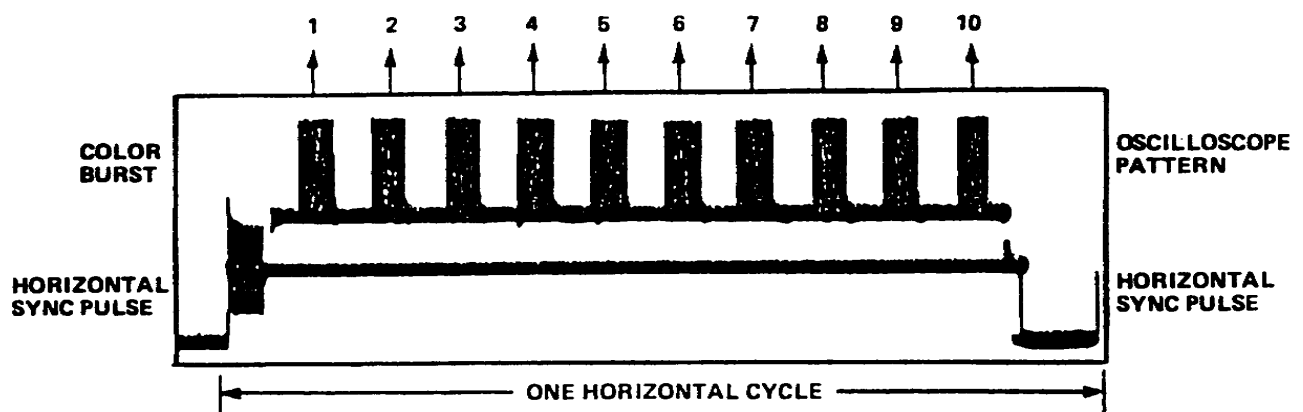
b. Another point about the gated-rainbow pattern is that the subcarrier frequency is exactly 3.563811 MHz. This differs by precisely 15 734 Hz from the 3.579545 color subcarrier frequency generated in the color TV receiver. As a result of this precise frequency difference, the phase of the color pattern signals shift through exactly 360 degrees for each horizontal line. Thus, the pattern repeats identically on every line, forming the vertical color bars.

(1) The comparison between the two subcarrier signals is performed by two color demodulators in the TV receiver. The output signals from the color demodulators and color matrix (now at video rate) are fed to the red, green, and blue guns of the color picture tube to produce the actual color bars.

(2) The gated-rainbow pattern color bar signal is generally used for the servicing of TV receivers. Some of the basic applications of this signal are confined to adjusting color automatic frequency circuits, phase control circuits, color amplitude circuits, and color synchronizing circuits.



(A)



(B)

Figure 2-15A and 2-15B

- (A) Picture monitor presentation
(B) oscilloscope display

Lesson 2
PRACTICE EXERCISE

1. What is a common use of the encoded color bars signal?
 - a. Rapid check of servo systems
 - b. Performing timing checks
 - c. Linearity checks
 - d. Resolution checks
2. What is the chrominance modulation percentage for the green luminance level?
 - a. $\pm 31\%$
 - b. $\pm 41\%$
 - c. $\pm 44\%$
 - d. $\pm 51\%$
3. What percentage of the field contains color bars in the SMPTE signal?
 - a. 8%
 - b. 50%
 - c. 67%
 - d. 75%
4. What two chrominance values have peak levels equal to the white reference level?
 - a. Green and gray
 - b. Gray and yellow
 - c. Yellow and cyan
 - d. Cyan and green
5. How many intervals are contained in full field color bars?
 - a. 6
 - b. 7
 - c. 8
 - d. 9
6. How many degrees in phase is each color separated in the gated-rainbow pattern?
 - a. 10
 - b. 20
 - c. 30
 - d. 40

Lesson 3
DESCRIBE THE BASIC ELECTRONIC TELEVISION TEST SIGNALS

TASK

Describe and identify five basic electronic television test signals.

CONDITIONS

Given information and illustrations pertaining to the basic television test signals.

STANDARDS

Demonstrate competency of task skills and knowledge required for identification of the test signals discussed in this lesson, by correctly responding to 80% of the multiple-choice test questions covering five basic electronic television test signals.

REFERENCES

None

LEARNING EVENT 1:

DESCRIBE THE MULTIBURST SIGNAL AND GRAY-SCALE LINEARITY TEST SIGNAL

1. The multiburst signal consists of a white-flag reference pulse, followed by six bursts of individually keyed sine waves in ascending frequency order. This signal is useful as a quick systems check for rapid visual presentation of amplitude-frequency response, usually to 4.2 MHz.

a. The basic block diagram of a multiburst generator is shown in Figure 3-1. The unit normally receives composite sync and composite blanking from the local sync generator. For field use, self-contained (internal) is usually available.

b. Horizontal drive is derived from incoming sync and used to trigger and synchronize six individual sine wave oscillators. It is also used to generate a white-flag pulse at the beginning of active horizontal sweep.

(1) Normally, the white-flag pulse width is adjusted for 8 microseconds. The trailing edge of this pulse triggers

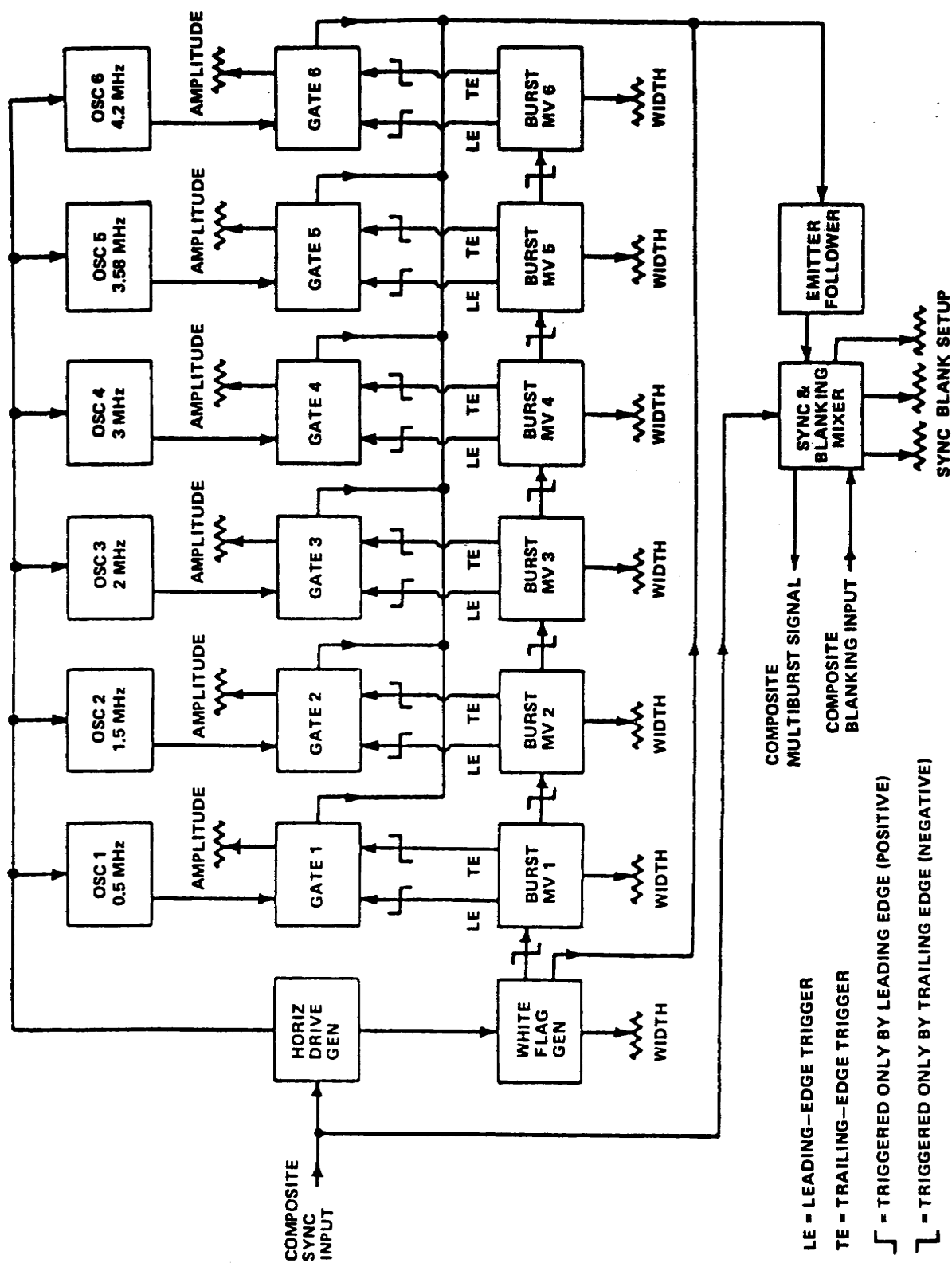


Figure 3-1. Basic block diagram of a multiburst generator

burst multivibrator MV1 on; this multivibrator is set to produce a pulse width of about 7 microseconds, as are all following multivibrators.

(2) The leading edge of the pulse from MV1 gates the signal from oscillator 1 on, and the trailing edge gates the same signal off. The trailing edge also gates MV2 on, and so forth. Thus, the output signal consists of the white-flag and six sine wave bursts on a time-shared basis during each line interval.

c. The signal and frequencies from left to right consist of white-flag, 0.5, 1.5, 2, 3, 3.58, 4.2 megahertz signals as illustrated in Figure 3-2. The multiburst test signal is inserted on the odd field of line 17 of the vertical blanking interval. The frequencies shown are those normally used for a standard multiburst signal. However, some multiburst signal generators facilitate multiburst test signals with frequencies as high as 12 MHz.

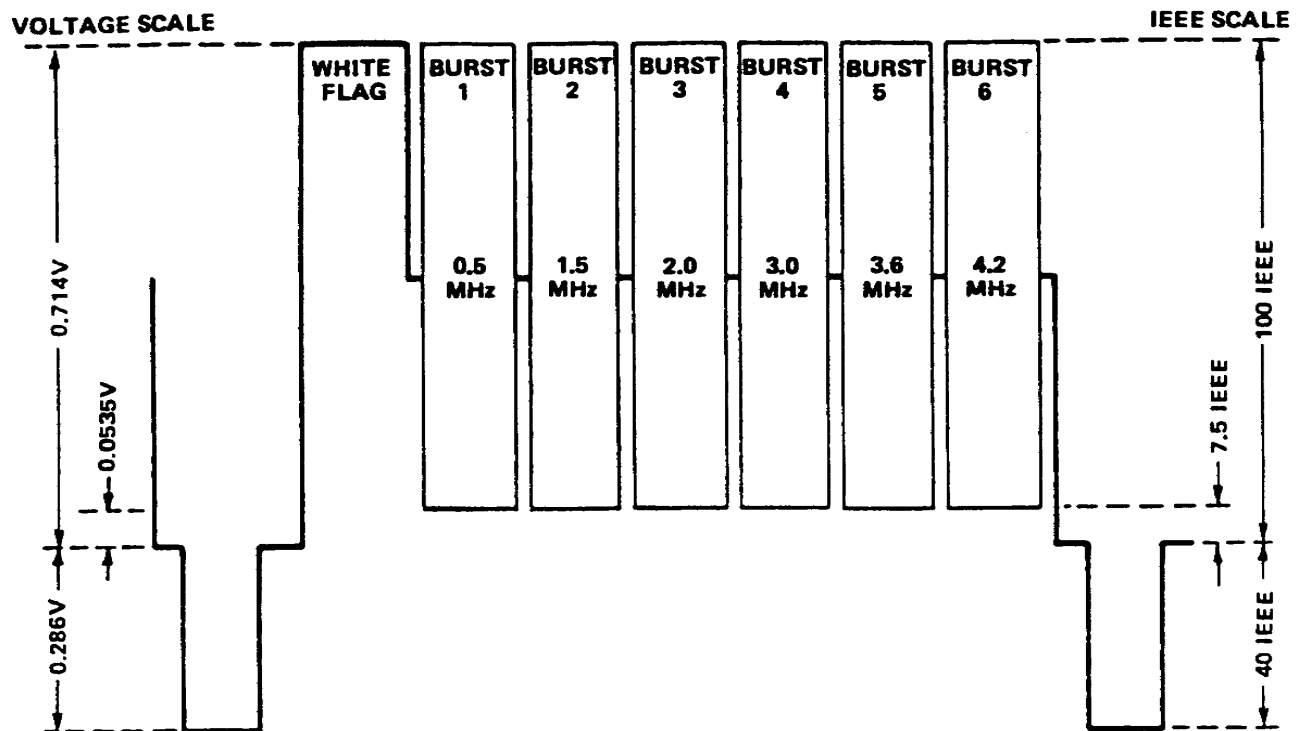


Figure 3-2. Standard multiburst signal

2. The transmission of video information over long lengths of cable degenerates the signal through frequency-dependent losses of the cable. One application of the multiburst signal is to set equalization controls on distribution amplifiers with provision for compensating cable losses.

3. Another frequently used application of the multiburst signal is in the evaluation of common carrier transmission. The multiburst signal is VITS keyed in the vertical interval for insertion into a televised program. This allows for in-service testing of the transmission path.

4. The gray-scale linearity (stairstep or sawtooth) signal is used to explore the entire picture region from black to white by means of linear variation of amplitude with time. It is useful in measuring nonlinear distortion in the system transfer characteristic.

a. Either a stairstep with well-controlled rise-time steps, or a line-duration sawtooth is suitable for nonlinear measurements. A stairstep signal consisting of 10 steps repeated every line and the sawtooth ramp is shown with subcarrier in Figures 3-3a and 3-3b. Small non-linearities throughout the grayscale are more easily observed on this type of signal than is possible with the plain sawtooth signal, since each of the 10 steps falls exactly on a graticule line when an IRE scale is used.

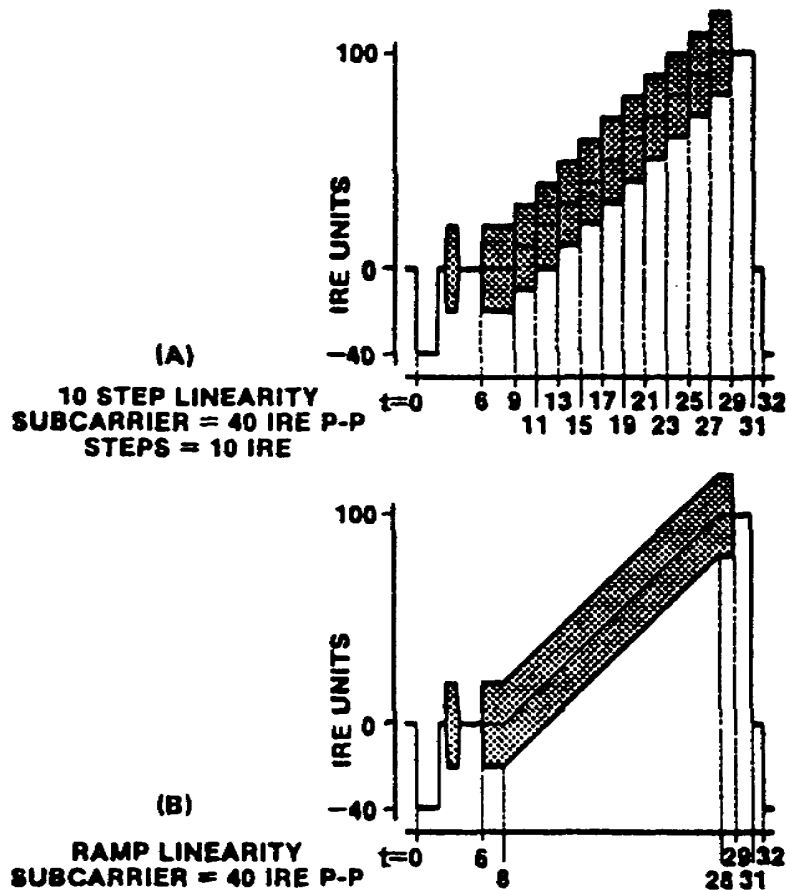


Figure 3-3a and 3-3b
(A) 10 Step linearity with subcarrier
(B) Sawtooth ramp with subcarrier

b. Sensitivity of measurement for either the stairstep or sawtooth is increased by superimposing 20 IRE units of 3.58 MHz subcarrier. Any non-linearity then results in amplitude variations of the pulses when observed through a high pass filter. This technique also allows measurement of non-linearity at the color subcarrier frequency relative to low-frequency steps. Such distortion is termed "differential gain".

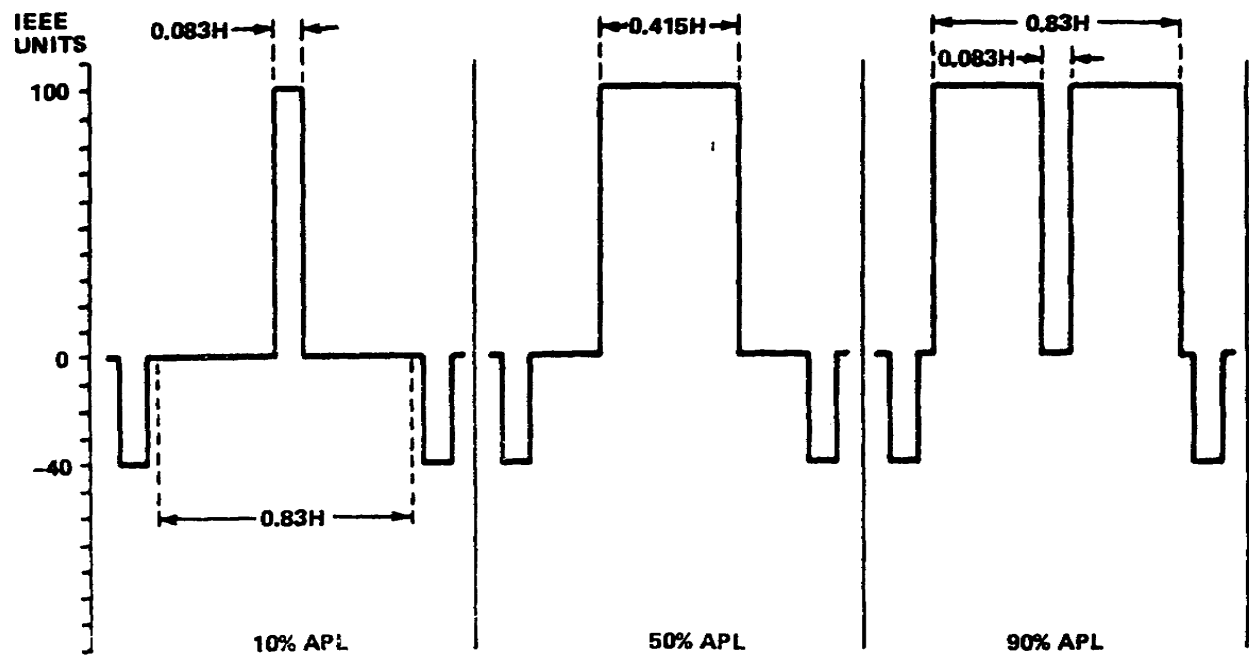
5. Grayscale test signals must be able to convey information at low and high frequencies over every possible picture value likely to be encountered. This picture value is interpreted not only by amplitude, frequency, and phase response of the system but also on a widely varying duty cycle. Duty cycle in pulse work simply correlates the pulse duration with the pulse-repetition frequency (PRF):

$$\text{Duty cycle} = \text{pulse duration} \times \text{PRF}$$

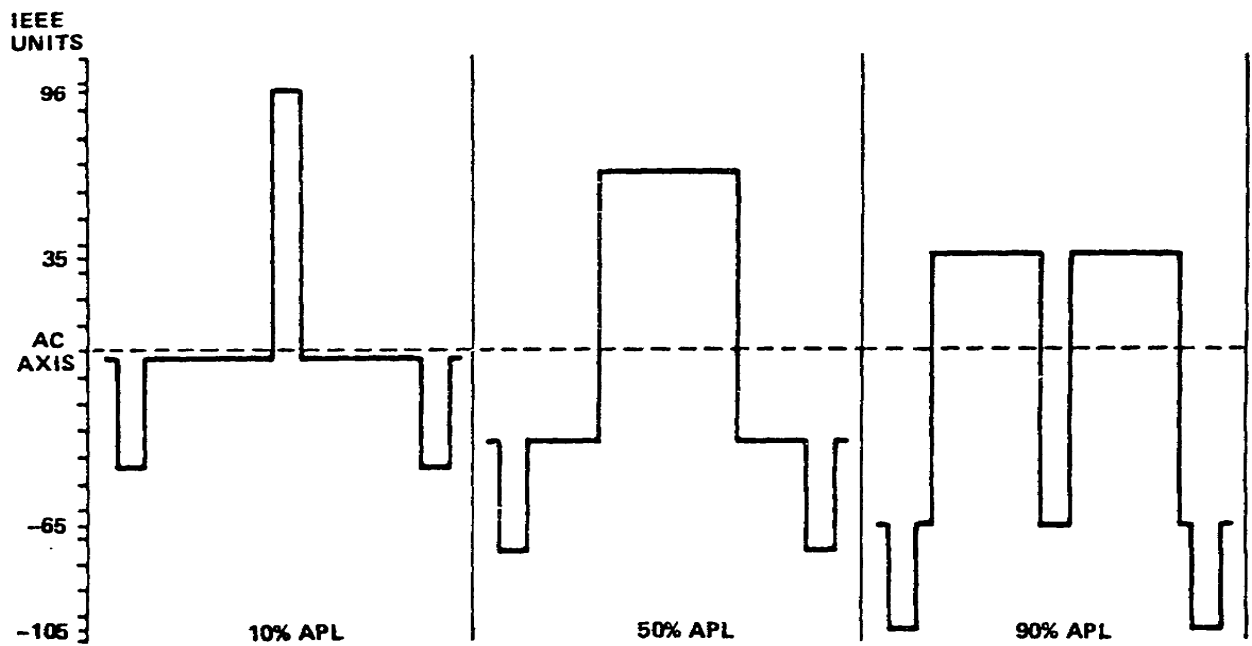
For television, this effect is most appropriately termed "average picture level" (APL). The amplitude, frequency, and phase response of the system must be held within tolerable limits over the gamut of APLs encountered in practice.

6. Even experienced TV engineers sometimes forget that a 1-volt peak-to-peak video signal must be transferred through an amplifier capable of handling twice this range with little degradation (figure 3-4). Although the DC component is restored at such points as blanking insertion, sync insertion, gamma-correction stages, and transmitter modulators, practically all stages in between, as well as distribution and stabilizing amplifiers, are AC coupled.

a. Waveform monitors such as those in master monitor positions use clamping circuits to hold blanking level at the reference graticule line. Some scopes designed for waveform monitoring allow switchable operation, either clamped or unclamped. Even though the monitoring CRO is clamped, "bounces" of a momentary duration will occur upon drastic scenic changes in APL, and this is normal. Most scopes for routine testing and servicing do not use DC restorers or clamping circuits.



(A) DC COUPLED (DC COMPONENT)



(B) AC COUPLED (NO DC COMPONENT).

Figure 3-4. Variation of signal excursions with APL

b. Figure 3-5 presents the specifications for the stairstep generator test signal when provided with variable APL. The linearity test signal generator sometimes includes provisions for inserting horizontal sync only. In this case, the blanking width should be set for 25 percent of a line period (15.8 microseconds). If fed through equipment where composite station blanking is inserted, the normal station blanking pulse should cover the test generator blanking output (maximum of 11.4 microseconds horizontal with 7 percent vertical blanking).

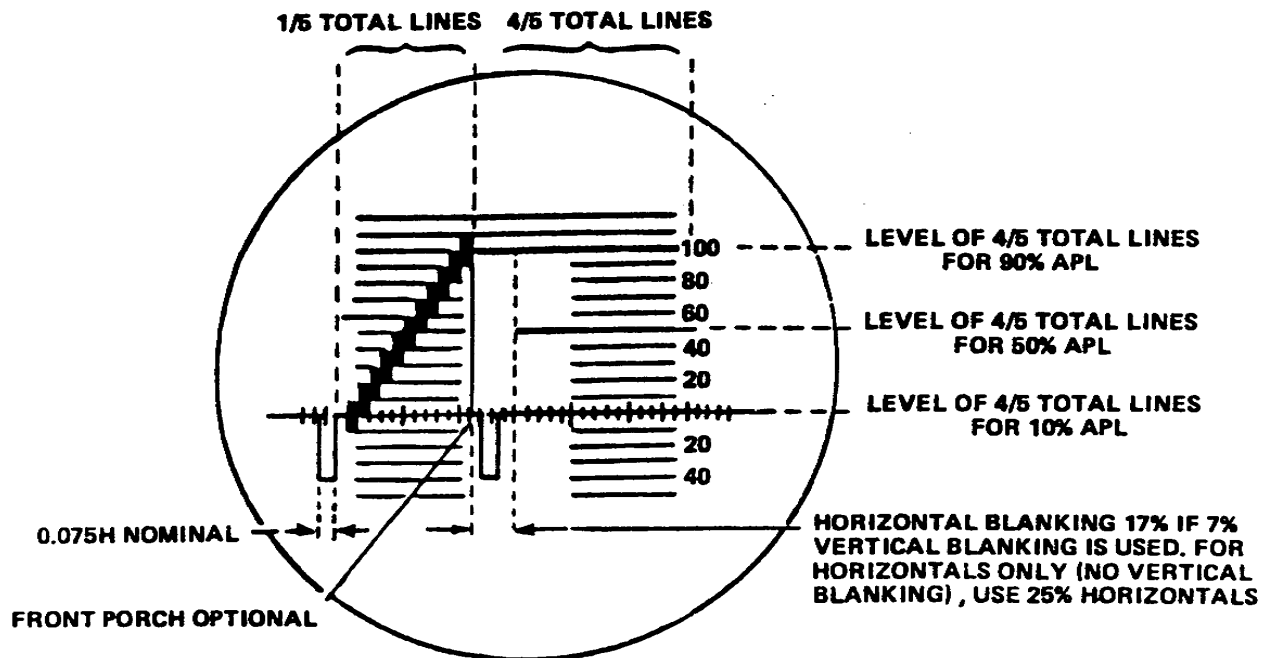


Figure 3-5. Specification for the stairstep signal

Learning Event 2:

DESCRIBE THE VERTICAL INTERVAL TEST SIGNAL (VITS) AND THE VERTICAL INTERVAL REFERENCE SIGNAL (VIRS)

1. Vertical Interval Test Signal (VITS). In the standard television signal there is, immediately following each vertical-synchronizing interval, a series of 20 or 21 horizontal lines which carry no video information. In a receiver or monitor, these lines provide an interval which ensures that the vertical retrace is complete before any video information is received and are intended to perform no other function.

a. The lines normally appear on a monitor as a gray band across the top of the picture; usually this band is adjusted so that it is behind the mask. While these are actually horizontal lines, they are conveniently considered as a part of the vertical-synchronizing interval.

b. By using suitable keying equipment, it is possible to introduce information onto one or more of these blank lines to be transmitted to a specific destination. If desired, this information can be blanked out at the receiving point before the signal is put on air, or since it is not normally visible on the receiver, it may be broadcast.

c. The NTSC established VITS on lines 17 and 18, and line 19 for transmission of the VIR test signals. The Major networks and Bell Systems, working through the Network Transmission Committee, are working to development methods to place other test and coded signals into the other lines of the vertical blanking interval.

d. The advantage, of course, of introducing these signals in the vertical interval is that a system can be checked in service, and digital information can be passed along the transmission links while a program is actually being transmitted. To this end, it is also desirable that all these signals be available for nearly simultaneous observation, and this is the ultimate objective.

2. The specification and standards for the VITS are illustrated in Figures 3-6, 3-7 and 3-8.

3. Vertical interval reference (VIR) signal. The VIR signal is a program-related reference signal inserted during the vertical blanking interval of a color television program. It is intended to reduce undesirable variations in color throughout the television system by assisting television producers, technicians, and operators in adjusting various signal parameters so that different programs and program segments have similar amplitude and phase characteristics whether viewed sequentially on the same channel or on different channels.

a. The VIR signal is also intended to be associated with televised programs as an operational tool for checking the parameters of the programs and is a reference for the programs being transmitted. The VIR signal, however, is not intended to provide quantitative data on transmission distortions.

b. Because the VIR signal is intended to be associated with a particular program, it should only be inserted into the program signal at a point in the video system where both the correct amplitudes and phase of the composite color signal are established and the artistic judgement is made that color reproduction is as desired. Thus, it is the responsibility of each production organization to make that artistic judgement.

(1) Once the VIR signal is inserted in this manner, it represents a certification of and a reference for the program signal. After the VIR signal has been inserted into the program signal, it must be treated exactly like the program signal in all equipment through which it passes so that the VIR signal will always correspond to the program.

(2) Then, when adjustments are made to restore a VIR signal to its proper characteristics at any point in the video system, the program will have been re-established to essentially the same characteristics as when it was initially certified.

(3) The VIR signal inserted at the point of certification should remain with the program to its final destination. Exceptions to this practice should be made only at a point of recertification, such as an assembly point of various program segments.

c. One important application of the VIR signal is in the adjustment of a reproduced video tape recording. This usage applies to all video tape formats used for broadcasting and is important both for the playback of a single tape and the sequential playback of several short commercial program segments. The VIR signal will be added to each video tape at a point prior to the duplication of the final release copies. This will be done after the correct signal parameters are established and any necessary artistic judgements have been made as to proper color reproduction. The program then will have been certified.

d. When a VIR signal is present on a signal to be recorded on a video tape recorder, the VIR signal as passed by the video tape recorder shall be considered as reference for either manual or automatic adjustment of the reproduced signal characteristics listed below:

Luminance amplitude -----	50 Peak IRE
Black level amplitude -----	7.5 IRE
Sync amplitude -----	-40 Peak IRE
Chrominance -----	90 Peak IRE
Color burst amplitude -----	+/- 20 IRE

e. The VIR signal will be recorded by only one head of a multihead video tape recorder. Since it is essential to balance head output levels, this characteristic does not reduce the usefulness of the VIR signal. The waveform of the VIR signal is shown in Figure 3-9.

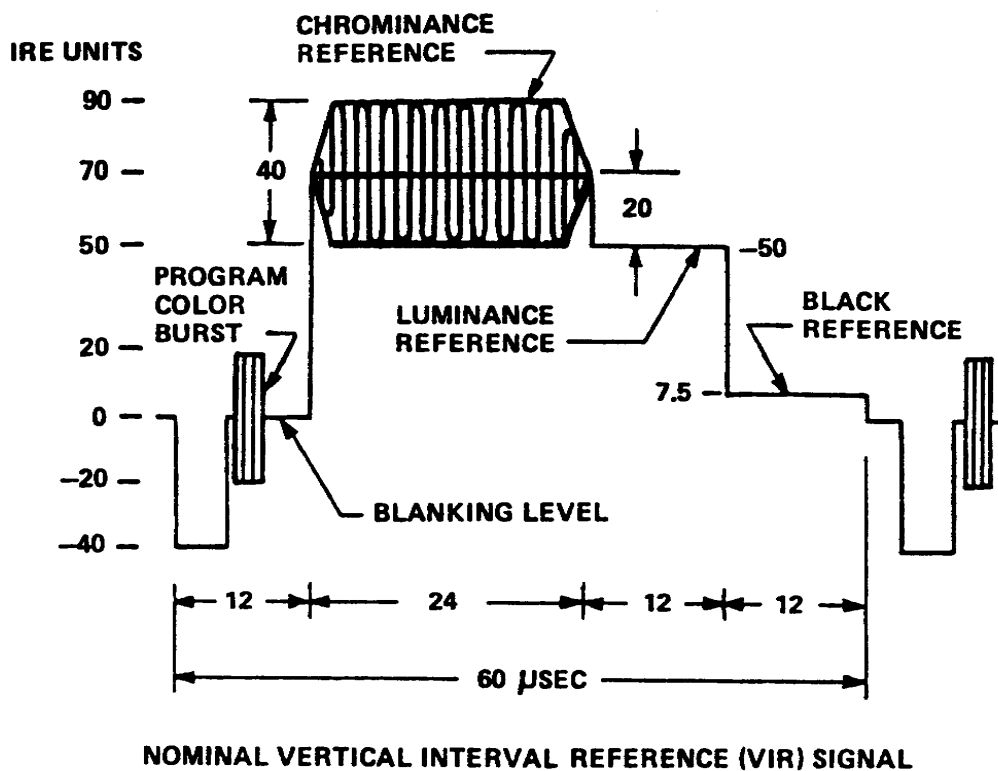


Figure 3-9. Standard vertical reference signal

Learning Event 3:
DESCRIBE THE SIN2 WINDOW SIGNAL

1. The sin2 window signal is normally accompanied by a half-line and half-field window pulse, which is sometimes termed a "bar". Figure 3-10 shows a basic block diagram of a generator which also includes the modulated 20T pulse.

a. The timing circuit driver (monostable multivibrator) is triggered from the leading edge of sync and generates a rectangular pulse of about 16 microseconds duration. The trailing edge of this pulse initiates the operation of the pulse and window timing circuit, which positions the pulse and window leading and trailing edges relative to sync. Blanking pulses are used to inhibit the timing circuit action during field blanking. The output of the impulse generator is an 18-nanosecond spike which becomes the Tpulse after shaping in the T-pulse shaping network. A switch is normally provided so that either 2T, T, or T/2 pulses are available. Note also that the leading and trailing edges of the window signal, since they pass through the same shaping filter, have the same rise and fall times as the associated T pulse.

b. The 20T pulse is shaped by appropriate sin2 filters and applied to a double-balanced 3.58-MHz modulator in a manner similar to that in which chroma information modulates the color subcarrier in an encoder. Thus, both the 3.58-MHz carrier and the original 20T pulse are cancelled, and the output is the modulated sidebands of the carrier. This produces the modulated T pulse envelope (fig 3-10). Finally the original 20T pulse is linearly (resistively) added to the modulated pulse, producing the symmetrical pulse with a base line.

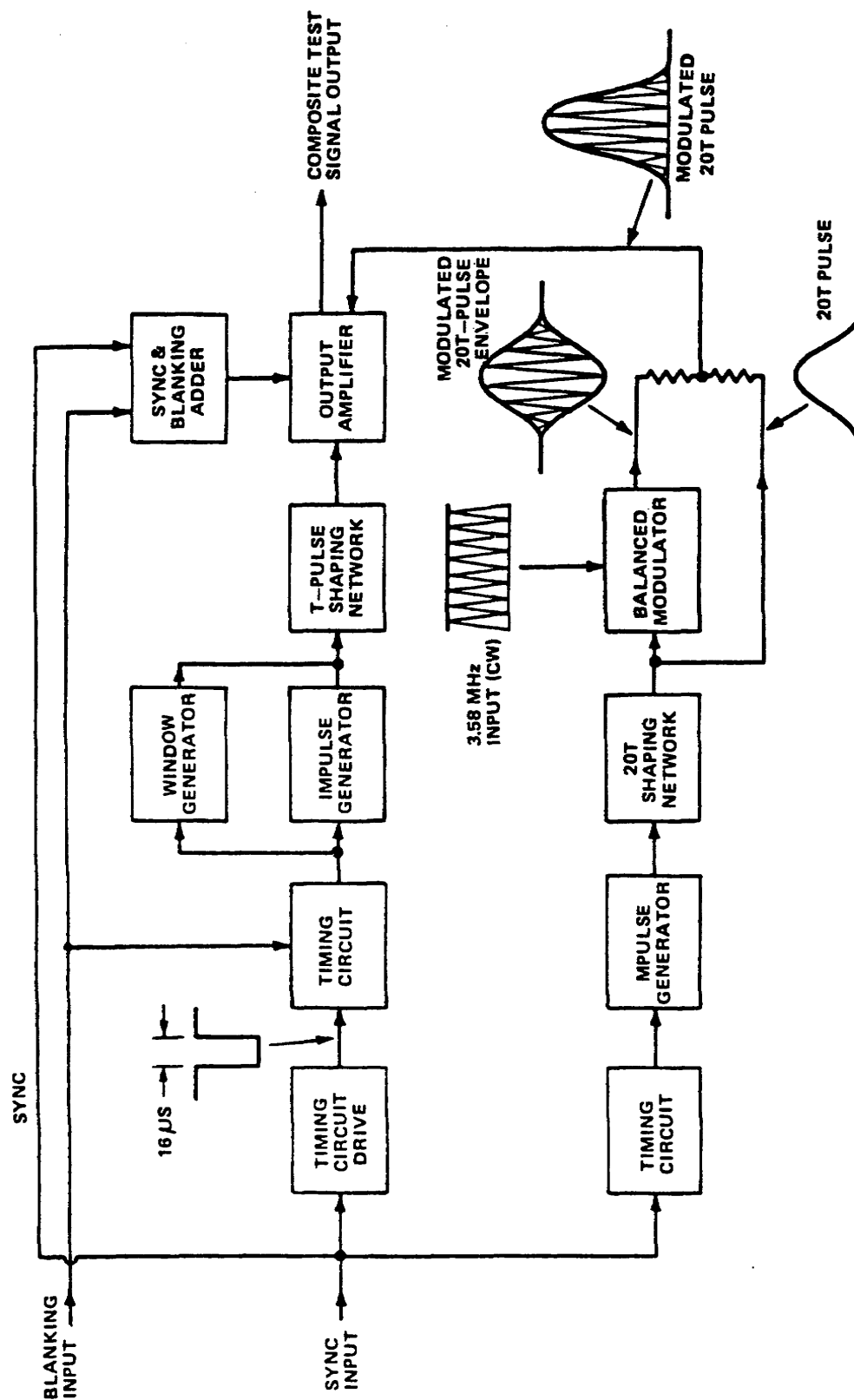
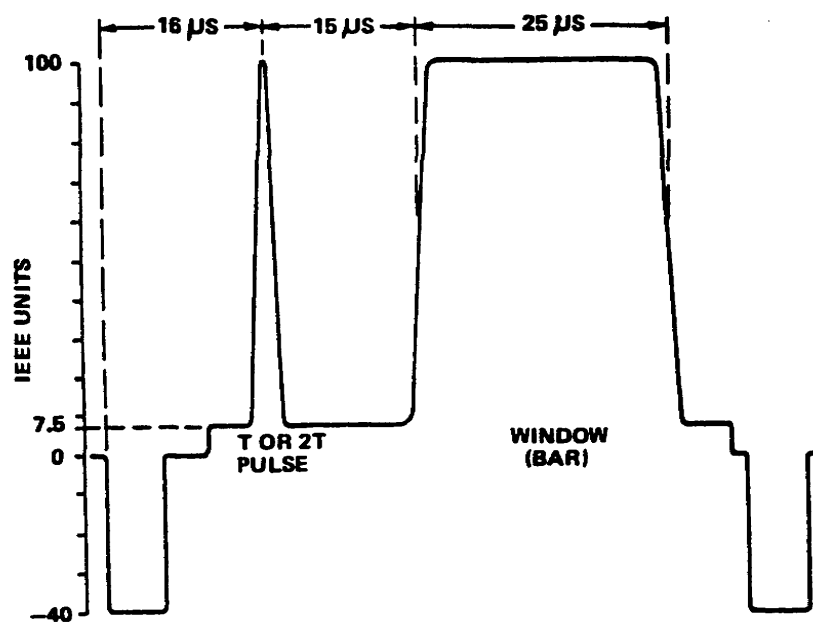
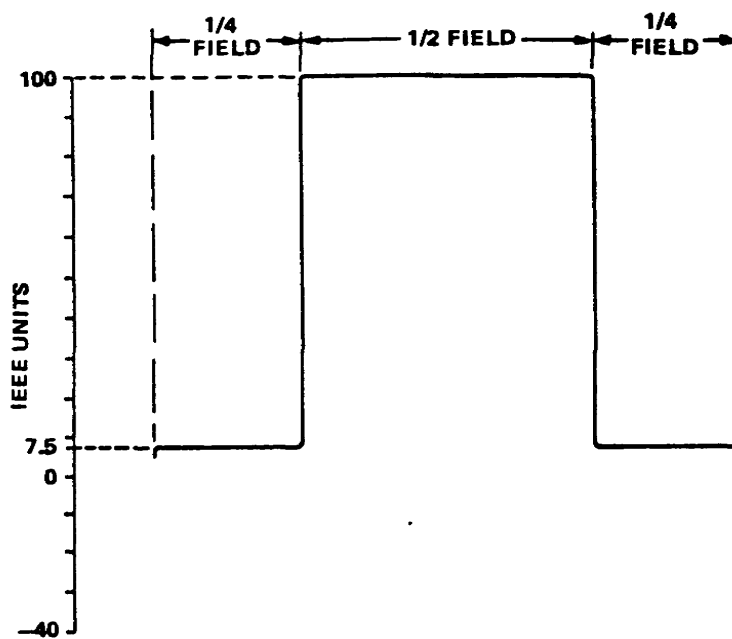


Figure 3-10. Basic block diagram of sin2-pulse and window generator

(1) Figure 3-1a, gives the line-rate specifications of the standard pulse-bar signal, with relative timing from the leading edge of horizontal sync. Figure 3-11b, gives the field rate specifications of the same signal.



(A) LINE RATE.



(B) FIELD RATE.

Figure 3-11. Pulse-window signal specifications

(2) Figure 3-12, illustrates the addition of the modulated 20T pulse to the composite test signal. Figure 3-12 displays two consecutive lines in which the window occupies one line and the pulses are contained in the following line. In Figure 3-13, the pulse and window are generated in each single line. In some generators, the positions of the pulses are interchanged; i.e., the T or 2T pulse precedes the modulated 20T pulse.

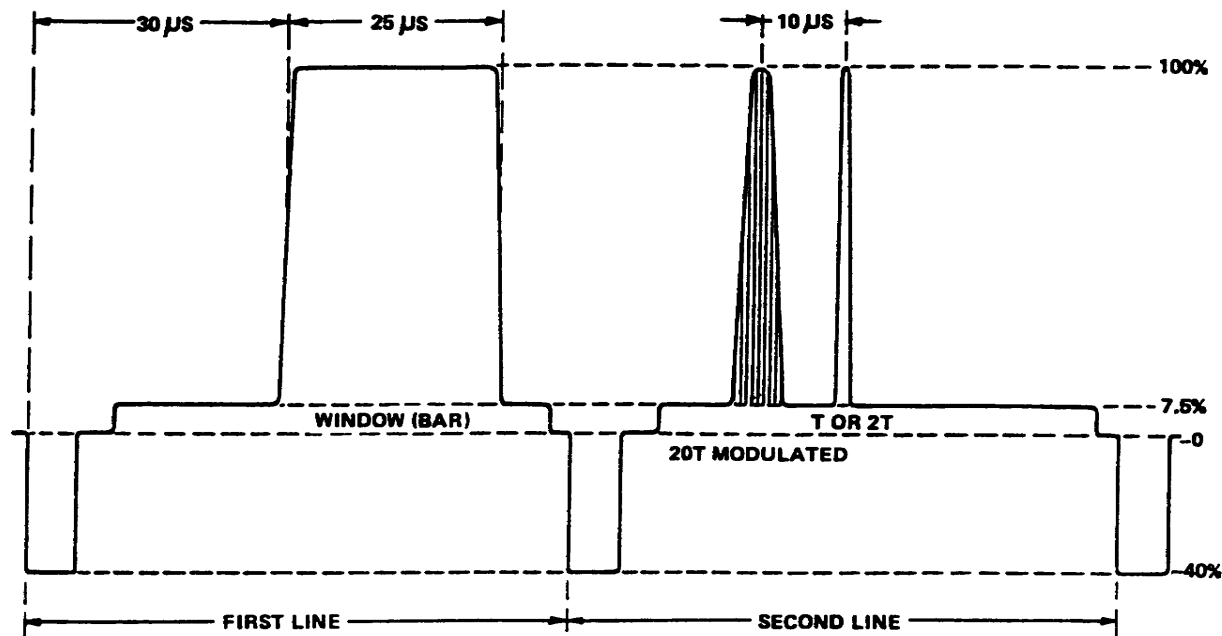


Figure 3-12. Display of 20T, T pulse and window

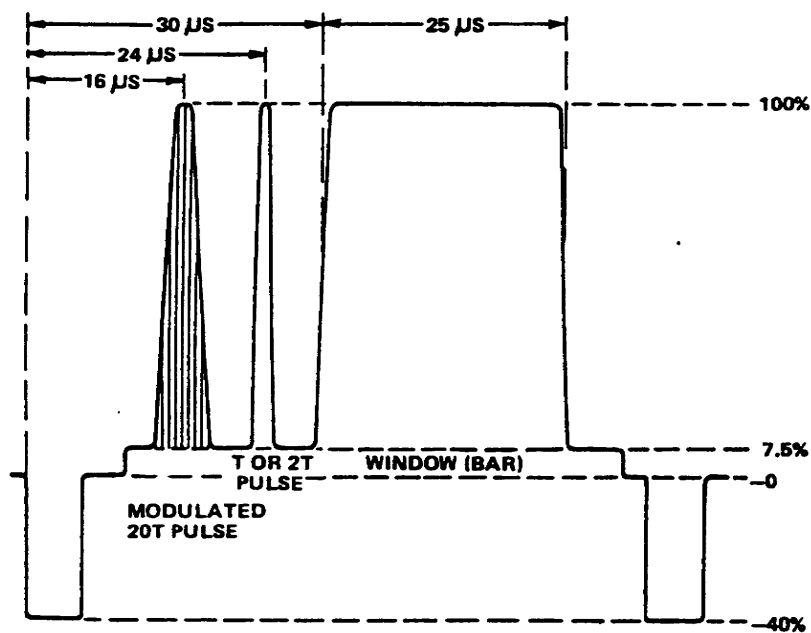


Figure 3-13. One-line display of 20T, T pulse and window

(3) The type of display convenient for one of the tests associated with this signal occurs when all the pulses and the window are in a single line. The scope must be double triggered; that is, it must be triggered from successive sync pulses. The two consecutive-line signal (fig 3-12) eliminates the need for double triggering, since a repetitive sweep automatically provides the double-triggered display. However, the two-consecutive-line signal has the disadvantage of being subject to error from frequency distortion because of the large difference in APL between the two separate lines (window on one line and pulses on the other).

2. Use of the pulse-window signal in practice involves, a special graticule to indicate certain K-factors, particularly for routine testing to provide a quick observation to go no/go quality.

3. In an attempt to correlate test-signal measurement with an actual degree of picture impairment, the K-factor is used. The K-factor is basically defined in terms of a standard picture distortion which is a single echo spaced in time $8T$ or more from the main transition. For example, if the peak amplitude of this single echo is 4 percent of the original transition amplitude, the K-factor is 4 percent.

a. In Figure 3-14, "A" signal transition with a sine squared shape occurs at $t = 0$. At a point spaced at $+8T$, a certain amplitude of "ring", or echo, exists. Let us arbitrarily assume that this amplitude is 4 percent of the original amplitude, so $B = 4$ percent. Waveform distortion A (fig 3-14) much closer to the transition is larger, but its effect, as judged by an average observer, is only equal to the picture impairment caused by echo B. Thus, although echo A may be 16 percent of the original amplitude, echo B, of only 4 percent amplitude, results in the same degree of picture impairment. We may construct a graticule mask which defines limits within which a waveform must fit if it is to have a K-factor equal to or less than the limits specified.

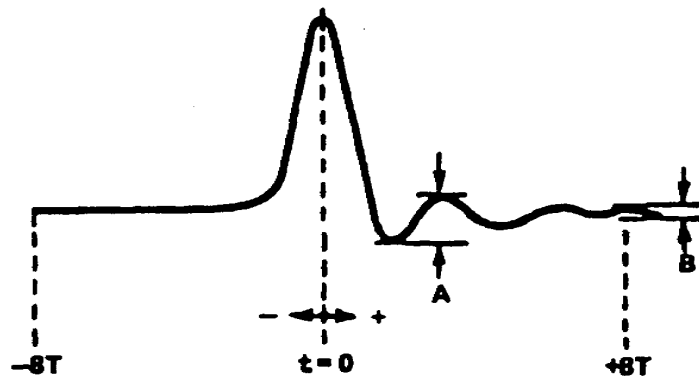


Figure 3-14. Basic qualities involved in explaining K-factor

b. For the purpose of assigning a numerical value to a subjective assessment, we can say that for a K-factor of 5 percent, picture impairment is noticeable to an experienced and critical observer, whereas a K factor equal to or less than the limits specified is not noticeable.

(1) In Figure 3-15, along the positive base of the transition, for h.a.d. = 0.250 microseconds the time from $t = 0$ to $t = T$ is 0.125 microseconds (A in Figure 3-15). Then the time to $8T$ is $8 \times 0.125 =$ microseconds. When h.a.d. = 0.125 microseconds $T = 0.0625$ microseconds (B in Figure 3-15). Therefore, $8T = 8 \times 0.0625 = 0.5$ microseconds. Obviously, the transition along the negative time base is the same, but progresses in the opposite direction from $t = 0$.

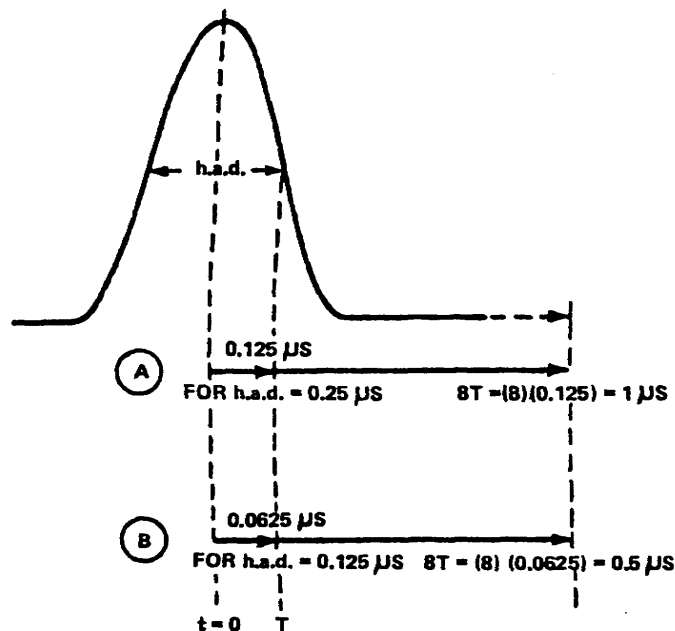


Figure 3-15. Pulse transition along positive time base

(2) Look at Figure 3-16, at plus and minus $8T$, lines representing the limits of the K-factor are spaced in reference to the amplitude at $t = 0$. If the K-factor limit is to be 4 percent, then at the $8T$ points the lines are spaced plus and minus 4 percent of the amplitude at $t = 0$. Echos of larger amplitudes may occur closer to the main transition with no increase in subjective picture impairment. Note, for example, that at $2T$ the limit increases to 4 times that at $8T$. Thus, if the $8T$ point has a K-factor of 4 percent, the $2T$ point is allowed an amplitude of $4 \times 4 = 16$ percent to fit within the 4 percent K-factor mask. Note also that the same mask can be used for pulses of either 0.025 microseconds or 0.125 microseconds h.a.d. by proper adjustment of the waveform monitor time base. The time base of $0.250\text{H/cm} \times 25$ is the proper time base for the pulse with h.a.d. of 0.250 microseconds. For the pulse with h.a.d. of 0.125 microseconds, $0.125\text{H/cm} \times 25$ is the proper time base.

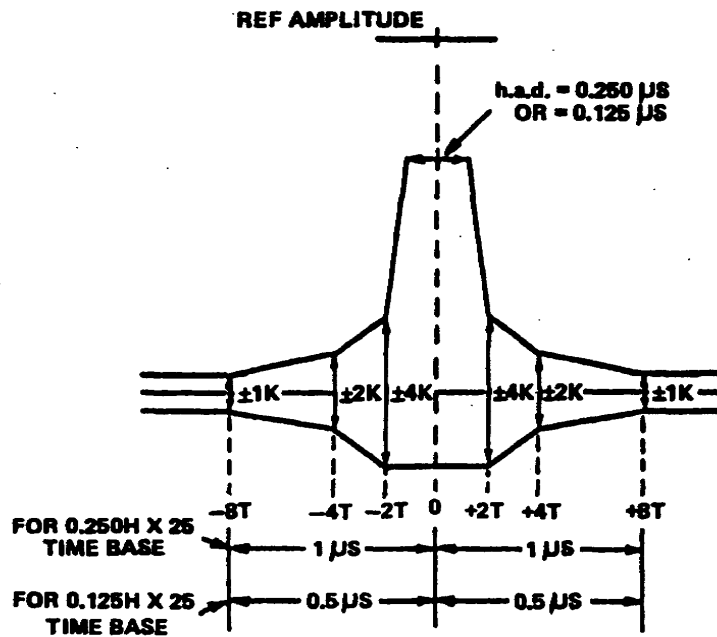


Figure 3-16. Basic K-factor

c. The K-factor graticule includes the limits of flatness for the window signal and the limits for the pulse-to-bar amplitude measurements for the K-factor used. Figure 3-17, which indicates how these limit lines are established. Observe, also, in this drawing that an indicator is used to show the correct waveform centering to place the leading edge of the window signal.

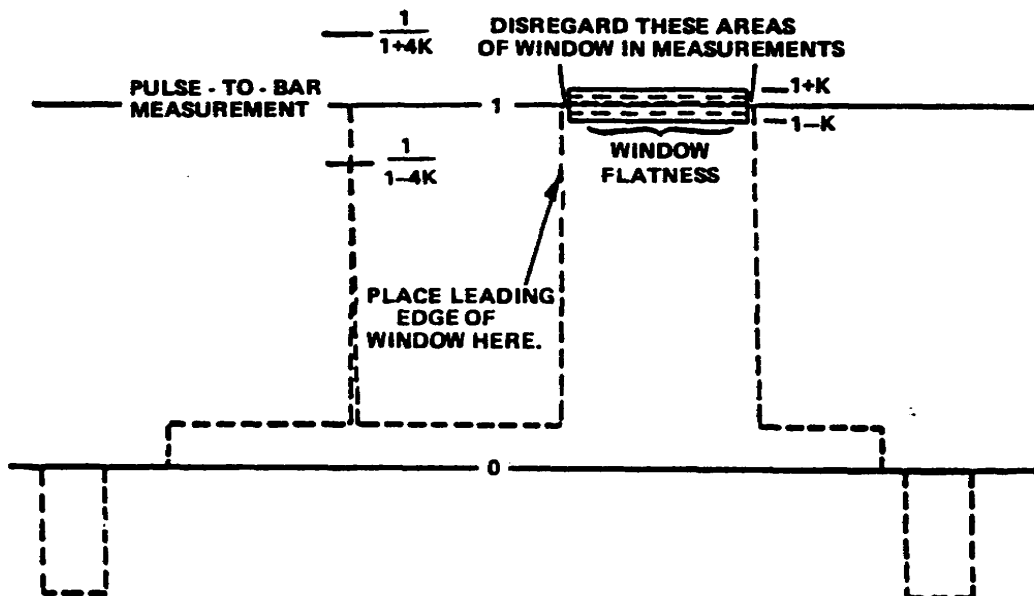


Figure 3-17. Pulse and window K-factor limits

d. Note that an area of either side of the window is disregarded in this measurement, and that only the enclosed area along the top of the bar is used. This is true for either horizontal or the vertical rate waveform displays.

4. Figure 3-18 illustrates the basic T-pulse responses encountered.

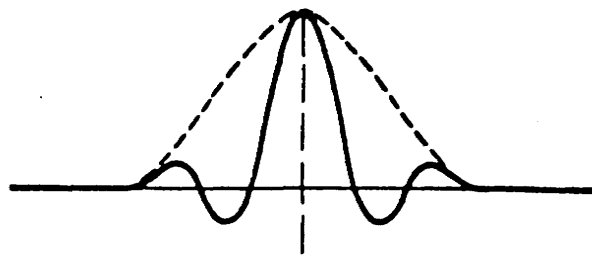
a. In Figure 3-18a, an amplitude-response error is apparent without phase-response error. Waveform errors this close to the transition do not impair the signal as much as errors farther away. In fact, this type of error should be recognized as that obtained from "phaseless aperture correction" in camera chains. Thus, there is a "crispening" effect of a single overshoot as compared with the actual picture impairments such as would result from the remaining waveforms of Figure 3-18.

b. Figure 3-18b, shows the "skew symmetrical" distortion caused when the delay increases with increasing frequency. Figure 3-18c, shows the opposite type of phase distortion, where the delay decreases with increasing frequency. In a system with a fairly rapid rolloff that uses phase equalizers to correct the resulting phase distortion, proper equalizer adjustment is indicated when ringing amplitudes are equally distributed preceding and following the pulse as shown in Figure 3-18d.

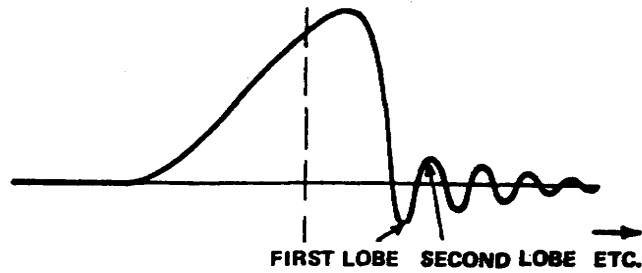
c. The amplitude-frequency and amplitude-phase response at frequencies higher than about 100 kHz is most evident in the measurement of the sin2 pulse. Amplitude-phase response at frequencies below 100 kHz is most evident in measurement of the window signal.

5. Distortions. Distortions at low frequencies produce waveform distortion with a long time constant, as for example, streaking. This is most evident in window measurement. Distortions at higher frequencies produce waveform distortions with shorter time constants as, example, smearing, loss of resolution, or edge effects from bad transient response. This is most evident in sin2 pulse measurement or in window-signal transitions.

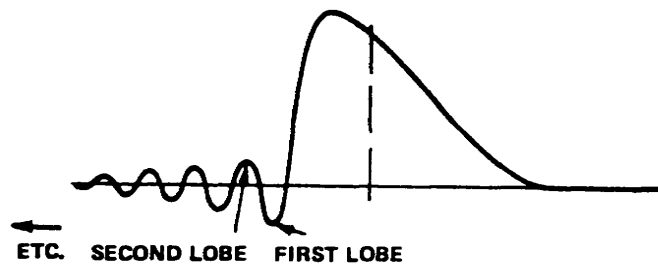
a. High-frequency rolloff results in loss of amplitude. Loss of amplitude results in a widening of the pulse, since the area of the pulse represents a constant DC component. A slow rolloff within the video band produces a large reduction in amplitude (and pulse-width increase) with little or no ringing. A rapid rolloff close to the top of the band but still within the desired video bandwidth produces both a reduction in amplitude, and ringing. A rapid rolloff just above the video bandwidth concerned results in practically no effect on amplitude, but does not produce ringing. The shape of the rolloff and whether the resulting phase shift is leading or lagging is revealed by the distribution of ringing before and after the pulse.



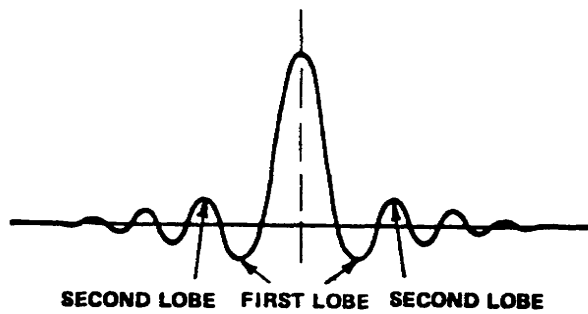
**(A) AMPLITUDE-RESPONSE ERROR,
NO PHASE ERROR**



**(B) SKEW SYMMETRICAL DISTORTION
HIGH FREQUENCIES.**



**(C) SKEW SYMMETRICAL DISTORTION
HIGH FREQUENCIES LEADING**



(D) USUAL EFFECT OF PHASE EQUALIZERS

Figure 3-18. Basic T-pulse

b. The window permits detecting low-frequency distortion, which has practically no effect on the sin2 pulse. The window shows undershoot, overshoot, and horizontal tilt, depending on the time constant of the impairment. When used with the sin2 pulse, the window has the same rise time as the pulse so that no frequencies higher than the system test reference are introduced.

6. Ringing.

a. Ringing occurs at the frequency at which the gain dip occurs in the system being measured. The ringing amplitude depends on the sharpness of this gain-dip characteristic.

b. The ringing period (fig 3-19) is defined by the following relationship:

$$R_p = 1/f_c$$

where f_c is the cutoff frequency.

For example, if we have a 4-MHz cutoff, the ringing period (R_p) is:

$$R_p = 1/4(10 \text{ to the 6th power}) = 0.250 \text{ microseconds}$$

To find the cutoff frequency for a given measured ringing period:

$$f_c = 1/R_p$$

where f_c is the cutoff frequency in megahertz, R_p is the ringing period in microseconds.

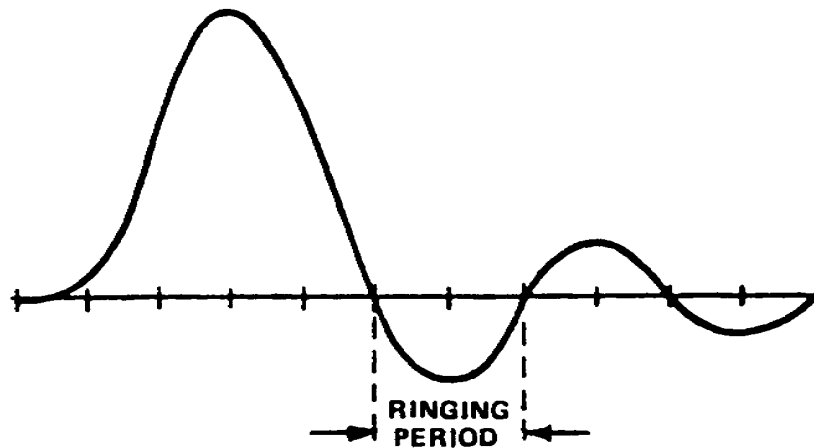


Figure 3-19. Ringing period

7. Waveform Distortion. Certain terminology is becoming standard, when defining waveform distortion, and following is a brief review of this terminology.

a. Short-time Waveform Distortion (SD) involves impairment of small picture detail in the horizontal direction. It is seen

as blurring or smearing of a sharp brightness transition. It may or may not be accompanied by an overshoot or ringing to the right or left of the transition. Measurement of the SD may be accomplished by observing the leading and trailing edge of the window signal displayed at the horizontal rate; the display may be expanded on the scope time base.

b. Line-time Waveform Distortion (LD) concerns a longer time constant than does SD, and it results in impairment of brightness reproduction between the sides of a picture detail. When detail is smaller than full picture height, the streaking is most noticeable to the right of the detail. Details extending all the way up and down the picture may result in streaking across the full raster horizontally. Measurement of LD is done across the top of the window signal viewed at a horizontal rate, and by the relationship of the leading and trailing edges to reference black.

(1) In one type of LD, (fig 3-20) positive streaking is indicated preceding the window (black-after-black) and following the window (white-after-white) on the raster. Note the blacker-than-black tilt prior to the window, and the time duration required to fall to black at the trailing edge of the window. In actual measurement, the 1 microsecond intervals at the leading and trailing edges are not used, and the same durations for a and b relative to A are used. The window is approximately $1/2H$ in duration, and the time from the trailing edge of the window to the leading edge of sync is about $1/4H$. So one-half of the window tilt is included in the (a) measurement, as indicated on the drawing.

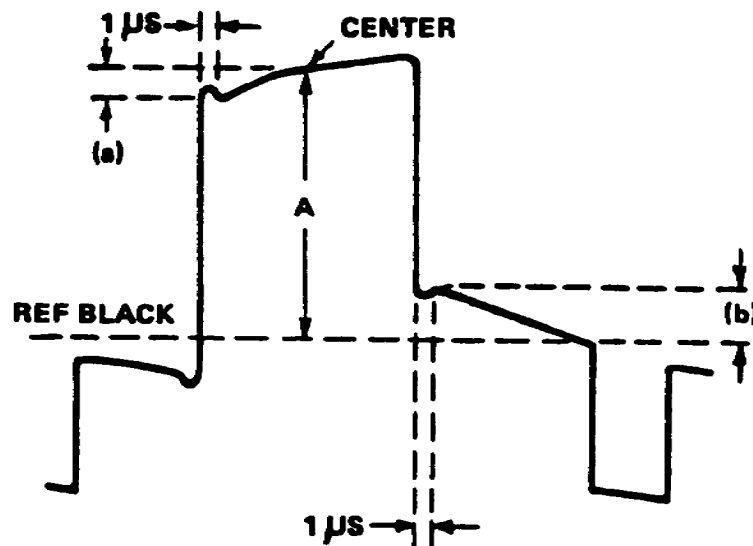


Figure 3-20. LD with leading and trailing positive streaking

(2) If the type of distortion is strictly linear, dimensions a and b are equal. If nonlinear distortion is present, these dimensions may differ. If reducing the level of the test signal into the system changes the relative dimensions of a and b, nonlinear distortion is present, and a lower level of test signal input should be used to check the actual linear distortion.

(3) Using the vertical-rate CRO display of the same signal, the white-going setup between the bottom of the white signal and blanking serves as an accurate indicator of the percentage of distortion. This defect is the result of excessive gain at low frequencies and causes an increase in setup level, in addition to the streaking effect from the attendant low-frequency phase shift. Such distortion is usually the result of a defective equalizer on long lines, or overcompensation with low-frequency compensation controls or tilt controls.

(4) LD resulting in negative streaking (black-after-white) impairs the display of lettering. The vertical-rate display indicates clearly the loss of setup, which occurs because this type of phase distortion is the result of insufficient gain at low frequencies, up to about the tenth harmonic of the nominal linescanning frequency of 15,750 Hz. In practice, the loss of gain occurs below the first few harmonics, or approximately 50 kHz.

8. Field-time Waveform Distortion (FD) results in impairment of brightness reproduction from top to bottom of the picture. Measurement of FD is done across the top of the window signal viewed at the vertical rate, and by the relationship of the leading and trailing edge of reference black.

9. Relative Chroma Level (RCL) is a measure of the faithfulness of reproduction of the saturation of all colors in a color picture. High RCL causes more vivid colors than intended; low RCL causes colors more pale than intended. Measurement of RCL is done most readily with the modulated 20T pulse.

10. Relative Chroma Time (RCT) is a measure of relative chroma and luminance delay. The results of RCT errors is misregistration of all colors with their respective luminance components. Delayed RCT places chroma to the right of its luminance component; advanced RCT places chroma to the left. Measurement of RCT is done with the modulated 20T pulse.

11. Modulated 20T Pulse. The modulated 20T pulse is the most convenient method of displaying RCL and RCT. Figure 3-21 typifies the display when pure amplitude distortion exists (no phase distortion). A change in amplitude of the 3.58-MHz subcarrier results in a cosine-shaped distortion of the base line, and a departure from reference peak level (top of window signal). When the distortion is linear, dimensions d1 and d2 are equal. If these dimension are unequal, nonlinear distortion (differential gain) is present. In this case, linear distortion normally can

be measured by reducing the test signal input to one-half the normal input level, or about 0.5 volts peak to peak.

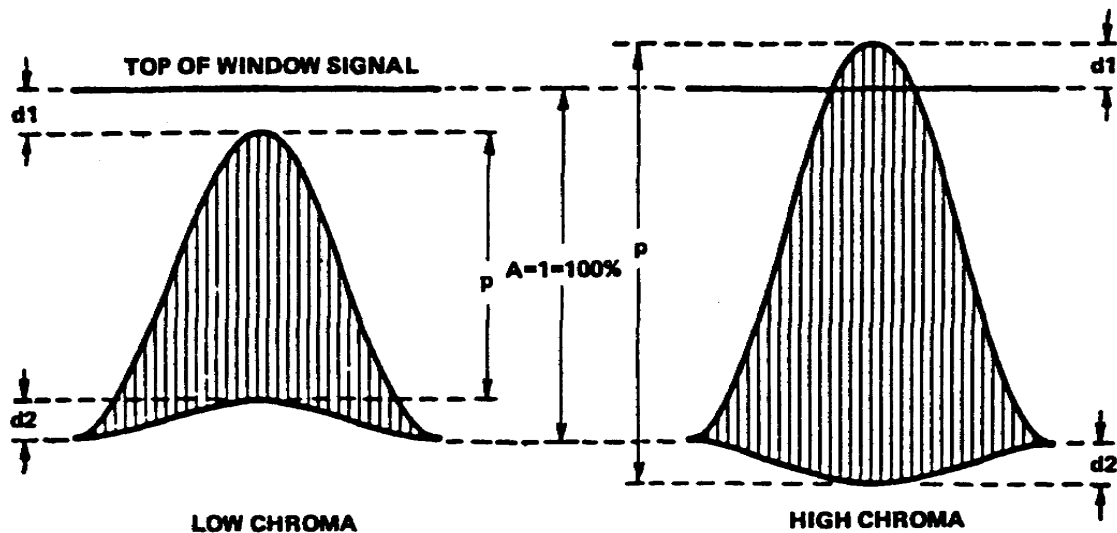


Figure 3-21. RCL only, no phase distortion

a. Dimension p (fig 3-21) represents the peak-to-peak level of the 3.58-MHz signal. Therefore (assuming $d1$ and $d2$ are equal), $RCL = p$. Thus, assuming p is 80 percent, RCL is 80 percent, or simply 0.8.

b. Figure 3-22 typifies RCT (without amplitude distortion). The envelope of the line 3.58MHz subcarrier has a sinusoidal baseline distortion indicating a delay (fig 3-22A). The sinusoidal base-line distortion indicates an advance (fig 3-22B). Although dimension d can be expressed as a percentage of A , the scope display does not provide a very convenient method of specifying the actual group delay in nanoseconds. The maintenance technician normally is interested only in the fact that he has a delayed-chroma or advanced-chroma problem, not in the measurement of actual delay. When this measurement must be determined, a calibrated variable chroma delay or advance is used at the generator output and is adjusted for a flat base line. The degree of RCT (delay or advance) can then be read directly from the calibrated dial in nanoseconds. Otherwise, RCT may be specified in terms of whether chroma is delayed or advanced, and the percentage of d to A .

c. It is often the case that RCL and RCT distortion occur simultaneously. Figure 3-23 represents typical displays. The figure is self-explanatory if the preceding two figures are understood.

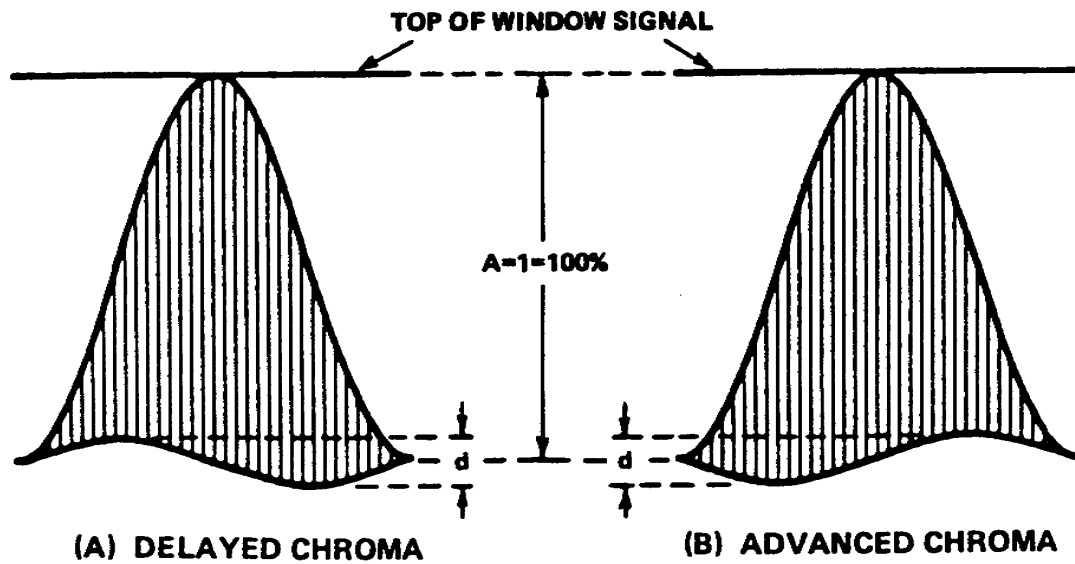


Figure 3-22. RCT only, no amplitude distortion

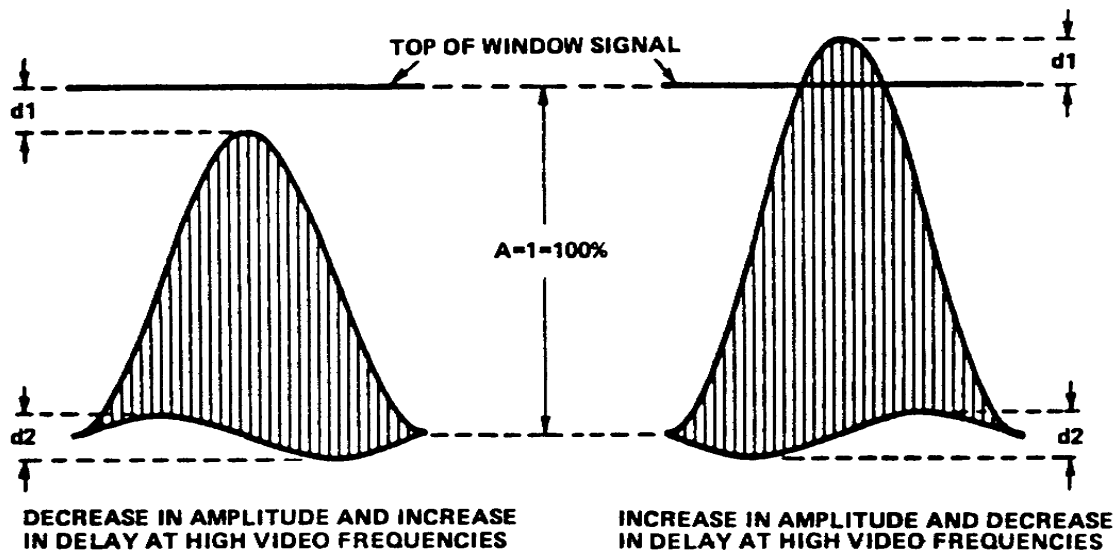


Figure 3-23. RCL and RCT simultaneously

Lesson 3
PRACTICE EXERCISE

1. What are the burst frequencies of the multiburst signal?
 - a. 0.15, 0.5, 1, 2, 3, & 3.58 MHz
 - b. 0.5, 1.5, 2.5, 3, 3.58, & 4 MHz
 - c. 0.15, 0.5, 1.5, 3, 3.58, & 4.2 MHz
 - d. 0.5, 1.5, 2, 3, 3.58, & 4.2 MHz
2. How many steps are used in gray-scale linearity signal?
 - a. Four
 - b. Six
 - c. Eight
 - d. Ten
3. How many horizontal lines are contained in the vertical synchronization interval?
 - a. 17-18 lines
 - b. 18-19 lines
 - c. 19-20 lines
 - d. 20-21 lines
4. What is the peak chrominance amplitude for the VIRS?
 - a. 40 IRE
 - b. 60 IRE
 - c. 75 IRE
 - d. 90 IRE
5. What type of test signal measurement is used to correlate the actual degree of picture impairment?
 - a. B-factor
 - b. E-factor
 - c. K-factor
 - d. Q-factor
6. What involves impairment of small picture detail in the horizontal direction?
 - a. Line-time waveform distortion
 - b. Field-time waveform distortion
 - c. Short-time waveform distortion

ANSWERS TO PRACTICE EXERCISES

Test Question Number	Correct Response	(Learning Event	<u>Reference</u> Paragraph	Page)
Lesson 1				
1	d	2	2c	6
2	d	3	6b (5)	
3	a	2	3	6
4	b	2	4a	6
5	d	1	2	1
6	a	2	2a	6
Lesson 2				
1	b	1	1	29
2	b	1	2a	29
3	c	2	4	33
4	c	2	5b (1)	37
5	c	3	1	41
6	c	3	4	44
Lesson 3				
1	d	1	1c	49
2	d	1	4a	51
3	d	2	1	54
4	d	2	3d	59
5	c	3	3	65
6	c	3	7a	71



OCTOBER 2000

FM 3-61.1

Public Affairs Tactics, Techniques and Procedures

DISTRIBUTION RESTRICTION:

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**HEADQUARTERS,
DEPARTMENT OF THE ARMY**



Preface

The mission of Army Public Affairs (PA) is to fulfill the Army's obligation to keep the American people and the Army informed, and to help establish the conditions that lead to confidence in America's Army and its readiness to conduct operations in peacetime, conflict and war. PA is a critical battlefield function in today's global information environment since every aspect of an Army operation is subject to instantaneous scrutiny.

This field manual (FM) sets forth tactics, techniques and procedures (TTPs) for conducting PA operations in accordance with the doctrinal principles contained in FM 3-0 (100-5), *Operations* and FM 3-61 (46-1), *Public Affairs Operations*. Although this manual is primarily designed to be used by public affairs officers, noncommissioned officers and civilians, it presents TTPs that all leaders conducting operations in the information age should be familiar with.

FM 3-61-1 (46-1-1) is applicable to units and individuals in both the active and reserve components. It serves as a foundation for integrating PA into Army doctrine, training, leader development, organization, materiel and soldier initiatives. In conjunction with the Army Training and Evaluation Program (ARTEP) and other training guidance, it should also be used to plan, integrate and execute individual and collective PA training in units throughout the Army.

The proponent for this manual is the Office of the Chief of Public Affairs. Send comments and recommendations on DA Form 2028 to Director, Army Public Affairs Center, ATTN: SAPA-PA, Fort Meade, MD 20755-5650.

Unless this publication states otherwise, masculine nouns or pronouns do not refer exclusively to men.

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Introduction

With the extremely sophisticated communication technologies of the global information environment (GIE), the nature of media coverage has a significant impact on the conduct of war and stability and support operations at the strategic, operational and tactical levels. Civilian and military news media coverage influences the perceptions of soldiers, family members, the public and political leaders, and affects the direction, range and duration of operations. It has a direct relation to the confidence these key audiences have in the Army and its execution of operations.

Effective PA operations are critical to successful Army operations in the information age. They assist the commander in monitoring and understanding public opinion, explaining the situational context of events and communicating the Army's perspective clearly and without filters. They enable the commander to interpret the perceptions of external and internal audiences and influence the way in which discussion of the operation is framed.

Synchronized, well-planned and actively executed PA tactics, techniques and procedures significantly clear the fog of war and impact the morale and effectiveness of the force. They reduce distractions, misinformation, uncertainty, confusion and other factors that cause stress and undermine efficient operations. They enhance understanding, acceptance and support. Effective PA operations contribute to soldier confidence, discipline, will to win, and unit cohesion.

FM 3-61-1 (46-1-1), *Public Affairs Tactics, Techniques and Procedures*, builds on the doctrinal foundation of FM 46-1. It translates the PA fundamentals and principles into detailed guidance for the planning, coordination and execution of PA operations. It provides what is required for the information age -- a sophisticated approach to conducting PA operations. It is the TTP that brings Army Public Affairs into the "information age."

FM 3-61 (46-1), *Public Affairs Operations*, addresses fundamental PA concepts in depth, and provides the linkage between PA and the Army's keystone doctrine, FM 3-0 (100-5), *Operations*. It recognizes that a refocused, restructured military will conduct operations in an information environment in which detailed, graphic, and live coverage of events are transmitted around the world. It builds from the understanding that information availability will influence strategic decisions and the direction, range and duration of operations.

FM 3-61 (46-1) also examines PA operations at the different levels of war and across the range of operations. It discusses PA operations with respect to the Principles of War and the Tenets of Army Operations. It analyzes the PA contributions to build and sustain combat power, defines the PA mission, and establishes strategic PA goals, fundamental PA principles, and underlying considerations for planning integrated information strategies.

Public affairs frequently deals in intangibles -- perceptions and implications -- that are not easily quantifiable or qualifiable, but are essential to commanders. The PA objectives, processes and methods presented in FM 3-61-1 (46-1-1) will assist Army leaders and PA professionals to develop solutions to the complex PA issues they will confront.

Public Affairs Tactics, Techniques and Procedures

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Chapter 1

Public Affairs Fundamentals

Public Affairs fulfills the Army's obligation to keep the American people and the Army informed and helps establish the conditions that lead to confidence in America's Army and its readiness to conduct operations in peacetime, conflict and war.

FM 3-61 (46-1), Public Affairs Operations

THE PA MISSION

1-1. The American public, internal Army audiences, allies, adversaries and other critical audiences have access to an ever expanding array of public and military media. Newspapers, magazines, radio, television and electronic media are independent conduits of information. They provide news, analysis, interpretation and commentary and serve as a forum for ideas, opinions and public debate. What appears in the media, both civilian and military, shapes perceptions, attitudes and opinions, and can have a direct impact on mission success.

1-2. The vast majority of both civilian and military media representatives are committed to providing responsible, accurate, balanced coverage. Although there are exceptions, most media representatives, even when editorializing, are focused on achieving a credible presentation. To accomplish this, media representatives investigate issues, ask tough, challenging questions, and pursue verifiable answers. They seek information, interpretation and perspective. Army leaders at all levels need to educate media representatives and facilitate their efforts to provide an accurate, balanced and credible presentation of timely information.

1-3. Army leaders do this by integrating public affairs into the planning process and synchronizing PA operations with other facets of the operation. Integrating and synchronizing public affairs issues allows commanders to communicate their perspective and achieve a balanced, accurate, credible information presentation.

1-4. The PA mission identifies the essential contribution that PA makes to America's Army. The mission and the strategic goals derived from it provide the foundation on which public affairs operations are built. Strategies, which are developed from the perspective that every aspect of every operation could become an issue of interest in the global information environment, are the most successful. Developing such strategies requires that PA personnel access, analyze and anticipate potential issues by conducting a thorough mission analysis.

1-5. The challenge for commanders, and personnel supporting them, is to plan and execute operations, which accomplish this mission and support

these goals. To do this, PA must be integrated into the planning and decision-making process from receipt of the mission.

1-6. The need to integrate and synchronize PA early derives from the fact that in most situations media representatives will be present in an area of operations before the arrival of Army forces. They will know the area of operations and because they are covering the story as it evolves, will have an understanding of, and opinion about, the situation.

1-7. Media interest will normally be the most intense at the onset of operations. Media representatives will cover the deployment of Army forces, their arrival in the area and their initial conduct. To support the commander and the force in their interactions with media representatives during these early stages, public affairs personnel should be deployed in the first days, if not hours, of the operation. Dealing with a large international press corps constitutes the most immediate public affairs challenge facing the commander during contingency.

PUBLIC AFFAIRS FORCE

1-8. The changing information environment in which the Army conducts war and stability and support operations makes it necessary for PA officers, NCOs and specialists to respond to increasingly complex, demanding challenges. They must be prepared to support the commander with a wide range of knowledge about and understanding of the communication process, the global information environment (GIE) and its potential impact on operations.

1-9. PA personnel must also thoroughly understand the fundamentals of Army operations and the strategic context within which the Army conducts operations. As the GIE compresses the strategic, operational and tactical levels of operations, PA personnel need to appreciate the linkage between public opinion, political decision-making and the national security strategy. They must understand the Army's approach to fighting, influencing events in operations other than war and deterring actions detrimental to national interests.

1-10. PA leaders must, therefore, be among the most informed people in the command. They must be thoroughly aware of all aspects of the operation. They need to know what is being reported about the operation in the global news media and how internal and external audiences are reacting to that information.

1-11. The Public Affairs Officer. The PAO's primary mission is to assess the PA situation, advise the commander on PA issues, assist him in making the best possible decisions, and translate his decision into effective PA operations. PAOs employ the decision-making process to plan, coordinate and supervise the implementation of a PA strategy that helps the commander meet his obligation to communicate with the American public, soldiers, home station communities and the Department of the Army community. PAOs analyze the situation, anticipate issues, assess implications, and develop comprehensive operations, which meet the news and information needs of internal and external audiences and facilitate media operations.

1-12. The Public Affairs Non-Commissioned Officer. The strength of the Public Affairs functional area is its non-commissioned officer corps. PA NCOs are experts on the global information environment, media operations, information strategies, and PA training. They are integral to all facets of the PA planning and decision-making process and provide the essential functional area expertise and continuity required for successful PA operations.

1-13. PA NCOs work closely with the PAO, and in many situations, a PA NCO is the commander's senior PA advisor. Therefore, PA NCOs are fully prepared to assess the PA situation, develop, synchronize and coordinate a PA strategy, implement and monitor PA operations, and measure and evaluate the success of the PA effort.

1-14. The Public Affairs Specialist. In addition to learning traditional soldier skills, PA specialists are trained to support the entire spectrum of PA operations conducted in the global information environment. They are trained on news media operations, news media facilitation, information strategies and information provision. They register media representatives, gather information, develop information products, support news media briefings, respond to news media inquiries and requests for assistance, and track and monitor news media activities throughout the area of operations. They work with news media representatives to gather accurate information and provide timely, balanced coverage of the operation.

1-15. The Department of the Army Public Affairs Civilian. Civilian PA practitioners assigned to Tables of Distribution and Allowances (TDAs) have the same skills as military PA personnel. They provide critical support during war and non-combat operations by providing a vital link between deployed forces and the home station community, and in many situations, may be called upon to deploy with the units they support, or as individual augmentees.

PUBLIC AFFAIRS ELEMENTS

1-16. Battlefield commanders have two sources for tactical PA support. The first is the PA section organic to a warfighting headquarters. The second is the PA unit, which is attached to a headquarters to augment the command's PA capability.

1-17. Conducting PA planning, facilitating news media operations on the battlefield, providing news and information, and executing PA training and support operations is manpower intensive. The austere staffed PA sections organic to warfighting headquarters will nearly always be overwhelmed trying to meet PA requirements in war and other operations. PA staff sections, therefore, rely on early augmentation by PA units, or individual augmentation if appropriate, to accomplish the battlefield PA mission.

1-18. **Organic Public Affairs Sections.** Organic PA sections are found in warfighting headquarters at various levels including brigades, divisions and corps throughout the Army. Army PA personnel are also assigned to the organic PA sections of joint and combined headquarters.

1-19. In headquarters without organic PA sections, the commander is responsible for PA and must plan and execute PA operations or assign responsibility for PA operations as a special or additional duty to an officer or senior NCO in the command.

1-20. Regardless of the echelon, the PA staff section's primary responsibility is to assist the commander in accomplishing his mission. The staff:

- provides PA information expertise and advice
- conducts PA assessments
- provides analysis of the information environment
- conducts PA planning
- develops information strategies and guidance
- implements PA operations
- measures the effectiveness of the PA effort
- conducts PA training

1-21. The PA staff element controls augmenting PA units. It determines requirements, defines priorities and assigns missions to the augmenting unit. In conjunction with the augmenting unit commander, the staff element task organizes the unit, allocating personnel and equipment to accomplish objectives. If the PA staff element is a Public Affairs Operations Center or a Task Force Headquarters, it will coordinate Armed Forces Radio and Television Service (AFRTS) support activities for the command.

1-22. **Public Affairs Units.** PA units are fully deployable TOE organizations designed to augment the PA staff sections of warfighting units, although they can operate independently in certain limited situations. When a PA unit is deployed to augment a PA staff section, the personnel in the unit cannot be reassigned as replacements or employed as individual fillers for other public affairs elements.

1-23. PA units depend upon the unit they augment for personnel administration, finance, legal and health services, communications, food service, unit maintenance, and supplemental transportation support. PA units operating at corps and below must have the capability to transport all of their TOE equipment in a single lift using authorized organic vehicles.

1-24. There are currently four types of PA units:

- Public Affairs Detachment (PAD)
- Mobile Public Affairs Detachment (MPAD)
- Public Affairs Operations Center (PAOC)
- Broadcast Operations Detachment (BOD)

1-25. **Public Affairs Detachment (SRC 45500AA00).** The smallest of the PA units, the Public Affairs Detachment (PAD) (Figure 1-1) is commanded by a captain and includes seven PA soldiers..

Public Affairs Detachment		
CDR	CPT	46A
PA NCO	SSG	46Q
JOURN	SGT	46Q
JOURN(x2)	SPC	46Q
BR JOURN	SPC	46R
JOURN	PFC	46Q
BR JOURN	PFC	46R

Figure 1-1. PAD

1-26. The PAD normally augments a division, separate brigade and armored cavalry regiments and deploys in support of combined, unified or joint operations.

1-27. The PAD commander assumes responsibilities as the PAO or deputy PAO, and the PAD PA personnel are integrated into the supported command's PA section based on operational requirements.

Historical Perspective

The 10th Mountain Division, Fort Drum, N.Y., arrived in Somalia with hundreds of reporters already there, and absolutely no public affairs personnel accompanying them. The first public affairs support arrived at the 2nd Brigade, 10th Mountain Division, 10 days later and only because the JIB dispatched one of its own PADs.

(PA After Action Report, Operation Restore Hope, 10th Mountain Division, Dec 1992)

1-28. Because of the size of the unit, the PAD provides limited:

- Personnel and equipment for digital imagery and audio acquisition.
- Personnel for media escort within the supported unit's area of operations
- Coordination of an information product distribution system that can relay news and information products to members of the supported unit, higher echelons and home station.
- Planning, developing and implementing strategy to support civilian news media and facilitate news gathering efforts throughout the supported unit's area of operations
- Personnel and equipment to coordinate, assist or conduct press conferences and briefings

- Personnel to train, advise and assist leaders and soldiers interacting with or supporting civilian news media within the supported unit's area of operations.

1-29. **Mobile Public Affairs Detachment (SRC 45413A000).** The workhorse of PA units, the Mobile Public Affairs Detachment (MPAD) is a modular, task organizable unit, which provides the full range of PA services. (Figure 1-2). The MPAD is commanded by a major and includes 20 soldiers.

<u>Mobile Public Affairs Det</u>					
<u>Command Cell</u>					
CDR	MAJ	46A			
PA SPVR	MSG	46Z			
CLERK	SPC	71L			
<u>MEDIA TEAM*</u>			<u>BROADCAST TEAM*</u>		
TM OIC	CPT	46A	TM OIC	CPT	46A
NCOIC	SFC	46Q	NCOIC	SFC	46R
JOURN	SGT	46Q	BR JOURN	SSG	46R
BR JOURN	SGT	46R	BR JOURN	SPC	46R
JOURN	PFC	46Q	BR JOURN	SPC	46R
BR JOURN	PFC	46R	BR JOURN	PFC	46R
<u>PRINT TEAM*</u>					
TM OIC	CPT	46A			
NCOIC	SSG	46Q			
JOURN(x2)	SPC	46Q			
JOURN	PFC	46Q			
*This is one possible configuration. Paragraph 2 members can be configured as one, two or teams of various strengths, based on mission.					

Figure 1-2. MPAD

1-30. The MPAD normally augments a Corps PA section or a Public Affairs Operations Center (PAOC). In support of a PAOC, it provides manpower and equipment to establish and operate a media center at Theater Army, TAACOM and Corps.

1-31. It may also be deployed to directly support a joint service task force or non-DoD governmental agency conducting disaster relief, humanitarian assistance, counter drug, peacekeeping, or other contingency operations.

1-32. MPADs in direct support of a gaining command PAO provide acquisition capability for print, audio and video.

1-33. Additional MPADs in direct support can expand the media escort capability of the supported PAO, augment divisions and other elements in theater and provide the PAO with staff augmentation. MPADs may be deployed forward to establish media centers or a sub-JIB in a joint environment.

1-34. MPADs have the capability to:

- Monitor and assess the perceptions of external audiences through access to civilian commercial news sources.
- Conduct assessments of the information environment, to include development of a PA estimate of the situation, as the initial part of operational planning.
- Assist the PAO in operational planning and policy and ground rules for media, coordination for logistical support to PA, and coordination of PA operations with higher and subordinate headquarters.
- Plan and develop information products, which will be produced through contracted services and/or the use of organic equipment and facilities.
- Acquire, produce and transmit information products throughout the theater, between the theater and home station, and between the theater and HQDA.
- Create and disseminate print, photographic, audio and video products for external release directly to civilian media who do not have representatives within the theater of operations. Conduct media facilitation and develop information strategies.
- Prepare commanders, staff personnel and other command members for interviews, press conferences, and similar media interaction.

1-35. **Public Affairs Operations Center (SRC 45423A000).** The Public Affairs Operations Center (PAOC) consists of command, media facilitation and post-production sections (Figure 1-3). It is commanded by a lieutenant colonel and includes 32 soldiers.

1-36. The PAOC normally augments the PA staff section at echelons above division to establish and operate a media center in support of civilian and military media representatives working in the theater.

1-37. The PAOC commander serves as the media center commander but works under the control of the PAO of the supported unit or task force.

1-38. In joint or combined operations, a PAOC serves as the Army element of the joint media operations center.

1-39. When the PAOC functions as the Army element of a joint or combined media center, the PAOC commander works for the joint or combined media center commander.

1-40. For major operations in which there is a significant media interest, the PAOC is augmented by up to three MPADs. The MPADs are either integrated into the main media center operation or tasked to operate subordinate media centers at outlying locations. A PAOC can support up to 100 news media representatives. When augmented by three MPADs, the PAOC can support up to 300 news media representatives.

<u>Public Affairs Operations Center</u>					
<u>Command Cell</u>					
CDR		LTC		46A	
XO		MAJ		46A	
PAO		MAJ		46A	
CH PA NCO		SGM		46Z	
PA NCO		SFC		46Q	
SPLY SGT		SGT		92Y	
MECHANIC		SPC		63B	
ADM SPC		SPC		71L	
PERSONNEL		SPC		75B	
ADM CLERK		PFC		71L	
<u>ESCORT TEAM</u>			<u>BRIEFING SECTION</u>		
CHIEF	CPT	46A	CHIEF	MAJ	46A
PRESS OFF (x2)	CPT	46A	BRIEF OFF (x2)	CPT	46A
JOURN (x2)	SGT	46Q	BR JOURN	SGT	46R
JOURN (x4)	SPC	46Q	BR JOURN	SPC	46R
JOURN (x4)	PFC	46Q	BR JOURN (x2)	PFC	46R
<u>A/V PRODUCTION</u>					
BR NCO	SSG	46R			
PROD SPC	SPC	25V			
BR JOURN	SPC	46Q			

Figure 1-3. PAOC

1-41. PAOCs are modular, task organizable units having the capability to:

- Implement the theater or corps strategy to support civilian news media and facilitate news gathering efforts in theater.
- Coordinate and provide services to registered civilian news media sponsored by the command.

- Provide the personnel and equipment to coordinate and conduct media support within the theater of operations.
- Provide personnel and equipment to plan and conduct daily news media briefings.
- Provide personnel to train, advise and assist leaders and soldiers interacting with or supporting civilian news media representatives.

1-42. **Broadcast Operations Detachment (SRC 45607A00).** The BOD consists of a command element, two broadcast teams and a maintenance team. (Figure 1-4). It is commanded by a major and includes 26 soldiers.

1-43. The BOD augments a fixed or field expedient AFRTS facility under the control of a senior AFRTS facility commander, or it can establish and operate a separate radio and/or television broadcast facility to support theater level operations.

Broadcast Operations Detachment					
Command Cell					
CDR	MAJ	46A			
OPS OFF	CPT	46A			
BR OFF	CPT	46B			
DET SGT	SFC	46B			
SPLY SGT	SGT	92Y			
ADMIN SPT	SPC	75B			
TEAM A			TEAM B		
BR NCO	SSG	46R	BR NCO	SSG	46R
BR JOURN (x2))	SGT	46R	BR JOURN (x2))	SGT	46R
BR JOURN (x2)	SPC	46R	R JOURN (x2)	SPC	46R
BR JOURN (x2)	PFC	46R	BR JOURN (x2)	PFC	46R
MAINTENANCE					
BR NCO	SSG	46R			
PROD SPC	SPC	25V			
BR JOURN	SPC	46Q			

Figure 1-4. BOD

1-44. The BODs must be authorized and equipped by AFRTS to perform this mission. When deployed to perform this mission, the BODs are assigned to the PAOC supporting the command.

1-45. BODs have the capability to:

- Provide on-air broadcasters recorded materials and satellite down links to operate a 24-hour a day radio outlet.

- Provide on-air broadcasters, recorded materials and satellite down links to operate a television station.
- Originate audio and video news, feature and entertainment programming from within theater.
- Provide post production services for audio and video news and feature material supplied in unedited format.
- Provide limited audio and video materials to other public affairs operations for dissemination outside the theater.
- Acquire audio and video electronic newsgathering coverage of operations in the theater for use in internal and external information programs.
- Perform field maintenance and repair above operator level to broadcast equipment organic to the unit.
- Provide the commander with an alternate means of communications when tactical communications are not adequate or not available.

1-46. Public Affairs organizations are built around a force of soldiers who are selected and trained to articulate the goals and missions of the Army.

1-47. More than 65 percent of the total public affairs force and 85 percent of the deployable TOE unit structure is positioned in the U.S. Army Reserve and Army National Guard. These reserve units and personnel must be seamlessly integrated with the active component and focused on supporting the overall Army goals and objectives.

Chapter 2

Public Affairs Functions and Responsibilities

THE CHALLENGE

2-1. The global information environment and continually evolving information communication technologies make it imperative that information and messages be consistent at all levels. The personal comments made by a deployed soldier in a remote area of operations and the official statements released by DoD at the Pentagon must be mutually supporting. The information targeted to internal audiences must parallel the information released through the news media to the American public and other external audiences. The Army's need for security, and the soldier's and family member's right to privacy must be balanced with the Army's obligation to provide timely, accurate, complete information to internal and external audiences. The commander's information strategy must ensure that the information available in the public domain, regardless of the source, does not conflict, contradict or otherwise undermine the credibility of the command or the operation.

Historical Perspective

Civilian news coverage contributed greatly to maintaining soldier morale during Desert Storm. The coverage was generally positive; the American people were behind the operation and soldiers felt this impact. Problems arose when the coverage created rumors, and command information was not consistent with what the soldiers were seeing or hearing in the world media. Family members and non-deployed soldiers were greatly affected by news coverage, often creating problems for rear commanders and detracting from their credibility.

(After Action Report, Desert Storm 1990, Center for Army Lessons Learned)

2-2. Accomplishing this presents unique command and control challenges for commanders, PA practitioners at all levels and others involved in using information to help accomplish the mission in the most effective, efficient manner. It requires careful coordination between staff elements and necessitates continual liaison between levels of command from the tactical through the operational to the strategic.

2-3. Further complicating PA command and control challenges are PA force structure realities. The small size of the PA staff sections organic to war-fighting headquarters necessitates augmentation, especially for operations with a high level of visibility. The availability of augmenting PA units, the majority of which are located in the reserve components, and the difficulties inherent in deploying PA civilians result in heavy dependence on

augmentation by individuals. This leads to the creation of ad hoc, unequipped PA elements, which have not trained together or developed relationships with other staff sections or commands, and do not have established internal or external operating procedures.

2-4. For PA personnel therefore, the critical challenge is to rapidly define command and control channels, establish lines of communication and develop operating procedures. The responsibility for doing this usually lies with the Corps PAO who normally leads the commander's PA effort. He identifies requirements, assesses resources and plans, organizes, directs, coordinates and controls the PA operation.

PUBLIC AFFAIRS RESPONSIBILITIES

2-5. Effective PA command and control establishes a public affairs organization based on analysis of mission, enemy, terrain, troops, time available and civilians (METT-TC), tailored to the situation, which reflects the commander's concept of the operation. It ensures that there are sufficient, experienced, PA personnel at each echelon to provide the commander and his force with the most effective and efficient support possible.

2-6. PA command and control begins at the DoD level. The Office of the Assistant to the Secretary of Defense, Public Affairs (OASD(PA)), retains primary responsibility for the development and consistent implementation of DoD information policies and determines who should serve as the initial source of information about operations. Although (OASD(PA)) delegates PA release authority to the combatant commander as soon as practical, it retains responsibility for approving Public Affairs Guidance (PAG), establishes public affairs policy, and coordinates and approves PA strategies and plans.

2-7. The Office of the Chief of Public Affairs (OCPA) for the Army is responsible for Army PA resources. OCPA develops PA doctrine, designs PA organizations, determines training and leader development requirements, identifies materiel needs, and manages PA personnel to ensure that sufficient assets are available, qualified and ready to conduct successful PA operations in support of any assigned mission.

2-8. Commanders supported by their PA staff personnel, plan PA operations for their assigned missions based on the situation, published in DoD directives, instructions, doctrine and guidance, and in coordination with OASD(PA). The CINCs prescribe the chain of command, organize and employ forces, give authoritative direction, assign tasks and designate objectives through component commanders, subordinate unified commanders, commanders of joint task forces and other subordinate commanders. The commander establishes responsive PA structures and ensures that they are provided with the personnel, facilities, equipment, transportation and communications assets necessary to provide adequate PA support. A failure to establish these structures results in a duplication of effort and a waste of resources. The commander is responsible for the full range of PA activities -- PA planning, media facilitation, information strategies and PA training and at sustaining base, community relations. He is also responsible for establishing, resourcing and guiding the operations of Joint Media Operation

Centers and planning all AFRTS radio and television support operations in the area of operations.

Historical Perspective

The establishment of the Joint Information Center under the auspices of the DOT Presidential Task Force on September 1, 1992 was vital to a coordinated and successful Joint Public Affairs effort. The JIC was an “umbrella” organization that served as the clearing house for dissemination of hurricane relief information to the news media. More than 10 federal agencies involved in relief operations had public affairs representatives at the JIC. Daily meetings and consistent interaction among the agencies involved resulted in a coordinated federal information effort.

(Public Affairs Lessons Learned Library, Joint Information Center, Hurricane Andrew, 1992)

2-9. Within the Army, the Corps is usually the hub for PA operations. The Corps commander, supported by his PA staff element, is responsible for the development and coordination of PA strategies, the implementation of information campaigns and the execution of PA operations based on METT-TC, the information environment, and guidance and policy received from the combatant CINC.

2-10. The Corps PAO is the principal PA advisor to the Corps commander and deploys with the lead element of the Corps headquarters. When fully deployed, the Corps PAO section operates from the Corps main command post, with a liaison officer/NCO located at the Corps plans cell. It also is responsible for establishing coordination with the PA elements of higher, lower and adjacent commands.

2-11. The Corps, through the PAO, controls the employment of augmenting Army PA units deployed in support of the operation. Up to one PAOC and six MPADs are normally allocated to augment the Corps PA section, although the size and scope of the mission will determine the actual augmentation required for each operation. The Corps PAO and his staff task organize the personnel and organizations available and allocate the equipment, communications support and facilities. When augmented, the Corps PAO operates a media operations center and establishes satellite centers as required.

2-12. Below the Corps level, the PA staff section organic to a war fighting headquarters is extremely austere. The mission of the PA section below Corps is to advise the commander by providing immediate planning expertise and guidance on issues with critical PA implications. The PA section deploys with the lead elements of the headquarters, and operates from the command's main CP.

2-13. PA units deployed to augment the staff sections organic to a headquarters are normally placed under the control of the supported PAO, who assigns the augmenting PA unit missions and tasks. He will do so in conjunction with the augmenting PA unit commander, who will retain command of his unit and ensure that his unit's personnel are not employed as

individual fillers. Whenever possible, augmenting PA units should be linked with the supported command headquarters at that command's home station prior to deployment to facilitate establishment of command and control relationships.

PUBLIC AFFAIRS COMMUNICATIONS

2-14. Reliable, survivable, flexible communications are essential for effective PA command and control. In today's global information environment, information must flow to and from users, up and down the chain of command, and horizontally across the battlefield. Technology has compressed time and space and forward-deployed PA sections can be in direct communication with officials at DoD working PA strategies. The challenge is to ensure coordination and interoperability so that all elements have the communications capability necessary to effectively carry out their assigned mission, especially in today's joint, combined or interagency environment.

2-15. Deliberate, detailed planning can prevent communications shortfalls. PA planners assess their information transmission and reception needs and requirements. They then identify the communications capabilities they need access to, and determine the communications support they will need from command signal organizations. Through close coordination with the staff signal section, the identified PA communications requirements are integrated into the overall communication architecture.

INFORMATION OPERATIONS

2-16. The three central defining characteristics of the global information environment -- the facility of information acquisition and transmission, the speed of information communication and the breadth of information saturation -- combine to increase information availability. The American public, internal audiences, allies and adversaries have ready access to information. Information security is transitory and it is critical that information operations at every echelon are mutually supporting and directed at a clearly defined, decisive and attainable objective.

2-17. Credibility is essential for successful information operations. If an information source is not perceived as believable, then the desired effect of that communication cannot be achieved. Regardless of the source, target or objective of an information effort, in the GIE, credibility is founded in truth and enhanced by validation, corroboration, and consistency.

2-18. Commanders require integrated, coordinated, synchronized information operations. PA operations, which occur at, and impact on, the strategic, operational and tactical levels -- often simultaneously -- are a critical element of these operations. News media coverage of conflicting messages and information communicated by different elements of the command compromises credibility.

2-19. Integrating, coordinating and synchronizing every element of the commander's information operation -- Public Affairs, Psychological Operations, Civil Affairs, Combat Camera, Operations Security and others -- results in a synergistic information strategy. It minimizes the possibility of conflicting messages, which undermine credibility, jeopardize operations and endanger mission accomplishment.

LOGISTICS SUPPORT

2-20. Logistics is critical at all levels of command for Public Affairs mission success, during any phase of combat or garrison operations. Commanders must ensure their Joint Table of Allowances (JTA), Modified Table of Equipment (MTOE), Table of Distribution and Allowances (TDA) or Common Table of Allowances (CTA) reflects appropriate equipment levels to maintain a PA staff and media support under field and garrison conditions. Maintenance also plays an important role in Public Affairs operations. A Public Affairs element that has all its equipment cannot function properly if its equipment is inoperative, broken or deadlined. Each Public Affairs element must develop its own internal SOP in regard to logistics. (See Appendix K.)

2-21. Public Affairs staff members must be trained in the areas of supply, budget, property book, ordering, class A procurement, etc. Public Affairs must be an integral player in all mission and operational planning sessions to ensure logistical requirements are identified and resourced.

2-22. Responsibilities: The Public Affairs staff has the responsibility to identify to its resource manager, property book manager and ordering officer all fiscal and logistical requirements for field operations and home station support. Requisitions for equipment, supplies, services and allowances will be ordered and processed in accordance with appropriate Army Regulations, AR 710-2 *Unit Supply Update* and budgetary guidelines.

2-23. Requesting supplies: Commanders must ensure that equipment and components authorized by JTAs, CTAs, MTOEs, or TDAs are on hand or requested. The organization's supply operation is responsible for identifying, acquiring, accounting, controlling, storing and properly disposing of materiel authorized to conduct the mission of the unit and maintain the soldier. The organization is the foundation of the supply system. Exceptions and procedures are outlined in AR 710-2.

2-24. The Direct Support and General Support Activities provide class 1, 2, 3 (packaged and bulk), 4, 5, 7, 8 and 9 supplies directly to the using units on a customer support basis. These supplies are routinely procured through the unit supply rooms. In the event a Public Affairs element is operationally attached outside its assigned organization, it should coordinate before deployment for logistical support when possible. If prior coordination is not possible, contact for support should be made upon arrival into the theater of operations through the C-4, J-4, G-4, or S-4.

2-25. Accountability: All property acquired by the Army, regardless of source or whether paid for or not, must be accounted for, in accordance with applicable Army regulations and AR 710-2.

- Nonexpendable property is personal property that is consumed in use and that retains its original identity during the period of use. It requires formal property book accountability throughout the life of the item. It will be accounted for at the using unit level using property book procedures. Examples are desks, computers, file cabinets, chairs.
- Expendable items are property which is consumed in use or that loses its identity in use, and all items not consumed in use with a unit price

of less than \$100 and not otherwise classified as nonexpendable or durable. It requires no formal accounting after issue to the user. The following classes or types of property will be classified as expendable.

- Supplies consumed in the maintenance and upkeep of the public service. Examples are oil, paint, fuel and cleaning and preserving materials.
- Supplies that lose their identity when used to repair or complete other items. Examples are assemblies, repair parts, and accessories.
- Office supplies and equipment (such as paper, staplers and hole punchers) with a unit price of less than \$100.
- Durable property is personal property that is not consumed in use, does not require property book accountability, but because of its unique characteristics requires hand receipt control when issued to the user. Examples are hammers, lawnmowers, audiovisual production material and books.

2-26. Conservation of resources and property accountability is ultimately a supervisory responsibility. Property responsibility must be assigned and acknowledged in writing using hand receipts and property books as outlined in AR 735-5, *Policies and Procedures for Property Accountability* and AR 710-2.

2-27. Property book: Effective supply support at the using element or property book level requires timely and accurate processing of supply requests and receipts, accurate accounting records and adequate property control. Turn in, transfer, substitutions, hand receipt, etc., are accomplished in accordance with Army Regulations, AR 710-2 and logistical SOPs.

2-28. Budget: Budgets must be programmed in advanced. Organizations plan their budget in the previous fiscal year. They must be established and managed with the appropriate command resource manager/budget analyst. When allocating funds consideration must be given to equipment replacement and upgrades, recurring supply needs TDYs, maintenance, contracts, etc. Normal operating funds are allocated/dispersed by a public affairs element operational headquarters; however, during deployments for exercises/operations funds may be available from the tasking headquarters up front or on a recuperative basis.

2-29. Maintenance: Public Affairs elements must maintain their equipment in a deployment ready state. Preventive Maintenance Checks and Services (PMCS) is an important part of the maintenance program, and is the user's responsibility. The Public Affairs element's operational headquarters provides maintenance support. For example, an embedded Public Affairs section assigned to the Headquarters Company of a separate brigade would seek maintenance support from the Headquarters Company, then the brigade maintenance section. The company/brigade's maintenance SOP would be followed for 1st, 2nd, 3rd, etc., echelons of maintenance. Maintenance for communications and data processing (computers) equipment is coordinated through the G6 (DOIM).

2-30. Local Purchase: Local purchases may be an option for procurement provided the action is in the best interest of the government in terms of

timeliness, quality and cost. Local purchase requests must be made in accordance with AR 710-2. Approval for local purchase of nondevelopmental items starts at the first level of command authority and is accomplished in accordance with local policies and Army regulations. Nondevelopmental items is a generic term that covers materiel available from a variety of sources with little or no development effort from the Army. Sources include commercial items which fully meet an approved need, items being used by other U.S. services or agencies or items used by military or other agencies of foreign government. Most of these purchases are covered under the IMPAC Card program. Local guidance covers implementation.

2-31. Class A Procurement/Credit Card: Class A agents and government credit card holders must be identified and trained prior to their ability to accomplish those functions. Training is routinely accomplished at the installation level. Purchases for other than national-stock-numbered items are routinely accomplished using Class A agents and ordering officers, and the U.S. Government Credit Card.

2-32. SSSC: Self Service Supply Centers are managed at the installation or theater level. Users are required to have a valid SSSC account. Accounts are identified by DODAAC or UIC. Subaccounts are authorized IAW AR 710-2. Field resupply centers are often established at divisional-level logistics bases.

2-33. The best means of ensuring supply discipline is to be proactive and not reactive in supply operations. Enforcing compliance with regulations requires constant emphasis.

Chapter 3

Public Affairs Planning

During Operation Just Cause, PA planning and integration were inadequate. Commanders at all levels failed to involve public affairs officers in planning from fear of OPSEC leaks. The results were insufficient PA guidance provided to soldiers, family members and commanders; sometimes miscommunication to and confusion within Army family elements; and misuse of PA assets. A matter of urgent concern was the failure to plan for and use Reserve Component PA assets to relieve the pressure on an already small active PA force so that it could better handle both internal and external communication.

- Public Affairs After Action Report, TRADOC LLC, Phase II, Sept. 90

COMMUNICATING INFORMATION

3-1. Public Affairs operations assist the commander in communicating information and messages about his force and the operation to internal and external audiences. Like other operations, PA operations are conducted to bring about clearly specified, meaningful objectives, which support the commander's intent and contribute to mission success. Those objectives are defined in terms of the effect the PA operations are intended to have on target audiences -- the impact on target audience behavior that is desired -- and are measurable.

3-2. Once PA objectives are defined, PA operations are planned and executed to achieve those objectives. PA operations focus on the communication process -- an on going, dynamic, ever-changing process. The communication process is composed of elements involved in receiving, collecting, analyzing and interpreting data, identifying and analyzing audiences and formulating and transferring messages. This process is used to bring about a specified objective, while measuring and analyzing the outcome and effectiveness of the effort.

3-3. To support the commander's effort to communicate, PA professionals concentrate on five basic functions or core processes — planning, media facilitation, information provision, force training and community relations.

3-4. This chapter focuses on the systematic process for Public Affairs planning and decision-making. It addresses the information environment and the impact of information at the strategic, operational and tactical levels across the range of operations that requires public affairs considerations be totally integrated into the planning and decision-making process. Doing so enables PA personnel to prepare for potential situations, to synchronize efforts with other agencies that manage information communication, and to more successfully influence the coverage, interpretation and understanding of events. It limits the need for reactive, defensive attempts to buy time or control damage.

3-5. PA planning prepared in support of the CINC's theater campaign plan requires a series of decisions related to policy at the national level and the techniques at the tactical level. From policy to techniques, however, basic planning considerations are the same: What should the PA objective accomplish? With what audience? When? How? PA planning must not only be done at all echelons and within national policy but also within the limits of operational plans and capabilities.

TYPES OF PLANS

3-6. The amount of time available significantly influences the planning process. Two different methods of planning are described in the JCS-published Joint Operations Planning and Execution System (JOPES).

3-7. **Deliberate or Peacetime Planning** is the process used when time permits the total participation of commanders and staffs. Development of the plan, coordination among supporting commanders and agencies, reviews by staffs, planning conferences and development of proposed public affairs guidance can take many months. Deliberate or Peacetime Plans are prepared in prescribed formats--the complete operational plan (OPLAN) or the conceptual operational plan (CONPLAN).

3-8. **Time-Sensitive or Crisis Action Planning** (CAP) is conducted in response to crisis where U.S. interests are threatened and a military response is being considered. Crisis Action Planning is carried out in response to specific situations as they occur and that often develop very rapidly.

3-9. It is within the CAP process that established, working relationships between the PAO and operational planning staffs are crucial to the inclusion of PA considerations into OPLANS and OPORDS.

3-10. Both deliberate and crisis action planning are conducted within JOPES. Joint Pub 5-03.2, JOPES Volume II, describes detailed administrative and format requirements for documenting the annexes, appendixes, etc. of operational plans, and conceptual plans, the products of deliberate planning.

3-11. The purpose of JOPES is to bring both deliberate and crisis action planning into a single architecture to reduce the time required to complete deliberate or crisis action planning. This makes the refined results more readily accessible to planners, and makes it a more manageable plan during execution.

3-12. The overall procedures are the same, at all echelons, for both deliberate and crisis action planning.

- Receive and analyze the task to be accomplished
- Review the situation and begin to collect necessary intelligence
- Develop and compare alternative courses of action
- Select the best alternative
- Develop and get approval for its concept
- Prepare a plan
- Document the plan

Operation Just Cause

The basic problem---planning. No discussion concerning use of personnel can proceed without an understanding of the planning problem. Public Affairs in general was not sufficiently planned for by leaders or public affairs officers for Operation Just Cause. PAOs were not given time to plan. Only outstanding unit mission accomplishment, American public support and the hard work of public affairs personnel, prevented major PA failings in Panama. A longer duration and less popular action could have turned into a public affairs disaster.

The SOUTHCOM, XVIII Airborne Corps, and Army Special Operations Command PAOs were not informed that the operation would occur until 17 December and then they were given instructions not to discuss it with key persons on their staff. The 82d PAO did not learn of the operation until 18 December, 7th ID PAO, 19 December and OCPA **one hour** before H hour.

More critical however, was the absence of joint coordination. OASD-PA received a PA plan from SOUTHCOM public affairs in November, but the plan was never coordinated due to worries concerning possible security leaks. The XVIII Airborne Corps PAO indicated that he also knew of the operation in general terms in November but was unable to coordinate planning with the Director of Public Affairs SOUTHCOM. Because the plan was not staffed, OCPA was caught unaware. Divisional public affairs officers all indicated that they were not sufficiently drawn into planning. Some PAOs said they never saw a plan. It is obvious that sufficient public affairs planning did not occur **at any level**.

There was also a ripple effect downward caused by the lack of staffing by the Joint/OASD-PA. In addition, senior leaders at division level and above did not draw PA officers into planning to maximize the limited planning time that was available. Commanders strongly complained about poor balance of coverage in the media, inability to send command information at the same pace as civilian media reporting, and lack of sufficient public affairs guidance; yet senior leaders are reluctant to draw PAOs into the planning process to prevent these problems from occurring. Army leaders must come to grips with this dilemma.

(Public Affairs After Action Report TRADOC Lessons Learned Collection Phase II. Sept 1990)

3-13. An OPLAN is a complete, detailed plan. It includes a description of the concept of operations from the commander's perspective and presents additional annexes provided by various staff sections which identify specific functional area requirements, restrictions, limitations, or considerations. The inclusion of a public affairs annex is essential to successful integration of PA principles and guidance into the OPLAN.

3-14. A CONPLAN is an abbreviated operational plan, which requires considerable expansion or alteration to convert it into an OPLAN or OPORD. Detailed support requirements are not included. The commander determines what annexes will be included to complete the CONPLAN.

3-15. A Public Affairs Estimate is an assessment of a specific mission from a Public Affairs perspective. It is an examination of critical Public Affairs factors, their influence on the planning and execution of operations, and their potential impact on mission success. The senior PAO at each echelon is responsible for consolidating information and preparing the PA Estimate. A sample PA Estimate is included at Appendix C.

3-16. The Public Affairs Annexes to OPLANS or CONPLANS provide the details and instructions necessary to implement Public Affairs media facilitation, news and information provision, and force training operations. It is coordinated with all staff agencies, especially those that significantly impact the information environment -- Psychological Operations, Civil Affairs, Signal, and Military Intelligence -- to ensure that Public Affairs activities are synchronized with other activities.

DELIBERATE PLANNING

3-17. A commander continually faces situations involving uncertainties, questionable or incomplete data, or several possible alternatives. As the primary decision maker, the commander, with the assistance of the staff, must not only decide what to do and how to do it, the commander must also recognize if and when to act. How the commander arrives at a decision is a matter of personal determination. However, superior decisions (those, which offer the best solution, decisively, at precisely the correct time,) result from the commander's thorough, clear, and unemotional analysis of facts and supported assumptions. This is done through the "deliberate planning process."

3-18. To support the commander's decisions and command objectives, the PAO must develop a thorough, clear, comprehensive public affairs strategy. This strategy allows the PA to link public affairs considerations into planning for contingency, future and current operations. With the PA strategy, the PAO defines the public affairs perspective of the operation, and identifies how the Army public affairs involvement in this operation supports strategic goals. It provides the intent for PA operations and the Army approach to meeting the information needs of critical internal and external audiences. It is the framework for defining and developing the PA scheme of operations.

3-19. Based on the PA strategy, PA plans are developed for integration into OPLANS. A PA plan is produced by the operational commander's PAO, and it details the media facilitation, news and information provision, and force training and support procedures which will be employed in support of the operation.

3-20. The first crucial step in fulfilling the PA strategy requires the PA Plans officer/NCO to establish and maintain a routine, ongoing relationship with operational planners within the organization. The PA plan is coordinated with key staff agencies, integrated into the OPLAN as a PA Annex. Synchronization with these other activities ensures services and support required by the PAO is provided and multiplies the impact of the PA plan. This process is followed at subordinate echelons as planning guidance is communicated down the operational chain of command.

3-21. There are five phases in the deliberate planning process. Items in parenthesis identify PA actions performed within each phase:

- **Phase I** - Initiation. The task assigning directive outlines the major combat forces available for planning, gives general planning instructions, lists assumptions for planning, and specifies the product document such as an OPLAN, CONPLAN. (PA planners begin assessing the information environment, its impact on operations and the PA requirements to operate within a specific arena.)

- **Phase II** - Concept Development. (Using the supported CINC's mission statement and concept of envisioned operations, the supporting PA planners analyze the mission, formulate tentative courses of actions and develop the PA Estimate for the operational scenario and requirements.)
- **Phase III** - Plan Development. Subordinate commanders use the CINC's concept and the allocated major combat forces as the basis to determine the necessary support, including forces and sustaining supplies for the operation. (The PA planners provide the CINC with recommendations for public affairs assets required, phasing of PA forces and support into the theater of operations, and perform a transportation analysis of their movement to the destination to ensure that the PA segment of the entire plan can feasibly be executed as envisioned. For the supported CINC's PA requirements, above those organic to the tasked major combat elements, the supporting commands [force providers] of each service, as much as possible, identify real-world PA assets to take part in the plan and sustainment to meet requirements. The supporting command identifies PA requirements in OPLANs, OPORDs, and taskings, through operational channels, to major subordinate commands.)
- **Phase IV** - Plan Review. The review process is more than a single phase in deliberate planning. The Joint Staff performs or coordinates a final review of operations plans submitted by the combatant CINCs. It is a formal review of the entire operation plan. Approval of the plan is the signal to subordinate and supporting commands to develop their plans in support of the CINC's concept. (PA planners do not wait until the plan is approved before beginning to develop their supporting plans; they have been involved in doing this, while coordinating with their command's planning staff. In the meantime the CINC has been building the overall plan.)
- **Phase V** - Supporting Plans. The emphasis in the Supporting Plans Phase shifts to the subordinate and supporting commanders. (This is the phase in which PA planners begin to concentrate on how to meet tasks identified in the approved operation plan by preparing Public Affairs Annexes to supporting plans. This input outlines the actions and relationships of assigned and augmenting PA assets.)

INFORMATION ENVIRONMENT ASSESSMENT AND PA ESTIMATE

3-22. Planning fosters effective application of knowledge, logic, and judgment. Analysis of the information environment (IE) starts the process used to develop an estimate of the situation.

3-23. The IE analysis provides the basis for the development of all PA operational plans and is a channel for integration of strategic, operational and tactical planning guidance. It is a method of identifying factors within the information environment that have potential implications for the planning and execution of Army operations. PA planners study and evaluate the dynamics of the area information environment to identify specific public affairs operational considerations.

3-24. Analysis of the information environment focuses on research into the following areas, which will be put into the “Situation and Considerations” portion of the PA estimate:

- Information infrastructure
- Media presence
- Media capabilities
- Media content analysis
- Public opinion assessment
- Information needs assessment
- Impact assessment/courses of action (COA)

3-25. An analysis of the IE using this approach builds a complete picture of the conditions facing commanders and their PA forces, providing them the tools necessary to anticipate trends, actions, issues, and conflicts. The PA staff officer or NCO conducts research and assessment for the estimate then evaluates, prioritizes, and suggests courses of action that public affairs can best support, while considering the information environment. To acquire all the information necessary for an accurate picture of the operational environment, the staff officer or NCO must work closely with intelligence, civil affairs, psychological operations, military police, visual information and other staff sections involved with information gathering.

3-26. The PA assessment must include those aspects under the control of the commander, as well as those the commander cannot control. This can only be achieved with a thorough integration of PA planning at all stages and into all aspects of the planning and decision-making process. Although a variety of techniques may be used in the analysis of the IE, the PA assessment should address the following primary categories.

- **Information Channels and Infrastructure.** This element focuses on an assessment of the information infrastructure. It addresses the resources, communications facilities, organizations, and official and unofficial information channels available within the area of responsibility (AOR). It addresses the means to transmit and receive unofficial information. It addresses specific requirements for American Forces Radio Television Service (AFRTS) information services and the availability of assets to meet theater requirements. It identifies the availability of host nation telephone service for voice and data transmission, the accessibility of audio/video channels, the prevalence of private communications devices such as cellular telephones, facsimiles, computers with modems, radios and televisions, and the nature of the information available through these information channels. It addresses alternate means of voice and data communications, whether military or government contracted, for use in the absence of host nation information channels and infrastructure. Much of the information required for this category may be obtained through civil affairs or psychological operations elements assigned or attached to the command and U.S. Information Service offices supporting consulates or the embassy within the area of operations.

- **Media Presence.** This is an assessment of the media presence in the area of operations prior to the introduction of American forces and an assessment of the expected level of media presence commanders should anticipate once deployment begins. It includes a description of the type of media (print or broadcast), the visibility of the media (local, national, or international; American or foreign), and the focus of the news media present (news or entertainment) covering the operation. The assessment of the media presence should address the authority under which media representatives are operating (open or closed borders, and free press or controlled press) and the reporters' degree of access to the theater of operations.
- **Media Capabilities.** This element is an assessment of the media's information collection, production, transmission and communication capabilities in the AOR. This element analyzes the technological capabilities of the media representatives present within the AOR. It describes their level of sophistication (if they must transport products out of the area of operations for transmission to parent media or do they have self-contained interactive satellite telecommunications access). It also addresses the media's level of logistics support and its potential impact on Army commanders who are required to provide the media free and open access to the AOR. It includes information about their transportation assets, resupply channels, and equipment maintenance requirements. Additionally, the media's general ability to provide their own security should be assessed.
- **Media Content Analysis.** Media content analysis is an assessment of news coverage, the media's agendas and an analysis and prioritization of the potential strategic and operational issues confronting the command. Media content analysis assesses what is being said, by whom, and how it is being presented. It is a constant process that must begin well before planning for a specific operation begins and continues through Mobilization, Deployment, Employment, Sustainment, and Re-deployment. Content analysis reveals the meaning, tone, and accuracy of messages, how the information was presented, and the cumulative affect of the information. A media content analysis will provide an evaluation of the quantity of coverage, both in and out of theater, and the nature of that coverage. This will assist the commander to understand the strategic context, the measure of success and the definition of an end-state for the operation as viewed from outside the command and the Army itself. It will also be an essential element of friendly information (EEFI), as explained in FM 3-13 (100-6), in determining objectives and strategies for communicating the Army perspective, and for working to achieve a balanced, fair and credible flow of information.
- The specific methods for conducting a media content analysis are explained in Appendix O.
- **Public Opinion.** A public opinion assessment surveys the national and international attitude about the operation and the command, leaders and soldiers conducting it. This assessment looks at the perceptions held by major audience and coalition groups, and the relative solidity or strength of those attitudes. It addresses the perceptions held by international

audiences: those traditionally allied with the United States and those traditionally considered to be adversaries of the US. The public opinion assessment should include as a minimum, consideration of the following groups:

- American public (general)
- Civilian political leadership
- Coalition and allied forces and their general population
- Host nation citizens
- International public
- Internal command audience
- Home station community
- Specific special interest groups (if needed)
 - In determining the effects of the media on public opinion, there are three general types of evidence which explain behavior response: direct indicators; indirect indicators; and post-event sampling. Direct indicators are evidence that provide a direct link between the information received by the public and the behavioral response. These indicators include but are not limited to: personal interviews and surveys to estimate awareness and understanding of an issue; dissident group marches, meetings, advertising and other activities; monitoring internal and external law, order and discipline activity; and chain of command after action reports, staff journals and duty logs. Indirect indicators are evidence that identifies behavioral response generated by separate events or activities which appear to be the result of reception of media information. These indicators include: cause-effect estimates from information products and sources other than the military or civilian commercial media; interest level in news media products; shifts in social or economic trends; shifts in political support.
 - Post-event sampling considers the qualitative and quantitative statistical evidence that identifies the level of and nature of awareness and behavioral response to information. This includes the results of surveys, interviews, group observation, probability and non-probability samples, which will identify if and how the public was influenced by information products or messages.
- Information Needs. This is an assessment of the information needs and requirements of the previously identified key publics. It analyzes and prioritizes key external and internal audiences and assesses their news and information expectations. It identifies the types of information that should be made available to soldiers, their family members, other home station community audiences, the American public, and the host nation local populace. It will identify other audiences, such as allied or adversary leaders and publics that will be interested in available "cross-border" information.

PA ESTIMATE AND PA GUIDANCE COORDINATION

3-27. The purpose of the PA Estimate is to determine whether the mission can be accomplished and to determine which COA can best be supported by public affairs. In preparing its estimate, the Public Affairs staff:

- Reviews the overall mission and situation from the public affairs and information environment perspective.
- Examines all public affairs factors impacting on or impacted by the mission.
- Analyzes each COA from the public affairs perspective.
- Compares each COA based on the public affairs functional analysis.
- Concludes whether the mission can be supported by public affairs, and from the public affairs perspective, which COA can best be supported.

3-28. The Public Affairs Estimate summarizes the information environment, prioritizes the major issues confronting the command and predicts anticipated outcomes in detail. It measures the effectiveness of previous and current information strategies, and based on this evaluation, identifies possible courses of action to support command PA objectives. The PA Estimate also contributes to the development of Public Affairs Guidance (PAG) for specific operations or missions. PAG is a primary tool that guides commanders and PA leaders in the application of doctrine and policy during operations. PAG provides the PA force at all echelons standard operating procedures.

3-29. But to be effective, PAG must be developed with the needs of the front-line PA force in mind. PA planners must be able to "see" and "feel" the battlefield. They must have an understanding of the information environment and how it will change throughout the operational continuum. They must be aware that all the resources available at the planning headquarters may not be available or feasible in the theater of operations. Issues that need to be addressed include information release authority restrictions (national, theater or local). These restrictions often place the PA leader in a difficult situation -- one in which an overwhelming number of news media on the scene will seek answers to legitimate questions about unfolding events -- activities that the PA leader cannot discuss. The result is a loss of credibility for the Army.

3-30. DOD policy requires that proposed PAG be provided to the Assistant to the Secretary of Defense for Public Affairs (OTASD-PA) by the unified, specified and other major commands for all operations. This requirement includes major joint training exercises that could attract national and international attention. Subordinate command PA leaders should conduct continuing PA assessments as a part of mission training for theater-specific contingencies in anticipation of PAG development requirements there.

PAG DEVELOPMENT

3-31. Upon receipt of a "warning order," the commander, through the PA staff, will begin development of proposed PAG. In reality this warning order may be preceded by a telephonic "heads up" call from a PA planner at a higher headquarters that allows PA planners to begin working on proposed PAG before the hard copy of the warning order arrives. This proposed PAG should be based on the warning order or other planning guidance, the proposed command

operations plan (OPLAN), and the PA Estimate. Once the proposed PAG is developed, it is staffed through command staff. Once approved by the commander, it is forwarded through major command and Unified/Specified command PA channels to DoD.

3-32. Commanders of Unified/Specified commands should ensure the proposed PAG is coordinated with appropriate elements and functional staffs within the theater of operations. This includes governmental and non-governmental organizations such as the State Department and its embassies, civil affairs, country assessment teams, host governments, allied force public affairs teams, the four U.S. military services and their subordinate commands.

3-33. PA leaders at all levels, specifically major command and above, should work to approve PAG as quickly as possible in order to provide subordinate PA leaders the opportunity to develop and implement PA strategies to support their commands. The format for PAG is included as an appendix to this manual at Appendix E.

PA ANNEX DEVELOPMENT

3-34. Once the PA estimate and proposed PAG are completed, and the other staff officers have completed their estimates, the commander selects a course of action. The commander then outlines it to the staff. The commander may select one of the proposed COAs, a combination of two or more, or a completely new one. The PA staff must then be prepared to enter the plan development phase (Phase III) which requires development of a PA annex. A format for a PA Annex is included at Appendix D.

3-35. The operation-specific approach to conducting public affairs activities is called a PA scheme of maneuver. This PA scheme summarizes the commander's PA intentions, and details the media facilitation, news and information provision, and force training and support procedures, which will be employed to support a particular operation.

3-36. The PA scheme consists of the PA estimate of the situation, higher command PA guidance, and the selected course of action. It is coordinated with key staff agencies, integrated into the operation plan through the development of a PA annex, and synchronized with the other activities to be executed as part of the basic plan.

3-37. The PA scheme, when included in the PA annex, should not only identify public affairs force requirements for the operation, but more importantly, it must provide the commander a visual picture of how public affairs will support the commander's concept of operation as outlined in the plan.

3-38. The PA activities addressed in the PA scheme of maneuver are:

- **Media Facilitation.** Media Facilitation is activities executed to support news media efforts to cover the operation, facilitate the timely, accurate, balanced provision of information which communicates the Army perspective, and minimizes the media disruption of operations or endangerment of mission accomplishment. Media facilitation is accomplished by the early establishment of a media center as the focal point for media representatives seeking to cover the operation. Normal

media center operations include scheduling briefings, coordination for interviews; responding to media queries; coordinating unit visits and media escort requirements; and resolving media - military incidents. To prepare for encounters with the media, commanders must accept and understand the role of the news organizations and the journalists in the theater, and their capabilities in getting information from the battlefield or area of operations. Commanders must provide media access to the force, keeping in mind the impact their technology will have on operations security. Commanders must identify and provide support and resources to assist the media in their mission.

- **Information Strategies.** Activities executed to fill the news and information needs and expectations of internal and external audiences. Proliferation of personal computers, the World Wide Web, the Internet, on-line services, fax machines, E-mail, cable television, direct broadcast satellites, copy machines, cellular and wireless communication and many other information technologies have created an endless stream of data and information that flow into a world filled with images, symbols, words, and sounds. Public affairs specialists acquire information using a variety of sources. Because of the volume of information and the vast number of potential distribution mediums, the PA staff uses a systematic acquisition strategy. They acquire information from participants, leaders, developed sources, the media, research and development, intelligence, culture at large, and subject matter experts. Print, video, audio and electronic information products are provided to deployed soldiers, home station audiences such as family members and the home station community and news media representatives using contracted services and organic military assets. They communicate the Army perspective and contribute to timely, balanced coverage of the operation.
- **Force Training and Support.** Activities executed to assist members of the DA community in interacting with media representatives. Force training and support are conducted to educate soldiers, family members and DA civilian employees on their rights and responsibilities with respect to news media representatives attempting to provide coverage of an operation and related issues. It focuses on helping them to respond when they encounter news media representatives seeking interviews, photo opportunities, responses, reactions, interpretations or comments on an operation, policies or events. The intent of force training and support is to assist members of the community and media representatives in approaching each other with mutual respect. Training for public affairs personnel expands on soldier and unit leader training. It stresses individual as well as collective tasks with an aim of developing units fully prepared to accomplish the range of public affairs missions. It integrates public affairs into the battle staff and trains PA planners to assess the operation environment from a public affairs perspective, produce a PA Estimate, develop the PA Annex and PA Guidance.

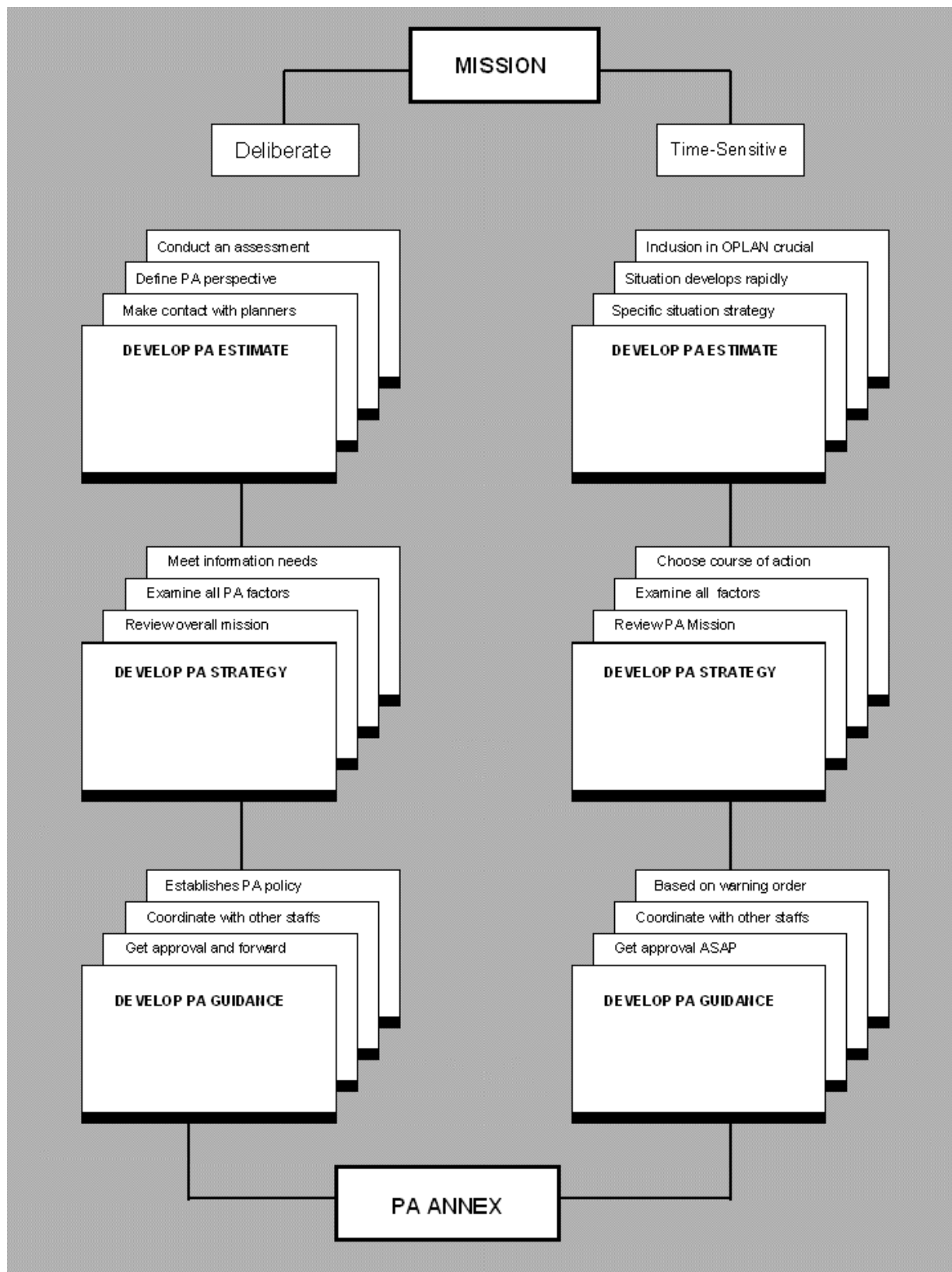


Figure 3-1. PA Planning

PA INTEGRATION INTO STAFF PLANNING

3-39. Concurrent with formulation of the PA staff estimate, PAG development, and production of the PA Annex to the OPLAN, PA planners must be an integral part of the staff planning process, especially on the following matters.

3-40. **Force Planning.** In force planning, the PA staff works with the J3/G3/S3 staff. Force planning consists of PA force requirements determination, force list development and refinements in light of PA force availability and PA force shortfall identification and resolution. In force list development, the PA assets needed to meet the mission are identified. Force availability is considered based on the strength and readiness of organic PA units, their personnel and equipment. Identification of PA force shortfalls addresses the lack of organic or mission-capable PA assets and the additional requirements and augmentations for PA units and personnel needed to accomplish the CINC's concept of operations. All taskings for unit or personnel augmentation must be validated and requested through the J3/G3/S3 operational channels. Tasking authority does not exist PA staff to PA staff or PA staff to subordinate unit.

3-41. **Support Planning.** To plan for logistical support of PA units and personnel assigned to carry out the CINC's concept of operations, the PA staff coordinates with and identifies support requirements to the J4/G4/S4. Specific logistical areas of concern include support in all classes of supply to the PA force, availability and authorized levels of support to civilian media, local purchase and contract support, property accountability, and vehicle transportation and maintenance support as tasked for through the J3/G3/S3.

3-42. **Transportation Planning.** PA forces move from their home station to a specified destination in the theater, either as part of their parent organization or a task-configured PA unit. This movement involves planning by several echelons of command, possibly stops at several intermediate locations en route, and a schedule constrained by a variety of operational requirements and priorities. Key staff for the PA planner to interact with include the command's transportation officer, movements control officer, and staff officers within the J3/G3/S3 and J4/G4/S4 that have staff supervision in this area. Key items PA planners need to track in this process are:

3-43. **Time-Phased Force and Deployment Data (TPFDD).** The TPFDD is the JOPES database portion of an operations plan. It contains time-phased force data, non-unit related cargo and personnel data, and movement data for the operation plan. The Appendix 1 to Annex A of the operation plan is the Time-Phased Force and Deployment List (TPFDL) which identifies types and/or actual units required to support the operation plan and indicates origin and port of debarkation or ocean area. It may also be generated as a computer listing from the TPFDD. PA planners must ensure that the TPFDD/TPFDL contains their unit line numbers (ULNs) for units, personnel, or cargo. Assets not listed on the TPFDD do not deploy. It is crucial to the planning process that the PA staff closely coordinate with the J3/G3/S3 and J4/G4/S4 to ensure that PA assets are reflected on the TPFDD or included as organic/attached assets to parent units with validated ULNs on the TPFDD.

3-44. **Destination (DEST)** - the geographic location where the force is to be deployed/employed.

3-45. The distances between the port of debarkation (POD) within the theater of operations to the destination (DEST), to the port of support (POS), to the marshaling area or assembly area. Where troops land at the APOD (Aerial Port of Debarkation) or SPOD (Seaport of Debarkation) they may be substantial distances from the port where the PA element's equipment arrives in theater and operations begin.

3-46. Transport of equipment must be planned for it to be available at the earliest possible date within the theater of operations. Thus, the PA planner must set a realistic, achievable required delivery date (RDD). This must be aligned with the CINC's required date (CRD). Planners begin with the RDD to establish two interim dates, the earliest arrival date (EAD) and the latest arrival date (LAD). Once these dates are established, then the ready to load date (RLD) and the available to load date (ALD) are established at home station to meet the earliest departure date (EDD).

3-47. **Communications/Automation Planning.** Key planners on the coordinating staff for communications and automation planning are the J6/G6, G3/S3 and CE officer. Specific concerns include priorities for radio/telephone communications, satellite uplinks and downlinks, number of telephone links/trunks allocated to PA requirements, E-mail access, and inclusion into the Communications Electronics Operating Instructions (CEOI). In addition, consider possible development of web pages or sites, like BosniaLink, the Task Force Eagle Homepage, the Desert Voice in Kuwait or Task Force Falcon in Kosovo.

3-48. **Information Environment.** When formulating PA plans and coordinating on the overall plan with the commander's staff, PA planners work closely with the staff element having supervising responsibility for each separate issue.

- Operational Security - G3/S3
- Psychological Operations - G3/S3
- Civil Military Operations - G5/S3
- Combat Camera Operations - G3/S3
- Armed Forces Radio and Television Operations - G3 and Armed Forces Information Service

APPLYING METT-TC

3-49. To function as part of a deployed or deployable organization the PAO and PA NCO must think and state requirements in terms that the rest of the organization can understand. Moreover, the PAO must fit the operational PA requirements into the operational planning procedure of the organization about to deploy. Operators think in terms of mission, enemy, terrain and weather, troops, time available and civilian considerations or METT-TC. METT-TC is used to envision how the operation will occur, to identify potential risks or hazards, and to define troop and equipment requirements.

3-50. **Mission** - alert, marshal, deploy, operate (internal information, media facilitation, information provision) redeploy

3-51. **Enemy** - rumors, disinformation, propaganda, OPSEC

3-52. **Terrain and weather** - theater of operation, theater of war, area of responsibility, intermediate staging base, homestation and weather condition

3-53. **Troops** - embedded assets, units (PADs, MPADs, BODs, PAOCs) AFRTS, HTNRs, ABS, NBS, JIBs, Star and Stripes, stringers, surrogate PAOs, Adjutants, and S1s. All other AG services, signal, USIS, DoS and homestation forces and audiences

3-54. **Time available** - timeline, transition, reports

3-55. Essentially, the information required for a METT-TC analysis is provided by the PA estimate of the situation, which contains the selected course of action and detailed descriptions of PA actions to be performed. These requirements are then translated into the command's planning language and format, resulting in the PA Annex to the OPLAN or OPORD.

3-56. At theater level and above, the PA annex is normally Annex F to the OPLAN. At corps and below, commanders can tailor their plans to fit specific needs or preferences, so the PA annex may fall in another location among the annexes. Regardless of where it is located, the PA Annex is used to provide information about the conduct and execution of public affairs operations in support of the basic OPLAN. The PA annex outlines the situation, identifies the specific PA mission and explains the concept of the operation. It also provides detailed information and guidance PA personnel need to conduct successful PA operations at the operator level. A sample PA Annex format is included in this manual at Appendix D.

3-57. Phase IV, Plan Review, consists of staff coordination and plan adjustment or correction.

3-58. The final phase of the planning process, Phase V, Supporting Plans, follows the same course as the first three phases, with attention aimed at the specific aspects of the overall plan. These supporting plans focus on conducting specific operations, which must be successful in order to guarantee success of the larger mission. PA support to these supporting plans is as important as PA coordination and input to the main campaign plan.

STANDING OPERATING PROCEDURES

3-59. Integral to the operational effectiveness of PA sections are their standing combat operating procedures. These routine procedures ensure that all members of the section are working in concert toward the same PA objectives and that PA activities are easily blended into the actions of the command's staff.

3-60. PA SOPs differ from PA plans and PA annexes to OPLANS in that they specifically detail and describe how PA is conducted within a certain command or unit. They are routine procedures and actions that apply to each section or unit.

3-61. The senior PA NCO prepares the staff section or unit PA SOP. PA units designated to support or augment specific commands in the execution of contingency missions should use SOPs from these supported commands.

3-62. SOPs should address:

- Preparation for combat. Stockage, prepackaging, and maintenance of vehicles, equipment, and expendable and nonexpendable supplies.

- Vehicle load plans.
- Alert and mobilization actions, routines and procedures.
- Composition of quartering and/or advance parties and rear echelons.
- Organization for combat, including detailed delineation of duties for each individual, shift compositions, and plans for reconstitution in the event of combat losses.
- Operations center and media center layouts (theater, corps and/or division main/rear CPs).
- Procedures for preparing, disseminating and disposing of records, reports, estimates and orders.
- Physical, document, and tactical security.
- Communications procedures. These steps include radio/telephone operating procedures unique to the command, message routing and preparation formats, and operation of communications and data transmission equipment.
- Movement and displacement.
- Operations under NBC conditions.
- Field Maintenance.
- Personal hygiene, rest, and morale, welfare and recreation requirements and procedures during deployment.
- Post-operations and reconstitution procedures. Maintenance, restocking and packaging composition of advance and rear parties; disposition of records, and preparation of after-action reports are included.
- A PA SOP outline is included in this manual at Appendix K.

POST-MISSION PLANNING CONSIDERATIONS

3-63. During mission planning and preparation, Public Affairs planners should consider debriefing and other post-mission activities. These activities normally include:

- Collective debriefing of the operational element on all aspects of mission execution, including lessons learned.
- Collection of maps, notebooks, logbooks, plans, annexes, duty officer/NCO logs, serious incident reports, news releases, tapes and transcripts of news briefings and conferences, and all other information products pertinent to the mission after action report.
- Maintenance and storage of unit and personal equipment.
- Individual debriefing of key personnel.
- Other reconstitution measures as required.

3-64. Upon completion of these activities, the operational element begins pre-mission sustainment training or prepares for its next mission. The planning staff begins review of lessons learned for integration into future plans. See Appendix W for information on producing PA Lessons Learned for the Center for Army Lessons Learned.

Chapter 4

Media Facilitation

"It is likely that small pools of news media will be assigned directly to operational units to cover all facets of activity. With few exceptions, there will be no security review of media copy or audiovisual products. The policy will be to maintain security at the source. It is important to support the efforts of the media and our dealings with them should not be confrontational, but professional and courteous."

- GEN Binford Peay
Commander, U.S. Central Command [1994]
FM 3-61 (46-1), Public Affairs Operations

PRINCIPLES OF INFORMATION

4-1. In the past 20 years the Army has undergone a fundamental shift in our approach to dealing with the news media. In response to the perceived treatment by the press during the Vietnam War, we have gone from adopting an exclusionary tactic for the conduct of the invasion of Grenada in 1983, to managing the controversial pool system for covering the initial stages of the Gulf War in 1991, and more recently evolving into an almost completely open access policy in Somalia (1993), Haiti (1994) and Bosnia (1995) operations.

4-2. The results of this policy evolution are the "DoD Principles of Information," which form the foundation for the PA function of media facilitation. The basic approach that DoD and the Army take to media facilitation is contained in Appendix A, The DoD Principles of Information and Appendix B, The Guidelines for Coverage of DoD Combat Operations.

4-3. Simply stated, media facilitation is providing assistance to civilian and military news media representatives covering an operation. The objective of media facilitation is to support news media efforts. This includes providing accurate, timely, balanced, credible coverage of the force and the operation, while minimizing the possibility that media activities will disrupt the operation.

4-4. Media facilitation includes assisting media entry into the area of operations, registering media representatives, orienting them on the ground rules for coverage and ensuring that they understand the security policies and constraints under which they must agree to operate if they desire Army support.

4-5. Media facilitation also involves arranging interviews and briefings, coordinating unit visits and escorts, and assisting media representatives with transportation, messing, billeting, communication support, safety and equipment. Media facilitation involves the early establishment of a media center as a focal point for media wishing to cover an operation, for Army personnel seeking assistance with media representatives in their area, and for resolution of problems or incidents resulting from media-military interaction.

4-6. A primary strategic goal of any Public Affairs staff is to support an operational commander in achieving a constant flow of complete, accurate and timely information about the mission and U.S. forces.

4-7. The PA staff accomplishes this goal by making information fully and readily available within the constraints of national security and OPSEC, and by facilitating inclusion of civilian and military news media representatives in military units whenever possible.

PA STAFF AND MEDIA CENTER RESPONSIBILITIES

4-8. **PA Staff Sections.** The prime focus of the PA staff is staff coordination. The staff will be the element tasked with executing the media facilitation strategy.

4-9. The staff provides PA planning and operational guidance to the PAO. They ensure leaders within the command understand the commander's media relations policies, and serves as the command ombudsman in the settlement of conflicts between the media and the military.

4-10. As an active participant in the command's information planning element, the staff coordinates with G2, G3, G5, PSYOP, U.S. Information Service, and other staff elements in developing the commander's information strategy to ensure synergy and to reduce the probability of conflicting messages.

4-11. **Media Operations Centers.** Currently, joint, combined and Army media centers fulfill the requirement for a focal point for the news media during military operations. In essence, the media operations center (MOC) is a command post for media support efforts. It serves as both the primary information source, and as a logistical support and coordination base for commercial news organizations covering the operation.

4-12. Media centers are organized when large numbers of news media representatives are anticipated to cover military activities. Media centers may be formed for all types of operations or for any stage within an operation.

4-13. When operated by unified/specified commands, these media centers may be called a Joint Information Bureau (JIB). At the combined commands, they are called an Allied Press Information Center (APIC), Coalition Press Information Centre or Combined Information Bureau (CIB). At theater level and below, they are simply referred to as Media Operations Centers.

4-14. MOCs support the commander and are subordinate to the command's PAO. They provide the commander a professional, immediately available, fully trained organization designed to respond to

national and international civilian media interest in American military operations.

4-15. In addition, the media operations center provides the following functions:

- A single point of contact and information source for media within the theater
- Briefings and enforcement of media guidelines and ground rules
- Primary information release authority for the senior PAO
- Coordination of news media coverage with corps, divisions, brigades, etc.
- Coordination with all service branches for each service, agency or country
- Identification and communication of host-nation sensitivities to all personnel in theater
- Preparation for and conducting press briefings and news conferences
- Registration of news media personnel
- Media Operations Center Staffing and Organization

4-16. Organization and personnel staffing of media operations centers are determined by the responsible command in coordination with the PAO and his staff. APIC staffs should be a proportionate representation of the forces, with representation from all services involved in the operation. This will be determined by CPA at the unified command. Regardless of the echelon establishing a media operations center, the organizational model is functionally designed and remains relatively the same.

4-17. MOCs normally consist of two major elements: a Headquarters Group and a Media Operations Center Group.

4-18. The headquarters is made up of the command group and support staff. The command group contains the commander, deputy commander and/or executive officer, and the sergeant major. The support staff is normally task organized to support tailored forward deployed MOC teams or sub-MOCs when the APIC operates as other than a single element. The support sections provide administrative support, conduct lease and purchase contracting, setup, operate and maintain the unit's equipment, and conduct the day-to-day operation of the MOC. The support sections are responsible for the execution of MOC communications, supply operations, administration support, vehicle maintenance, security and other support functions as required.

4-19. The Media Operations Center consists of a Plans Section, a Media Support Section and an Information Operations Section.

4-20. The plans section is responsible for all MOC media planning. It establishes MOC requirements and determines operating procedures and policies. It maintains channels of communication with OASD(PA) and the JPAO (or senior command PAO). It is responsible for recommending and assisting in the development and dissemination of PA Guidance. It monitors available major U.S., international and local television and radio broadcasts and print publications providing coverage of the

operations, conducts news media analysis and evaluates the effectiveness of MOC operations.

4-21. The Media Support Section (MSS) is the primary point of contact for news media representatives (NMRs) in an area of operation seeking information or assistance in covering the force and the operation. The MSS receives and registers NMRs, briefs NMRs on the media ground rules and security procedures or concerns, and orients them on the force, the operation and other pertinent issues (special safety or host nation considerations).

4-22. The MSS orchestrates the command's news briefings and coordinate for subject matter experts to explain and discuss operations and capabilities. The MSS is also responsible for coordinating for appropriate, knowledgeable escorts, unit visits, and service member interviews. It assists the Joint Force or other senior PAO in preparing service members for interaction with the news media. Finally, it provides support to Joint Force elements and service component PA elements seeking assistance with NMRs.

4-23. The Information Operations Section is responsible for monitoring plans and operations from within the command's operation center and assessing the PA implications of events occurring throughout the area. It ensures that the MOC has current situation information, is aware of issues of potential media interest, and can obtain any operational information necessary for the development of responses to media inquiries in a timely manner.

4-24. The IO section ensures that PA operations are synchronized with other combat functions and promote early coordination of PA, CA and PSYOP functions.

4-25. **MOC Staffing.** Currently, media operations center staffing requires augmentation, either by PA-trained individual fillers or by Army PA units. As fully independent units, the Public Affairs Operations Center (PAOC) (SRC 45423A000) and Mobile PA Detachment (MPAD) (SRC 45413A000) are currently organized, trained, and prepared to fill this role.

4-26. In fact, these Army PA detachments are specifically designed to function as an Army media operation center in theater, corps, or division-controlled operations. MPADs can be combined to form media sub-centers in forward battle areas.

4-27. PA personnel from non-deployed commands and installation PA sections may be called upon to augment news media centers however, requests for individual augmentation should be coordinated through operational channels. Reserve and Guard unit personnel can be used to augment on a voluntary basis.

4-28. An example of a media operations center is included at Appendix L.

MOC OPERATIONS

4-29. In major operations -- actions conducted by unified commands -- a Joint Information Bureau will usually be the first to deploy for this purpose. A JIB will be staffed by public affairs personnel from the services represented in the joint force; participating services may

establish their own media centers subordinate to the JIB to disseminate information about their particular missions.

4-30. As the operation unfolds, the Army plans for and contributes to a replacement PA organization for the JIB which consists of individual PA personnel from each of the services and Army PA detachments.

4-31. Media Center operations will be based on five primary assumptions:

- Accurate information is available in a timely manner and adheres to the DoD Principles of Information in Appendix A.
- Current trends in communications technologies within the information environment will continue to reduce the news media's reliance on military support and assistance when covering operations and will continue to increase the availability of information to a worldwide audience.
- Media representatives will be in an area of operations at the start of, and in most cases, before an operation begins.
- Media interest and coverage in non combat operations may be higher at the outset, and barring a significant event which renews national or international attention or interest, will taper off over time. During a high-intensity conflict, media interest could remain high.
- Military PA elements require access to complete information, state-of-the-art communication equipment, and must possess sophisticated coordination channels in order to pre-empt speculative, inaccurate or biased reporting.

4-32. Media centers will support and be responsible to the senior commander of the operation on a 24-hour basis. Media centers are usually established by unified command CINCs to support the news media in an area of operation.

4-33. During the first 24 hours after arrival in a new theater of operation, a media center can provide limited media support services.

4-34. Within this first operational day, the MOC must:

- Establish a "hasty media center" as the initial focal point for the news media until additional media support forces arrive.
- Establish communication with OASD (PA), each service's PA chain of command, and with units operating within the theater.
- Request operational information release authority within the theater.
- Establish command structure/lines of authority.
- Coordinate with appropriate authority for leasing and purchasing contracts.
- Begin to register news media personnel in the area
- Provide basic media support (coordination of media access to subordinate units and media escort as resources permit).
- Assist or conduct command news briefings and conferences.
- Coordinate Subject Matter Expert (SME) interviews.
- Be capable of assisting in the transmission of media products.

4-35. Media Support -- Initially, the media operations center will need to provide varying degrees of support to news media personnel including specialized equipment (flak vest, NBC gear, helmets), transmission of media products, etc.

4-36. This support may include but not be limited to:

- Coordinate media contact with units or individuals to include SME interviews
- Provide a single point of contact for information on operational issues
- Provide news releases, fact sheets, copies of transcripts for news briefings/conferences and copies of archival file products
- When other means are not available, the media center may provide coordination for transportation (to and from interview sources), transmission of media products and food and billeting
- Provide limited media escort within the area
- (SOPs for MOCs should be pre-established for each theater of operation and used for media operations within that theater.)

REGISTRATION OF MEDIA

4-37. Principle to supporting the commander's information strategy is the inclusion of news media representatives (NMR) within Army units from the earliest pre-deployment stages of all operations. The personal safety of media representatives, as acknowledged by the media themselves, is not a reason for excluding them from operations.

4-38. However, all media requesting support or access to units to cover Army operations must be registered. This includes freelance journalist, military media representatives, such as those who are assigned to Armed Forces Radio and Television Service, Stars & Stripes newspaper and other Armed Forces Information Service (AFIS) personnel who are not supporting units on the battlefield.

4-39. **Registration versus Accreditation.** Accreditation is the verification and validation that a person represents a legitimate commercial news organization. This means that accrediting governments or military organizations will physically verify the affiliation of an applicant with a specific news organization.

4-40. This is difficult to perform amidst an ongoing operation, especially when deployed far away from CONUS. It is generally accepted that, when overseas, the decision to accredit news media is made by the host nation's government in coordination with the combined or unified commander.

4-41. When accreditation isn't required by the host nation, responsibility for this determination is held by the combined or unified commander. Accreditation is normally performed at Corps level or higher.

4-42. Accreditation is a major problem for many commands because they are forced to determine the legitimacy of smaller, lesser-known news organizations and freelance journalists without news organization affiliation.

4-43. Unless it is absolutely required by host nations, the American military will attempt to avoid accreditation.

4-44. Registration, however, is merely an accounting tool, which provides PAOs the ability to know what media are represented in the theater, where they are located, and their movement around the theater. This information is helpful in planning and conducting media logistical support and transportation, and in preparing subordinate commands for media encounters. It is also helpful to commanders who might want to provide newsworthy events to the media.

4-45. Registration also identifies which news media have asked for military assistance and access, and have agreed to the command's media ground rules.

4-46. **Registration Requirements.** The registration process is conducted in five basic steps:

- Verify the identity of the media representative (including checking for valid passport/visa, professional media organization membership card, media ID card, other military press credentials, etc.).
- Have them sign an agreement to abide by the established media ground rules for the operation in exchange for granting support, access to units, information and other privileges. If required, revoke credentials for those who violate the ground rules. (Enforcement of this requirement is essential.)
- Have NMR agree to and sign a liability waiver that frees the military of responsibility if the NMR is killed or injured as a result of covering the operation. (An example of a waiver of liability is at Annex I).
- Give NMRs proof of registration (memorandum, press badge or other identification).
- Maintain a roster of registered NMRs and monitor their movements during the time they are receiving military support.

4-47. NMRs who refuse to agree to the military ground rules and who are not registered will receive only the support and information assistance as provided to the general public.

4-48. NMRs should be informed that registration and acceptance of media ground rules will entitle them to better access to units and subject matter experts, and provision of military ground and air transportation when possible.

MEDIA GROUND RULES

4-49. Media ground rules will assist in protecting the security and the safety of the troops involved while allowing you the greatest permissible freedom and access in covering the story. All interviews with news media representatives will be on the record.

4-50. Security at the source will be the policy. (An example of media ground rules is in Appendix X.)

4-51. The following categories of information are releasable:

- Arrival of major U.S. units when officially announced by a U.S. spokesperson. Mode of travel (sea or air) and date of departure from home station

- Approximate friendly force strength figures, after review by host nation government
- Approximate enemy casualty and POW figures for each action operation
- Non-sensitive, unclassified information regarding U.S. air, ground and sea operations (past and present).
- Friendly force size in an action or operation will be announced using general terms such as multi-battalion or naval task force
- Specific force/unit identification/designation may be released when it has become public knowledge and no longer warrants security protection
- Identification and location of military targets and objectives previously under attack
- Generic origin of air operations such as land or carrier based.
- Date/time/location of previous conventional military missions and actions as well as mission results
- Types of ordnance expended will be released in general terms rather than specific amounts
- Weather and climate conditions
- Allied participation by type of operation (ships, aircraft, ground units, etc)

4-52. Information Not Releasable

- Information about future military plans, activities or operations
- Vulnerabilities or weaknesses on command, control, personnel or the operation
- Friendly unit and command strengths, on-hand equipment or supplies; the presence, activities and methods of operation of specifically designated units or equipment
- Information on friendly force security and deception measures and countermeasures, and intelligence collection activities
- Specific information on friendly force current operations and movements, deployments and dispositions
- Information on in-progress operations against hostile targets
- Information on nuclear, biological or chemical weapons, equipment or training

MEDIA POOLS

4-53. Journalists, as a group, are strongly opposed to media pools in any form. The media pool is seen as a restriction placed on the media representatives and their ability to provide coverage of the news. They are grudgingly tolerated, and should be only used as a last resort when space onboard military transportation is limited, access to an area must be controlled, and after all other possibilities have been explored and eliminated. Even under conditions of open coverage, pools may be appropriate for specific events. Both the Army and the news media are in agreement, however, that limited access is better than no access at all.

4-54. When a pool system is required, the military PAO will identify the maximum size of the pool that can be supported. The news media

representatives on the scene will select media pool members. A roster of media personnel registered with the Army PAO will be used to identify the media representatives eligible to participate. The pool should consist of, but not be limited to, a minimum of one video crew (camera operator, sound technician and reporter), one still photographer (wire service, newspaper, or magazine), one radio reporter, and one newspaper or wire service reporter. Special consideration must be given to international reporters as well. While this is a fair and representative pool structure, it is the media themselves who must determine the make-up of the pool. Some news events and situations may lend themselves more to print, or conversely television reporting, and the media representatives may choose to select an unbalanced pool.

4-55. All pool members must be willing and able to meet deadlines and supply information products (video, audio, still media, and text) in a timely manner to all media representatives who are entitled to material generated by the pool. The military media center will also have access to this information and will make it available to all other requesting news media organizations.

4-56. Consistent with its capabilities, the military will supply PAOs with facilities to enable timely, secure, compatible transmission of pool material and will make these facilities available whenever possible for filing independent coverage. In cases when government facilities are unavailable, journalists will, as always, file by any other means available. The military will not ban communications systems operated by news organizations, but electromagnetic operational security in battlefield situations may require restrictions on the use of such systems.

4-57. Once a media pool has been selected, the media pool will select a team leader. It is the responsibility of this team leader to ensure that members of the media pool meet their obligation to share information. The Army PAO will not involve himself in settling internal disputes of the media pool.

4-58. Finally, the pool is an option of last resort. It should be disbanded as soon as free and open access to the operational area can be allowed, normally within the first 24 hours of an operation.

THE DOD NATIONAL MEDIA POOL

4-59. The DoD National Media Pool was established to prevent recurrence of problems encountered with media coverage during Operation Urgent Fury in Grenada in 1983. During the first 24 hours of Urgent Fury, more than 600 reporters attempted to gain access to the operation. The large numbers overwhelmed the limited Public Affairs elements available to assist them.

4-60. In 1985, the Secretary of Defense established the DoD National Media Pool, a civilian news element of approximately 16 media representatives from various national news organizations, with the mission of covering an operation from its initial stages until open coverage could be allowed.

4-61. The pool members remain on call in Washington, D.C., and are available for immediate worldwide deployment. Their products are shared by the open news media until the pool is disbanded and access is granted to the entire news community.

4-62. Supported commanders are responsible for providing operational support to the DoD National Media Pool. At a minimum, the pool members will require:

- Daily, comprehensive and unclassified operational news briefings.
- Access to ongoing combat operations. The media are aware of the personal risks involved in covering combat operations. They will not be denied access to them based on risk to their personal safety.
- Reasonable access to key personnel. All information gathered from these personnel is unclassified and on the record.
- An escort -- usually a lieutenant colonel or colonel -- to coordinate pool support and access requirements.
- Transportation and itinerary planning and coordination that will allow media to gain access to the theater of operations and to disperse pool members throughout the operational area.
- In today's global information environment, when news media can report live from almost anywhere in the world in almost any environment, the technological capabilities of most news organizations decreases the importance of the DoD National Media Pool once word of an operation has spread.
- When the DoD media pool is operational, PAOs will attempt to provide the same information support concerning theater operations to all other media in the operational area.
- However, their primary responsibility is to the DoD Media Pool. After the DoD media pool is dissolved, all media in theater will be dealt with in an equitable manner with respect to information and support provided.
- As soon as open access to the operational area can be allowed (normally within the first 24 hours of an operation), the DoD National Media should be disbanded.

NEWS BRIEFINGS

4-63. There are several reasons for holding news briefings, in addition to the daily operational news briefing required at the unified command level.

- **Credibility:** The physical presence of a briefer and his willingness to meet the issue head on leads to a much more credible presentation
- **Uniformity:** All media get the same information at the same time.
- **Expression of concern:** A briefer represents the face of the command, which shows more concern than an impersonal news release, especially in situations where there is loss of life or extensive damage.
- **Complexity of material:** Where material is technical or complicated, the news briefing makes the subject matter more easily understandable. The question and answer session that accompanies a news briefing saves time in call-backs by news reporters needing clarification.

4-64. News briefings should be done daily during an operation and when important events dictate. They should:

- Get out a specific message
- Explain complex or technical matters
- Reach a large number of media interested in the same subject matter area.

4-65. PA specialists should think about media deadlines and set the time to help the media meet those deadlines. Be sure to invite all media within the area in a timely manner.

4-66. A knowledgeable and articulate spokesperson should be chosen to present the material. This should be the subject matter expert (SME), but may be the PAO or the commander. At the very minimum, a person of prominence within the command should be selected.

4-67. Other SMEs may be in attendance at the briefing to field technical questions. The SME interviews should be at the request of an individual media representative and the time should be set to facilitate the media to meet those deadlines.

4-68. Consideration should be given to the appearance of the presentation, the message, space, lighting, electrical needs, suitable setting, chairs, tables and press packets. All handouts should be reviewed.

4-69. Appendix H provides briefing and press conference formats.

Chapter 5

Information Strategies

The defining trend of the 1990s, from corporate boardrooms to private living rooms, is connecting everyone and everything to everyone and everything else. The American public is faced with many choices: interactive television, cellular phones, modems, faxes, personal digital assistants, an assortment of daily newspapers, online computer information services and other easily accessible information services -- if it can be connected, it seems to be in demand. The computer has invaded the American home. In this decade it has become routine that news and information can now be tailored to fit the individual needs of the consumer using on-line services, distributed electronically and received instantaneously at his or her computer. With the sophistication, power and miniaturization of these technologies improving each year, and the cost dropping at an equally rapid pace, the public will expect access to these devices and services and the information they carry. These emerging technologies have contributed to the refocusing of the Public Affairs mission. It has resulted in shifting the information provision function from an emphasis on producing specific products (such as post and field newspapers and radio/television news programs) to focusing on the processing of our themes and messages and their intended effects -- the function of information communication, rather than the form. This chapter explains the objectives of information strategies, identifies and explains the elements of information strategies, and describes the relative advantages and disadvantages of present day and emerging information communication channels available to PA organizations. Most importantly, it explains how best to use these information channels to satisfy the information needs of the various target audiences as we enter the information age.

INFORMATION STRATEGIES

5-1. Information Strategies is the sum of all actions and activities, which contribute to informing the American public and the Army. The responsibility for this activity is assigned to an element within each PA section, which focuses entirely on accomplishing the information strategy mission. This section is usually called the Public Affairs Information

Services Section. At all echelons, it employs numerous techniques to provide news and information to internal and external audiences. The Army provides an expedited flow of complete, accurate and timely information, which not only communicates the Army perspective, but also attempts to educate audiences and engender support for the force.

5-2. Using a combination of contracted services, organic military assets, and government and commercial communications networks, Public Affairs organizations provide information to news media representatives, deployed soldiers, home station audiences and the American public. The Information Services Section within a Public Affairs organization coordinates information efforts and develops informational products (such as digital text, graphics, and photos, printed publications, audio/video news releases and graphic imagery) into consolidated campaigns designed specifically to present the Army's perspective. This means that Army Public Affairs communicates information to create an informed American public and Army force, assist them in gaining a clear understanding of the strategic, operational and tactical situation.

5-3. To accomplish this, the Information Services Section must develop information objectives or goals during the planning process prior to an operation. These information goals are similar to the PA standards of service and support, which appear in Appendix Q, in that they establish a basis for determining successful information communication operations.

5-4. These information objectives should include:

- Ensuring an understanding of the role of America's Armed Forces in American society.
- Ensuring an accurate perception of the particular military situation or mission.
- Ensuring an understanding of individual and unit roles in mission accomplishment.
- Establishing confidence in America's Army to accomplish the assigned mission in accordance with our national values.
- Establishing confidence in and support for American soldiers.

5-5. By establishing a comprehensive information strategy program, Public Affairs can assist in mission accomplishment by increasing audience understanding of the situation and establish confidence in and support for the force. This contributes to unit cohesion and provides commanders with increased range of action, free of distractions and limitations.

5-6. This is best accomplished by three basic types of information campaigns:

- **MISSION.** Both external and internal publics need to know what the mission is, what they're being asked to do and why. They need to know not only the organization's mission, but also how it fits into the big picture -- the political/strategic-level situation, and why it is important.
- **ROLE.** All military members and civilian employees need to have an understanding of their job and how it relates to mission accomplishment. The general public needs to have an accurate understanding of the military's role and its ability to accomplish

the mission. This understanding results in confidence in the force and demonstrates American unity and resolve.

- **MORALE.** Military members need to have access to news and information about current events and the activities available to them while deployed. They also need to have access to information from civilian commercial news sources. This is important because, in addition to being more credible, it allows the deployed force to see how the operation and their participation in it are being portrayed for the American public. In order to better understand the mission, their role in it, and give it his or her full effort, they have to know what effect the operation is likely to have at the local, regional, national and international levels. The opportunity to involve themselves in educational and other activities is necessary to quality of life and morale. A well-informed service member is more effective.

5-7. The general public is interested in soldiers, their lifestyle, how they are being treated and their ability to accomplish a given mission. Information about these topics provide reassurance, confirming that soldiers maintain professional and ethical values and are being cared for adequately.

Historical Perspective

During Operation Desert Shield/Storm, many commanders developed innovative methods of sharing Command Information products produced in theater and in the rear. The products greatly enhanced morale at both ends. Some commanders and PAOs used the products as issue management tools to dispel rumors in theater and at home station. The products included field newspapers, newsletters, videotapes, audiotapes, etc. They also let soldiers returning from the area meet with family support groups to answer any questions.

(After Action Report 1991)

RESPONSIBILITIES

5-8. Commanders at each echelon are responsible for Public Affairs operations and support. Public Affairs officers and noncommissioned officers at various levels assist commanders in the discharge of these responsibilities. Public Affairs staffs are responsible for accomplishing the Public Affairs information communication mission. This responsibility includes Public Affairs operations in all subordinate, assigned or attached commands.

5-9. PA is only one of many information channels available to a commander. PA information provision cannot substitute for a commander's personal involvement in his "Command Information" program.

5-10. All public affairs practitioners have access to all information that is not classified or violates Operational Security or the Essential Elements of Friendly Information (EEFI) for use in preparing information products. Commanders must ensure the EEFI is up-to-date based on current situations and operational guidance. Public Affairs personnel at all levels

must produce and release accurate information packages based on DoD directives and Army policies.

5-11. **Strategic Level Commands** are responsible for providing public affairs guidance to subordinate units. They develop central themes and messages and provide umbrella guidance to subordinate PA staffs. They must also provide subordinate commands with information useful in preparing information products for internal and external release. They are additionally responsible for marketing public affairs information products to subordinate commands, home stations, the Army as a whole, as well as the general public. Strategic level Public Affairs staffs are the primary coordination point for the Armed Forces Radio and Television Service and the geographical manager for radio and television services including personnel, down links, facilities and equipment.

5-12. **Operational Level Commands** are responsible for communicating public affairs guidance to subordinate units. They expand on information campaign themes and messages, and provide additional information products to subordinate command PA staffs. Additionally, they provide subordinate commands with information useful in preparing information products for internal and external release. They are responsible for gathering and producing public affairs information products for release. In the event the Operational Command is the senior command in an area or theater, it assumes the responsibilities of the strategic level command.

5-13. **Tactical Level Commands** are responsible for gathering information products for release through their next higher headquarters to home stations, the Army as a whole, as well as the general public. These commands are also responsible for coordinating the dissemination of information and information products received from senior commands down to subordinate commands. In the event the tactical command is the senior Army command in an area or theater, it assumes the responsibilities of the operational-level command and will be augmented to accomplish these additional functions.

INFORMATION STRATEGY PROCESS

5-14. The Information Services Section uses all available means to gather complete, factual, unbiased information for use in information campaign development. The information is developed, converted into the most appropriate product form based on the information needs/target audience assessment and information communication channel availability, and then transmitted to the intended audiences. This is called the Information Provision Process.

5-15. Although the information strategy process follows a deliberate cycle, it is a continual process. Information campaigns are also conducted simultaneously, with personnel examining external and internal information needs, carrying messages from concept through execution and program evaluation, to accomplish specific PA objectives. The cycle has four phases -- acquire, process, protect and distribute. (See Figure 5-1.) Evaluation is a key component in the cycle. It must be conducted throughout the four phases. This ensures the campaigns are meeting their objectives, and are altered if they do not.

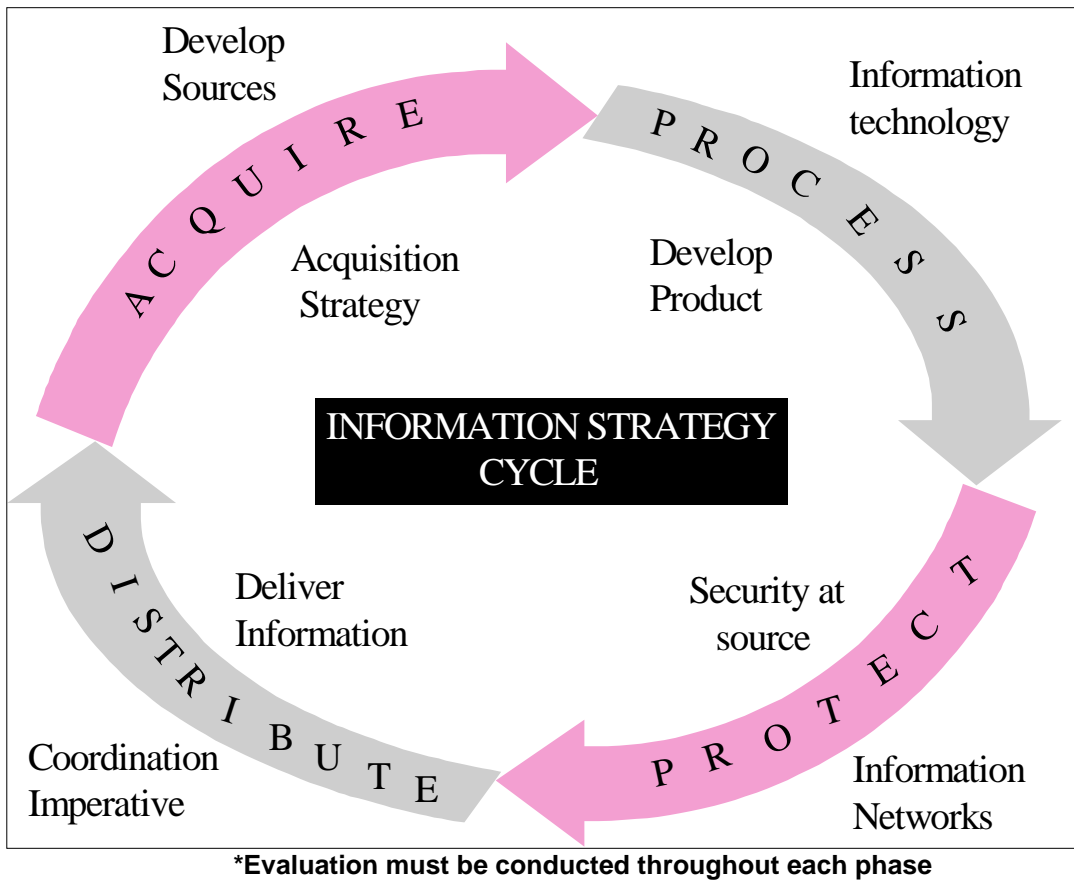


Figure 5-1

ACQUIRE

5-16. During this phase, a ISS identifies and assesses several factors: the situation, the environmental factors, the mission, and the target audiences. They determine the information needs of the various target audiences. They then begin to gather information based on the information requirements of these audiences.

- **Information Needs Assessment and Audience Analysis.** Identification of the target audiences and target audience populations and densities must be developed during the planning stages of operations with target audience assessments. Upon assessment of target audiences and consideration of which type of information product will best serve each audience, commanders must ensure adequate public affairs personnel, equipment (to include communications), resources and funds are available and included in OPLANS/OPORDS to achieve mission success. An assessment of soldier information needs is crucial to the information package development and the selection of appropriate products.
- **Information Gathering.** Information gathering is the first step in producing packages for release to internal and external audiences. Public affairs personnel gather information through

operational, administrative, logistical, battle, staff, command and support channels. They also acquire information through the media, research, leaders and the culture at large. Information may be obtained via electronic and telecommunication systems in addition to written documents and oral communications. While information often comes from superior and subordinate commands, it may also be obtained laterally.

- Sources of information must be valid and diverse enough to provide a broad overview. Public Affairs staffs must ensure the source does not speculate, nor speak out of his area of expertise. However, soldiers' experiences and personal opinions may lend credibility and provide a "grass-roots" view.

PROCESS

5-17. During this phase, the ISS begins to develop products, prepare them for release and determine methods for distribution.

- **Product Development.** Development of information products is performed to some degree by PA personnel at all Public Affairs levels and is an on-going process. The term "product," as used in this process, means the message for intended communication, regardless of the format or communication channel proposed. Initial production development may be command directed or initiated by the Public Affairs staff or provided by other Army agencies. The command's resources and the target audience's requirements will determine the product type.
- **Prepare products.** Information packages should be prepared in accordance with Public Affairs Guidance, Soldiers' Manuals, Field Manuals, SOPs and Army Regulations. Ultimately, the Public Affairs staff is responsible for content.
- **Media Forms/Methods.** Soldiers use a variety of technologies to gather information and produce information products. During the gathering process, PA soldiers conduct interviews, attend briefings, withdraw data from government and commercial computer databases, bulletin boards, and e-mail systems. They acquire text, graphics, photography and motion video from government and commercial Internet systems. The nature, distribution, usability and flexibility of public affairs systems are crucial in the processing of information.
- Professional quality systems should be used whenever possible. For printed products, preferred systems include computers, desktop publishing, word processing, laser printing, etc. Reproduction may be Army-contracted, Army-funded or reproduced using the command's assets. Video and audio products intended for release to news media should attempt to be broadcast-industry standard.
- Electronic newsgathering and editing systems should be used when available. Visual products should be generated by modern methods including digital imagery and computer graphics.
- **Print.** Articles released to home station for military publications and family support group publications; for marketing to civilian publications; field publications, e.g. newsletters, with and without photography.

- **Video.** Raw electronic news gathering video and printed news scripts for release to military and civilian outlets.
- **Audio.** Radio interviews; features; internal command information scripts; radio news; news reports for release to military and civilian outlets.
- **Visual.** Digital imagery; photographs; slides, view graphs; graphics for release to military and civilian print and broadcast media.
- **Digital.** Each of the categories described above may be developed and distributed electronically, either through commercial information services directly on the Internet, or by using tactical Army communications systems (SINCGARS and ATCCS). Modern technology in use on the battlefield has made digital transmission the preferred method for all types of products.

PROTECT

5-18. **Security at the source.** No information strategy is complete without a clear cut understanding of how to protect the information. Both sides can benefit from information and use information simultaneously against each other. Pieces of the right information can have a dramatic impact on the outcome of an operation. Public Affairs professionals will continue to protect vital information by practicing security at the source and following established operational security guidelines.

5-19. In addition to protecting the raw and completed information products, public affairs personnel must also take the necessary steps to protect information networks.

DISTRIBUTE

5-20. **Dissemination.** Public Affairs information packages should be released in the format most easily used by the recipient. While this is not always possible, a product stands less chance of being used if it is incompatible with the recipients' equipment. For example, a video product released on Hi-8 to a TV station that works exclusively with Beta SP has less a chance of being aired than a video story in a compatible format.

5-21. Public Affairs information packages must be expedited to the users by the most technologically advanced reliable method. Great consideration must be given to the speed and reliability of the mode of dissemination. This must be included in target audience assessments and conducted during planning stages of operations. Articles and photos may be sent from deployed locations to home stations via computer systems and telephone lines. Yet based on the quality of the telecommunications system, it may be more reliable to use the mail or a courier. As technology improves PA capabilities, Public Affairs will incorporate those improvements into the information gathering and dissemination system to increase its potential to reach an ever-growing, information-hungry public. For example, the emergence of smaller, more powerful satellite link ups can provide PA elements the ability to reach targeted audiences sooner and from more locations.

5-22. Internal information packages must be available to soldiers at all levels of command. Public Affairs must develop and coordinate a

distribution scheme with the commander, the general staff, and with signal as the proponent for physical distribution of certain commercial news and information products. An efficient distribution system will also ensure prompt delivery of public affairs products. The public affairs staff must conduct periodic quality control checks and update the distribution scheme as necessary, based on changing population densities or information products. Electronic means are the preferred mode of distribution, however additional methods include, but are not limited to contract delivery, AG distribution and the military postal system.

5-23. Products for distribution to deployed soldiers. Publications produced by other military agencies intended for deployed soldiers must be given the same distribution considerations as commercial information packages. For example Stars & Stripes, Soldiers Magazine, Army Trainer and home station post newspapers contracted for delivery to deployed soldiers must be given the same distribution considerations as other publications. However, a separate distribution scheme may be required.

INFORMATION PROGRAM EVALUATION

5-24. The final step in the Information Provision function is the evaluation of our communication efforts. Evaluating communications programs is research, which boils down to a series of questions:

- Did we achieve our objectives?
- Were our policies and programs effectively communicated?
- Was the operation affected positively by our efforts?
- Did the American public support our soldiers? Was unit cohesion enhanced?
- What audiences received our messages? What was the impact of our communication programs on these audiences?
- Research is the foundation of the Information Program Evaluation. Corrections and changes in courses of action should be based on solid factual information. Methods for conducting Information Program research are discussed in greater detail in Appendix P.

NON-HIERARCHICAL AND INTERNET

INFRASTRUCTURE AS A RESOURCE

5-25. Modern technology has provided us with an advanced form of communications structure called non-hierarchical structure. The advantage of non-hierarchical communication structuring is that every "node" in a communications web shares information with every other "node". Each node on a network can identify itself and "find" others in the network in order to communicate specific information. Public Affairs elements act as information nodes, gathering, developing and sharing information vertically and horizontally on the battlefield.

5-26. While this technology was originally intended for command and control, it is essential for other functions on the battlefield as well. Well-coordinated public affairs operations will leverage this capability to move information -- sending messages around the battlefield, to and from home station, and up and down the chain of command.

5-27. The end state of this technology effort is that both organizations and individual soldiers on the battlefield will possess this capability.

TELECOMMUNICATION SYSTEMS

5-28. Information technology provides the means to collect, process, display, develop and disseminate information in an unparalleled manner. This technology has begun to revolutionize our approach to information provision.

5-29. The PA specialist now has the ability to access desired information on a certain issue and tailor and develop this information into a message for dissemination -- all from a personal laptop computer.

5-30. This "from anywhere to anywhere" capability allows the PA specialist at all echelons to accomplish his mission of presenting the Army's perspective -- framing issues and informing targeted audiences.

5-31. There are two telecommunication systems available to Army PA specialists: DoD's internal secure communication network, known as the Defense Data Network (DDN) and the worldwide commercial information network -- Internet. PA specialists must be familiar with both.

DEFENSE DATA NETWORK

5-32. Defense link is an entry point to Internet sites operated by the Office of the Secretary of Defense, the armed services and related defense agencies. It provides a means to search and download Department of Defense directives, obtain transcripts of important speeches and connect to other sites dealing with specific military operations.

5-33. The Department of Defense organizations are extensively represented on the Defense Data Network. Each of the military services has a centralized directory of its Internet sites. Army Link, as its name suggests is a catalog or hotlist of more than 280 Army home pages. The sites are indexed alphabetically and by subject area.

INTERNET

5-34. The Internet is a network of networks. Originally, the Internet was developed by DoD with the goal of building a automation system linking government agencies together which would continue to function in case part of the network ceased to exist. From this inception, the Internet grew, as other agencies and activities noticed the benefit of linked telecommunications. The system now includes organizations from all segments of society: government, defense, business, education, health services, etc. There are more than 30,000 networks participating on the Internet and more than 150 million individual users. And more are connecting everyday.

5-35. Army Public Affairs personnel have access to the Internet through their local Directorate of Information Management (DOIM).

5-36. On the Internet, there are six main activities: "Hypertext" documents with multimedia links on the World Wide Web can be viewed, files can be downloaded with a file transfer program or "FTP," data can be located, communication via e-mail, reading and posting messages to

news groups and bulletin boards, and logging in to remote computers using Telnet.

5-37. You can do most of the same things in the Internet that you can do on any of the commercial information services, but you do them in the context of a much larger network that isn't centrally organized or controlled.

5-38. **World Wide Web.** The World Wide Web, also known as WWW, W3, or simply the Web, is one of the most popular activities on the Internet. The Web allows you to view documents that feature graphics, "hypertext" (text which contains highlighted keywords which are linked to other documents or information sources available on Web) and multimedia links. The hypertext and multimedia links are tied to other documents or information forms that might be on the same computer, one across the country, or a machine on the other side of the world.

5-39. The WWW contains thousands of main menus, called "home pages" which identify the various sub-categories at each web site. Web users can search using key words or locations through the lists of home pages for specific web sites.

5-40. **Gophers.** A gopher is a menu driven system that offers text only. Users of the web can access gopher sites and retrieve information. It is a predecessor of the Web.

5-41. **News groups.** They are discussion groups built around a particular topic. Some are managed, others are not. News Groups take two forms: Mailing List: A list of E-mail addresses to which messages are sent. You can subscribe to a mailing lists typically by sending an email to the contact address with the following in the body of the message: the word subscribe, the name of the list, and your email address. Discussion groups: A particular section within the USENET system typically, though not always, dedicated to a particular subject of interest. Also known as a newsgroup. USENET is a collection of the thousands of bulletin boards residing on the Internet. Each bulletin board contains discussion groups, or newsgroups, dedicated to a myriad of topics. Messages are posted and responded to by readers either as public or private E-mails.

5-42. **E-mail.** E-mail is a means of interpersonal communication that falls somewhere between the immediacy of a phone conversation and the more thoughtful but slower exchange of ideas previously done by writing letters and memos. The specifics of using it vary greatly according to the mail software being used.

5-43. **Commercial On-line Information Services.** Users cannot directly dial up to the Internet using a modem, but must gain access through an internet service provider. Many offices, universities and large businesses provide access for their employees. For access at home, a user can either subscribe to one of the commercial on-line services, which provide Internet access in addition to their other features or to one of the dedicated Internet server companies located in most cities.

Chapter 6

Training

"You must remember that whether you wear one stripe or six, one bar or silver eagles you automatically become an "Army spokesman" when you are approached by the press. Within 24 hours the words of that Army spokesman can be flashed world wide, particularly if they can be construed as criticism..... Everything you say should have the ultimate aim of furthering that effort. Your approach to the questions of the press should emphasize the positive aspects of your activities and avoid gratuitous criticism. Emphasize the feeling of achievement, the hopes for the future, instances of outstanding individual or unit performance and optimism in general. But don't destroy your personal credibility by gilding the lily. As songwriter Johnny Mercer put it, "You've got to accentuate the positive and eliminate the negative."

- U.S. Continental Army Command memo to advisers in Vietnam.
The Military and the Media,
William M. Hammond, 1988

TRAINING OBJECTIVES

6-1. The cost of learning in combat is too high. Therefore, commanders and staff section chiefs must conduct cost- and time-effective staff training during peacetime. In order to conduct effective training, every consideration regarding PA activities should be evaluated.

6-2. Evaluation should include, but is not limited to, analysis, planning and execution of the operation. The PA staff, in conjunction with other members of the organization, must train in the initial planning of the operation. In order to train effectively, the following considerations should be evaluated:

6-3. **Analysis.** Specified and implied tasks are identified at home station for deployment, mission and redeployment requirements.

- Feasibility of all tasks are determined and assessed.
- Consider any PA guidance issued by higher headquarters and determine specialized training requirements.
- Consider all phases of host nation operations and the effect on your operation and organization.

- Determine the availability of required assets and equipment for all phases of the operation.
- Consider the availability and use of internal and external assets -- joint, RC and combined -- to augment known shortfalls.
- Determine any transportation requirements for your organization or attached personnel.

6-4. **Planning.** Planning includes PA annexes, command directives, DOD guidance, regulations and directives stipulated by the commander's intent and mission requirements.

- PA annexes should contain a brief, general description of the situation and intent to conduct operations.
- Planning should also consider enemy forces and host nation personnel and their relationship to the operation.
- PA planning should be considered for all attachments and detachments currently known or listed under the task organization. This includes planning for assets and requirements from home station to redeployment.
- Training should be conducted emphasizing procedures for handling the transmission of all information. Theater-unique requirements may call for special training scenarios.
- All logistical and administrative requirements need to be addressed in the planning and training process.

6-5. **Execution.** The staff, soldiers and media understand the commander's intent in terms of his command position and operational mission. The operational area ground rules are included in the PAG and are widely disseminated throughout the organizations.

- Encourage local media to accompany deployed units.
- Adequate vehicles have been identified and assigned to transport PA personnel and media throughout operational areas. This includes vehicles, aircraft and available transportation assets for transporting all media personnel and products. Consideration of transportation should include all support activities in the forward area of operation.
- Public Affairs personnel in the media center will prepare releases of specific events to disseminate in the area of operations. News media inquiries are anticipated, received, researched and answered as quickly as possible.
- Local security review policies are clear and will not delay the transmission of information.
- Executions of the theater policy for registration policies and local media pool operations have been completed. Non credentialed media are identified and escorted to the rear for registration. Once registered, media personnel will be allowed to cover stories and interact with organizations in the area of operations.

6-6. The staff section must be able to:

- Cope with the unexpected. For example, media arriving at the unit level without PA escort or media not registered with the joint media operations center.

-
- Separate fact from fiction. For example, media having misinformation which they believe as fact and trying to confirm it.
 - Coordinate well amid confusion. For example, be able to access the PA staff at the MOC.
 - Think clearly while under great stress. For example, have a unit PA representative (UPAR) who will handle escorted/nonescorted media for the unit.
 - PA elements develop training plans from assessments of their performance proficiency on their METL.
 - Detailed training plans for Public Affairs Detachments are contained in ARTEP 45-500-10-MTP, for the Mobile Public Affairs Detachment in ARTEP 45-413-30-MTP and for the PAOC, ARTEP 45-326-50-MTP.
 - The training plans in those documents can be readily adapted to train other types of PA elements, such as a division PA staff.

PRINCIPLES

6-7. All PA training must be based on the training principles in the FM 25-series:

- **Train as combined arms and services team.** Do not train in a vacuum. Train with the unit you support.
- **Train as you fight.** Conduct realistic training. PA leaders must move soldiers out of the office and into the field to conduct training, including joint and combined operations. Set up a media operations center and conduct operations for a day.
- **Use appropriate doctrine.** All PA leaders should be familiar with FM 3-0 (100-5), *Operations*; FM 3-13 (100-6), *Information Operations*; and the PA manual, FM 3-61 (46-1), *PA Operations*.
- **Use performance-oriented training.** Performing tasks under field conditions with appropriate evaluation enables your soldiers to perform better under actual conditions.
- **Train to sustain proficiency.** PA units must take advantage of all training opportunities to sustain proficiency, participating in all CPXs, FTXs and deployments that their supported units are involved in.
- **Train to challenge.** Training for PA tasks must create the kind of pressure PA soldiers will face in actual situations. Ensure it is challenging but realistic.
- **Train using multi-echelon techniques.** The entire PA chain-of-command must participate in training for it to be realistic and effective.
- **Train to maintain.** Soldiers and leaders must keep equipment in a high state of readiness in support of training and for deployment.
- **Make commanders the primary trainers.** The unit commander is the primary training manager for the unit. The commander assigns primary responsibility to officers for collective training and to NCOs for soldier training.

TRAINING OPPORTUNITIES

6-8. Regardless of type, size or configuration, PA elements/units must train with the units they support. PA leaders must evaluate the ability of their units to support their real-world missions successfully and determine areas of weakness.

6-9. PA leaders must determine what training opportunities they can participate in realistically and coordinate for support from higher headquarters. If support is not provided, then unit leaders must create their own unit training program that simulates the tasks they will be asked to do when deployed.

6-10. For example, PADs should deploy with brigades to NTC or JRTC to practice their unit mission and capabilities and be evaluated accordingly. If the PAD is tasked with garrison duties, these duties must be retasked to allow the unit to train and maintain.

6-11. PA elements and units should take advantage of the excellent training opportunities offered by the JRTC and NTC. Both centers conduct media-on-the-battlefield training for visiting maneuver units. Public affairs elements should accompany the maneuver brigades and establish field media centers to take maximum advantage of these resources. It is imperative that PA elements be able to function effectively in austere environments. They cannot perform to their maximum capability unless they train accordingly. The key is repeated, tough, realistic training.

Historical Perspective

An initial PA team was sent to Somalia to set up a media operations center in December 1992. Mogadishu at the time was a war zone with many fronts. Initially, U.S. forces set up operations at the airport. Under the constant roar of C-5s, the PA team tried to organize a MOC. They had a very difficult time dealing with the lack of power and water. Eventually they were able to set up in a schoolyard. A “JIB-in-a-box” arrived with computer equipment, but it was all 220-volt — power in Somalia is 110-volt.

For the duration of the operation, personnel at the MOC learned to live and work under austere conditions, where food, water, power, and communications were constant problems. They eventually were able to set up a briefing room with benches, an old couch and a bulletin board for posting media opportunities, and conducted media operations under austere conditions.

(After Action Report 1992)

6-12. Home station CPXs and FTXs are fundamental training events that provide PA elements relatively low-cost opportunities to practice the full spectrum of wartime PA tasks on a reduced scale.

6-13. A visit by even a single reporter can be used to exercise a broad range of media support tasks including establishing a field media center; arranging interviews; preparing subject matter experts, individual soldiers and commanders to meet the media; preparing fact sheets; responding to media queries; registering media; arranging escorts and transportation, etc.

PA TRAINING FOR NON-PA AND PA PERSONNEL

6-14. Public affairs training is not limited to training for PA soldiers. PA elements/soldiers also have a responsibility to train non-PA soldiers and family members in military/media relations. Organic PA elements must develop training programs for their supported units. These can take the form of classes as well as pre-deployment briefings for units and family members.

6-15. Training for commanders and subject matter experts. Unit commanders and individual subject matter experts must be prepared to be interviewed. It is a PA responsibility to ensure they are familiar with the ground rules and know to restrict their statements and comments to their area of expertise. Details on how to do this are contained in the Soldier's Manual task, "Prepare a Spokesman to Address the Media," #224-176-4013.

6-16. Training for unit soldiers. Individual soldiers must be advised of the inevitability of media presence during military operations. Classes for units can be part of sergeant's time training and consist of teaching soldiers what they should and should not talk about when meeting the press. All soldiers should be encouraged to represent themselves as soldiers and encouraged to speak about the jobs they perform for the Army.

6-17. Training for family members. PA training for family members consists of educating them on their rights and responsibilities when interacting with the media. Family members often know more about specific operations than should be revealed to the media. They must be advised not to discuss information, which may be used by the enemy against their spouse's unit, such as details about troop movements, destinations, missions etc. They must also be advised that they have the right to refuse to talk to the media. Family member briefings should be a standard element of pre-deployment family support group activities.

6-18. Basic soldier skills. Public affairs soldiers are soldiers first and public affairs practitioners second. It is imperative they are well trained in basic soldiering skills. Public affairs elements and units must make time to train to standards on common soldier tasks that allow them to effectively shoot, move, communicate and survive on the battlefield.

6-19. Readiness. All PA elements and units must have, and exercise, detailed load plans. Soldiers should be aware of the importance of maintaining all equipment and vehicles in a state of readiness for deployment.

6-20. PA NCOs must ensure soldiers participate in preparations for overseas movement (POM) so they are administratively and medically prepared for worldwide deployment. Soldiers should be aware of the importance of wills, shots, powers-of-attorney, personal data and allotments.

6-21. Staff Section and Unit Training. A state of operational readiness to conduct combat or non-combat operations must be attained and maintained. This level of readiness is accomplished by preparing individuals, shifts and staff sections to perform assigned tasks and other duties at the desired standard of proficiency in advance of assigned operations.

6-22. Standards of performance must be set so the section can evaluate its performance. Examples of these standards include:

- Understanding DOD's policy statement -- Commanders will ensure maximum unrestricted disclosures of unclassified information to news media representatives consistent with operational security, guidance from higher headquarters and the privacy of individuals concerned.
- Escorted and unescorted media -- If the media has a PA escort, you may agree to an interview after the escort explains some basic ground rules. If not escorted, ask media personnel to accompany you to the command post, NCOIC or OIC and contact higher headquarters/public affairs officer.
- Conducting an interview -- Military personnel have the right to deny media interviews. If a soldier elects to provide the media with an interview, he should only discuss those things which he has direct responsibility or personal knowledge, and ensure an escort (PA or non-PA) is present. See Appendix N for more details.

THE INTERVIEW PROCESS

6-23. The Interview Process:

- Prepare for the interview. Consider the type of questions the media will ask, and think what your answer will be. When possible, ask for PA assistance (UPAR or PA personnel).
- Relax and be yourself. Imagine that the reporter is someone you know and talk with him in a relaxed manner.
- If cameras are present, ignore them and talk directly to the reporter. Be brief and concise. Remember, a TV news story will use only 10- to 15-second answers.
- If you need time to respond, ask the reporter to restate the question. A simple pause before answering the question is sufficient.
- Use simple language and avoid military jargon (i.e., military abbreviations or acronyms). If you must use military terms, explain what they mean.
- Use appropriate posture and gestures. Relax and be yourself.
- Answer only one question at a time. If asked multiple questions, answer the most important one first, or answer the one you're most comfortable with.
- Always try to end your comments on a positive point. This is your opportunity to tell your unit's story.

6-24. Things not to do:

- Do not allow media to videotape recognizable landmarks nearby, sensitive equipment, interior of tactical operations centers or other sensitive areas. Use OPSEC as guide on this matter.
- Do not answer speculative questions or give opinions concerning real or hypothetical ("what if") situations.
- Do not use the expression, "No comment." A more appropriate comment would be, "We don't comment on future operations." or

"I'm not qualified to respond to your question." or "That information is classified, so I can't discuss it."

- **Never** lie to the media.
- Consider everything you say to the media as "on the record." **Never** make "off the record" comments.
- Don't lose your temper when media representatives ask questions you consider inappropriate or foolish. Such questions are usually rooted in ignorance rather than in malice.
- Do not discuss operational capabilities, exact numbers or troop strengths, numbers/types of casualties, type of weapons systems or future plans. Use general terms like approximate, light, moderate or heavy.
- Don't repeat a negative phrase in response to a media representative's negative question (e.g., Q: Since your unit is poorly trained, can you really deploy? A: We're well trained and ready to go.).
- Staff section and unit training should be integrated into headquarters FTXs and CPXs in order to perform adequately within the unit's operational staff during real-world missions.

TRAINING EXERCISES

6-25. Training exercises will vary from major FTXs to CPXs and Tactical Exercises Without Troops (TEWTs). Each training opportunity provides the staff element realism, the opportunity to experiment and the ability to face situations. These challenging training exercises enable soldiers and units to tell the Army's success stories.

6-26. Training exercises also enable the commander and staff to:

- Emphasize the tactical SOP.
- Execute plans in a dynamic, hostile environment.
- Exercise bold solutions.
- Exercise contingency plans.
- Experience possible defeat without the penalty of combat loss.
- Work toward goal-oriented performance standards by team building while providing PA support.
- Training exercises also allow PA personnel to become operationally, strategically and culturally aware, and puts them in a unique position to interface with the news media personalities which shape the perceptions of our national and international audiences.

TRAINING FOR MEDIA FACILITATION

6-27. Facilitating media in the military environment includes three phases -- planning, preparation and execution.

6-28. **Planning.** The Media Operations Center receives requests for registered media to visit units in their areas of operation. The MOC will contact a unit and coordinate the time and location for the visit, as well as notifying a PA or nonPA escort for a mission. The escort will need to know the unit's location and whether the unit's UPAR (if applicable) will travel with the group or meet them at the unit. The unit will need to

know the number of media visiting, the duration of the visit and the status of the unit for the last 24 hours (i.e., has the unit been in contact with the enemy and has there been any significant actions).

6-29. The escort will plan the route to the unit. The number of media going will determine the number of escorts and vehicles needed for the trip.

6-30. **Preparation.** The JIB or escort will notify the media and tell them the time and location of departure and estimated time of return. This allows the media to plan for their supplies and equipment for the trip. The escort should meet with the media and update them on the unit's status, find out if the media has any specific requests before departing, cover safety points and OPSEC requirements, and ensure they have everything they need. This will also provide the escort with a direction for the types of questions or issues the media may address. The information concerning the unit's situation will allow the escort to develop a list of Q&As for the commander and individuals whom the media will interview.

6-31. The escort should meet with the drivers and review the route to the unit, cover contingency plans and determine an inspection time before movement. The escort should also contact the unit to reconfirm the visit and their location, as well as providing a list of the names and agencies of media visiting them. The escort should meet the media at the vehicles to insure they have what they need for the trip.

6-32. **Execution.** The escort should leave as scheduled and travel as the tactical or non-tactical situation dictates.

6-33. When arriving at the unit, the escort should have the driver park the vehicle as directed by the unit and have media personnel wait at the vehicles (if possible, with military supervision). The escort needs to request that the media not take photographs of the unit's position for operational reasons. Let the media know you are going to get the commander and will return as soon as possible. If the situation is hostile, get the media inside the perimeter and secure them away from equipment and the command post.

6-34. The escort should meet with the UPAR and let him/her know who is in the media group. Ensure that the unit will be able to provide the interviews the media requested.

6-35. The escort should brief the commander and let him know the ground rules, covering possible Q&As. Answer any questions or concerns he may have about the interview. Let him know that you will be present during the interview to assist him. When possible and if mission requirements permit, the commander should be available for the media. Review the unit's OPSEC requirements to ensure you understand what cannot be photographed.

6-36. The escort should determine where the commander wants to meet the media. If the area is not appropriate for conducting interviews (may be based on PA experience or media request), provide an alternative recommendation to the commander.

6-37. The escort should move the media to the interview point and introduce the commander to the group. After the interview, the escort should facilitate the rest of the coverage with the help of the UPAR. Do not allow the media to linger in the area of operations and become

mission detractors. Wrap up the visit, return to your vehicles and depart. Upon returning to the JIB, the escort should be available to back brief the PAO.

6-38. The requirement to maintain proficiency in the full range of public affairs collective and individual capabilities and skills places a high priority on tactical training for both AC and RC PA soldiers. Tactical training participation enhances knowledge of battlefield requirements, increases unit cohesion, and forms the basis of experience needed for operational planning, mobilization, deployment and mission success.

6-39. PA will continue to face expanded missions in the joint arena. Quality PA training provides sufficient numbers of trained PA personnel to conduct joint and combined PA missions. Training must emphasize the joint perspective, enhance interoperability, and contribute to each combatant CINC's PA Mission. Exercise participation is critical to the training of PA personnel.

6-40. Trainers must fully incorporate a broad array of PA activities into all types of exercises and war gaming. These activities can be injected into computerized battle simulation as the training exercise driver. They should also be used in BCTP command post exercises, and JRTC, CTC, and NTC rotations. Seminars, area assessments and TEWTs are all forms of training that also provide relevant, realistic training.

Chapter 7

Community Relations

Public opinion about the Army is greatly influenced by the actions of each command. What the command does for its local community or fails to do affects the perceptions and attitudes of the American people, upon whom the Army depends for its support and existence. This applies not only to official acts but also to unofficial acts, which by their commission or omission affects public opinion. This principle also applies to individual members of the Army, their dependents and Army civilian employees in their personal contacts with the civilian community. Conducting community relations is a vital element to successful public affairs operations. Commanders and public affairs officers (PAO) must seize on key opportunities to gain and maintain links to internal and external publics.

EFFECTIVE COMMUNITY RELATIONS

7-1. PA personnel act in concert with veteran's groups, civic leaders and local populations to increase understanding and build support for Army activities. Army support to and participation in public events is based on the fact that the Army belongs to the American people. Common ownership requires that Army resources be used to support events and activities of common interest and benefit.

7-2. Effective community relations requires:

- Command supervision at all levels.
- Appreciation of public opinion and attitudes toward the Army
- Planning definite actions and positive policies.
- Implementing programs in a competent, professional and responsible manner.
- Constant evaluation of continuing programs to measure their effect upon the public and the command.
- Sharing the results of the program.

7-3. Commanders must maintain continual liaison with persons and organizations in the local community to help resolve common problems and develop cooperation and understanding between the installation and

the local community. Community relations develop an effective two-way channel of communication between the Army and the community. PA does this by capitalizing on opportunities for better relations and resolving potential and actual areas of conflict.

7-4. Community relations projects or programs may be supported by use of exhibits, equipment and facilities. Exhibits consist of displays such as mission exhibits models, devices and other information and orientation materials at conventions, conferences, seminars demonstrations, exhibits, fairs or similar events. Also included are exhibits displayed on military installations during open house programs.

COMMUNITY RELATIONS ACTIVITIES

7-5. The goals of community relations is to develop an open, mutually satisfactory, cooperative relationship between the installation and the community. A successful community relations program improves the community's perception of the Army and its appreciation for the installation and the soldiers, family members and civilians who are part of the installation. It is based on openness and honesty. Community relations objectives are community assistance and social improvements for the community in which the military must work and live.

Historical Perspective

Fort Eustis, Va. started a pilot program in 1992 called Operation Self-Enhancement to give high-risk middle school students the opportunity to visit the post and focus on careers, teamwork and self-esteem. The program was so successful that it has become an annual event. Students receive light military training through an array of testable tasks and obstacles presented by members of a cadre team. This training helps students build their self-esteem and self-confidence and affords them the opportunity to interact with positive role models. This also gives the students a better idea of what the Army is about.

7-6. Community Relations activities include:

- **Speakers Bureaus.** Speakers are an effective means of developing understanding of the Army, stimulating patriotic spirit and informing the public about the activities of the installation, its units and its soldiers. Commanders should establish an installation speakers bureau and encourage soldiers of all ranks to participate in the installation program.
- **Community Liaison.** Maintaining liaison through informal community relations councils can establish and maintain open communications with community officials and organizations. Councils can be charged with a variety of responsibilities, such as developing and promoting new ways for members of the command to actively participate in local community activities, capitalizing on opportunities for better relations and resolving potential and actual areas of conflict. Community liaison can also involve recognition of private citizens, local community leaders and citizen groups and organizations for their support of the Army by public service awards. Commands can further community liaison through membership in civic, business and professional organizations when

the goals and objectives of those organizations are beneficial to the Army and their programs and projects are consistent with Army interest.

- **Ceremonial Units.** The band, color guard and other ceremonial units participating in public events are excellent ways to accomplish community relations objectives. These representatives of the Army serve as ambassadors to the civilian community and promote patriotism, interest in the Army, and awareness of the professionalism of our forces.
- **Exhibits.** Exhibits and displays of Army equipment, historical materials, models, devices and other information are other community relations activities that can enhance understanding of the Army and the installation. They provide an excellent opportunity for interaction between our soldiers and members of the local community and can communicate the professionalism, readiness and standards of our forces.
- **Open House.** Open houses may be scheduled to coincide with Armed Forces Day, the Army Birthday, service branch birthdays or anniversaries which mark the history of the installation, a unit or community events or in support of media day. An Open House gives the local community an idea of who we are and what we do. They also have the opportunity to visit us on the installation-- at our job site.
- **Physical Improvements.** Community service physical improvements focus on ensuring that the physical infrastructure is as safe as possible and provides the fullest possible range of support to the population. These activities encompass a wide range of programs that do not compete with the services provided by contractors and businesses in the local civilian community.

7-7. Some examples of physical improvements are:

- Construction projects that enhance the recreational, educational, environmental or cultural facilities of the community, such as building community picnic areas and hiking and biking trails.
- Demolition projects that enhance the safety and appearance of the community, such as the removal of unstable playground equipment.
- Projects that create or enhance a safe, clean environment, such as the removal of debris from a community wildlife area or painting a community recreation center.

TOWN HALL MEETINGS

7-8. Town Hall meetings provide installation commanders with an unfiltered means of communicating ideas to internal and external communities. This tool for conveying important information and ideas about the command cannot be underestimated in its effect and should not be planned haphazardly.

7-9. Commanders, PAOs and staff directorates must work together to produce an effective community relations product.

7-10. Prospective town hall meeting planners must understand, and properly apply, the correct type of town hall meeting. With a focus on the

type of meeting and probable audience, the planner can begin the process of planning and conducting the event.

7-11. As part of the plan, the planner must determine the likely audience for the meeting, including attendees from internal and external audiences. He must also evaluate possible attendance by key publics. The planner should develop a standing operating procedure (SOP) to ensure each mechanism of the process is in place for the scheduled event.

7-12. Finally, post-event analysis is imperative to accurately assess its effectiveness.

7-13. The PAO must develop systems to quickly assess the feedback data and activate a follow-up plan that will maintain confidence from the community that town hall meetings are meaningful events.

TYPES OF TOWN HALL MEETINGS

7-14. Installation commanders can stage various types of town hall meetings. The commander must determine which meeting type, or hybrid, is appropriate for disseminating information and gaining useful feedback from internal and external publics.

7-15. The following meeting program structures have inherent strengths and weakness; knowing the potentials for message delivery will assist the commander in making his decision:

- **Commander - Expert Format:** This meeting (Figure 7-1), is characterized by the commander attending with key staff members facing a live audience. Typically the commander and his staff will give presentations and then field questions from the audience. Usually, attendance is open to the public.
- The primary advantages to this format center on the open nature of the meeting.
- This meeting provides the commander with an opportunity to provide detailed presentations with time being a minimal constraint. He also receives instant feedback from the types of questions from the audience and the passion with which questions are asked.
- Meetings in this format are likely to be seen as the most easily accessed by the internal and external publics.
- Among the disadvantages of the format is the ability to reach large audiences and control the conduct of the meeting.
- Unless the meeting is taped for later airing on the commander's cable access channel, the audience is often narrowly focused.
- Although the possibility exists that large audiences will attend, it is also possible small or narrowly focused audience will limit the general effect the commander seeks.
- An open meeting can also become the forum for unruly or disgruntled audience members to incite others or attempt to draw the commander into an open confrontation.
- This factor can be mitigated through the use of question time-limits and use of a moderator (other than the commander), but cannot be

totally eradicated. (As with any other public event, security must be a consideration in the planning process).

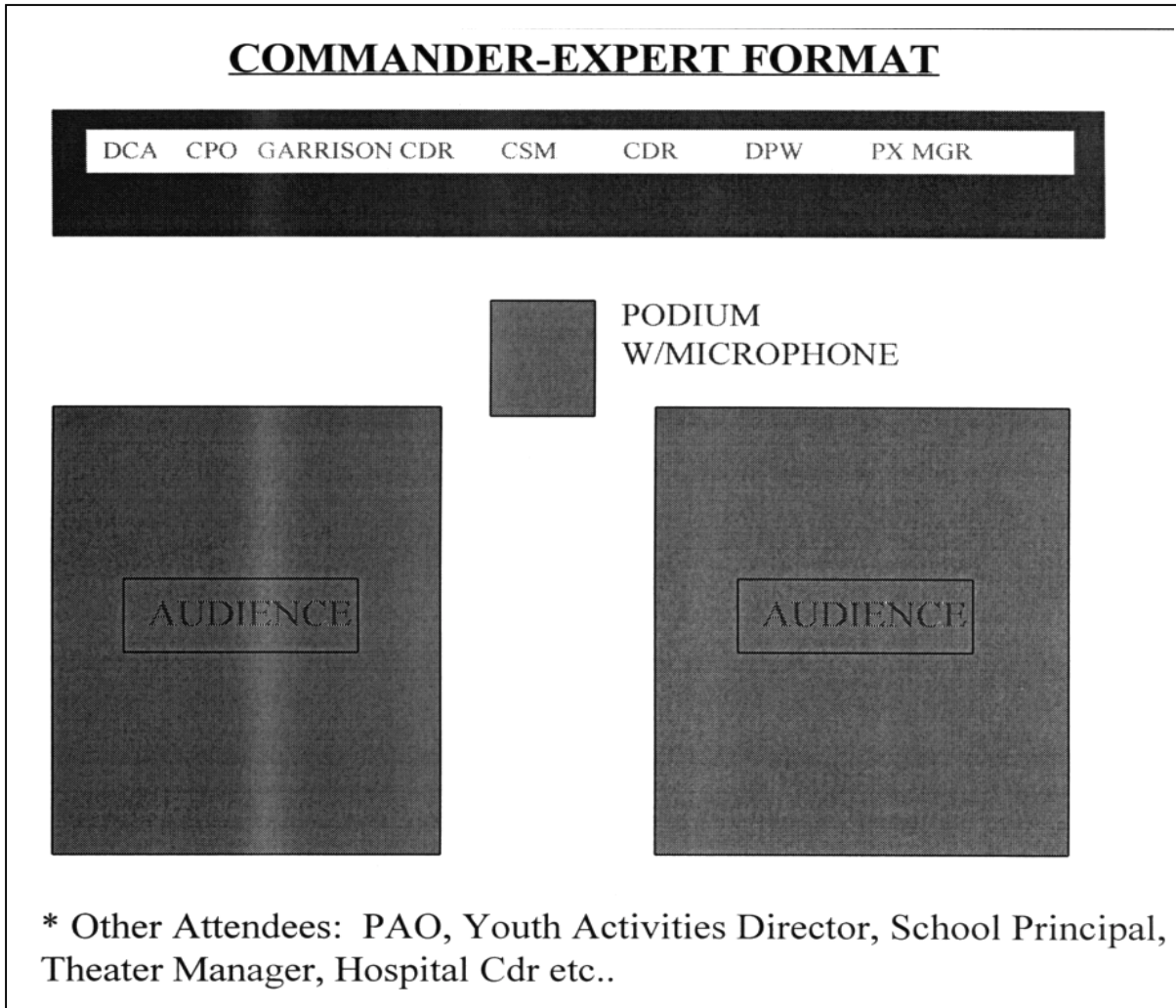


Figure 7-1. Commander Expert Format

7-16. Commander Access TV Channel Format: This meeting format (Figure 7-2) uses the commander's cable access channel to air the event. Normally, the commander, CSM and Garrison Commander (and other staff members as necessary) give a presentation. No live audience is in attendance. The commander provides a set of phone numbers, allowing questions to be called in. The staff operates the phone bank, accepts the questions, directs the questions to the appropriate staff agency, and delivers the answers by 3x5 card to the on-air panel. The panel members read the questions/answers to the viewing audience.

7-17. This format offers advantages focused on control and distribution of the product. The venue and the setting are completely controlled by the commander and his staff. The staff screens questions and, thus, no surprises will occur. Indeed, if questions/answers are given to the commander, he may choose to either not answer or return the card for more information.

7-18. Other advantages include an ability to re-run the meeting as often as desired and provide copies to local cable providers, many of which are interested in using the product for airing.

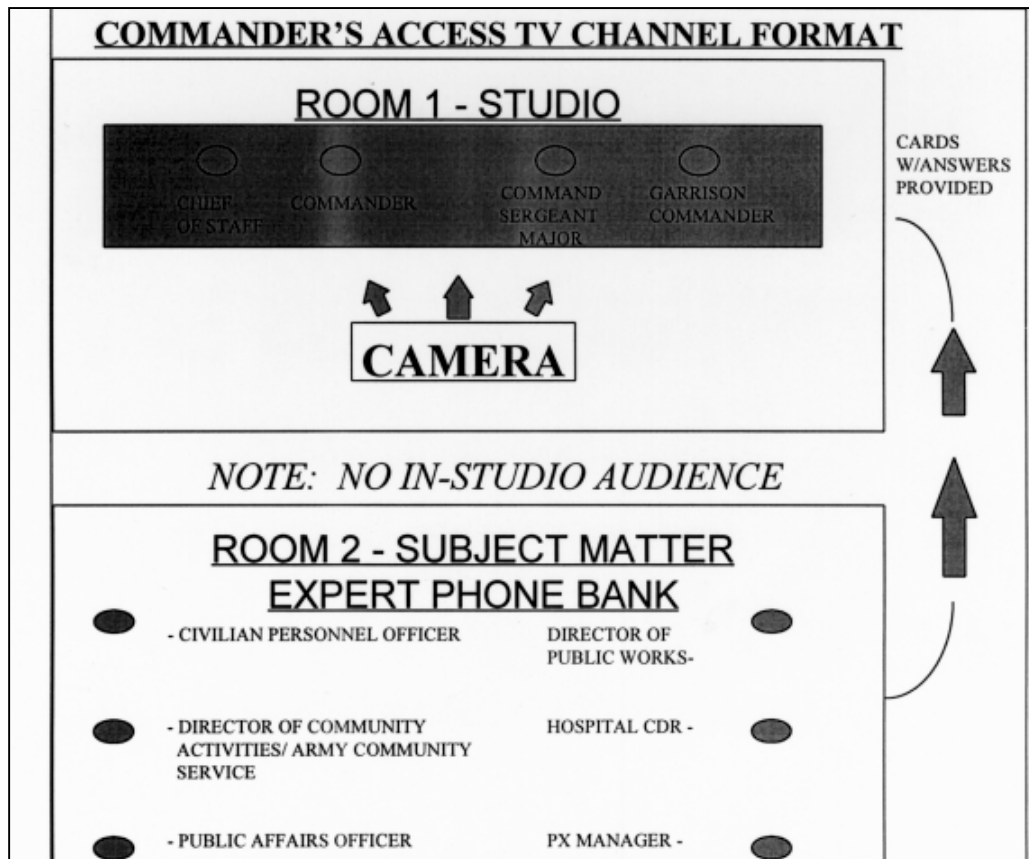


Figure 7-2. Commander Access TV Channel Format

7-19. Disadvantages to this format center on a difficulty in gauging feedback, competing for viewing audiences on television, and providing personal contact with the commander. With no attending audience, collecting feedback data is problematic. Follow-up questionnaires, using statistical probability methods, provide the only means of gaining reliable feedback. The likelihood of viewers to "channel-surf" is high due to the specific nature of questions from callers. Holding the interest of viewers, all of whom have multiple other viewing options available, is difficult. Finally, by appearing on television, in uniform, with a phalanx of staff members, the commander risks appearing to be speaking from "the mount." Audiences may view the commander as speaking down to them and being out-of-touch to their concerns.

7-20. Key members from the internal and external publics form a roundtable discussion (Figure 7-3). The topics are set by published agenda, with some time left for open discussion. The meeting results are published for general distribution. Media are usually invited as participants.

7-21. Roundtable discussions with key publics offer advantages to the commander by providing information to the individuals who represent overlapping and wide constituencies. By setting an agenda, the commander can deliver focused messages with a high likelihood of the messages later reaching targeted audiences. It allows the commander

and potentially key staff officers to deliver presentations and provide follow-up information to those in attendance.

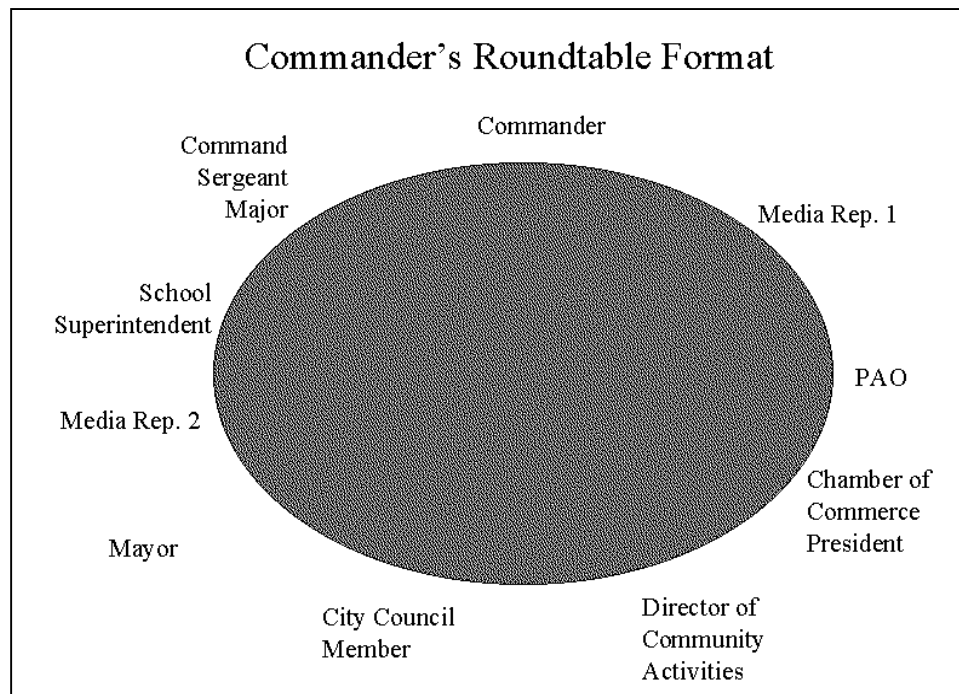


Figure 7-3. Roundtable Format

7-22. The principal disadvantage is the distance between the commander and the publics. The publics will receive information about the meeting second-hand and in a potentially filtered state. Gaining feedback may also prove challenging (but not necessarily impossible). Other disadvantages may be in the limits of the audience makeup; key publics, which are not invited, may resent the slight.

7-23. Commander-in-the-round format. A room is set-up that will allow the commander to be in the middle of all the attendees. Normally, he will stand and walk around in the circle formed by attendees. The meeting is usually open to the public.

7-24. The primary advantage to this format is the close contact the commander shares with his audience. Audience members may feel that barriers are lowered because the commander is close in proximity and no staff members are buffering their access. The commander also can realize feedback very quickly and can gain some appreciation for the resonance of his ideas with the assembled audience.

7-25. Such closeness with the audience can also be a significant disadvantage. Limiting surprises and controlling potentially unruly audiences is extremely difficult in this format. Further, because of the commander's reliance on his personal notes and memory, his ability to provide detailed information and multi-media presentations may be restricted.

7-26. Mitigation against such limits is dependent on the site design. Other disadvantages include problems associated with other "open" formats, including a possibly non-representative makeup of the audience.

7-27. Before deciding on which format is appropriate for the information, the commander must have a plan for what must be achieved.

7-28. Characteristics of an effective plan:

7-29. Answers the “why?” questions. The planner must understand the purpose of the meeting to correctly advise the commander on the format and substance to begin coordination of the plan. As described above, the various formats each have strengths and weaknesses that will assist the planner to shape the meeting.

7-30. Routinely Scheduled. Normally, meetings can be scheduled quarterly or monthly. Use the installation planning cycle to ensure proper coordination and notification of public meetings.

7-31. Site Plan. Checking and securing a site for the town hall meeting is dependent upon the type of meeting selected. Plan for the site early in the process and establish the layout of the site in detail.

7-32. Calendar Check. Before scheduling events, check local and regional calendars for possible conflicts. For example, scheduling a meeting on the same night as the local high school homecoming football game may prove disastrous.

7-33. Presentation Submission Deadline. Coordinate with appropriate staff agencies responsible for preparing presentations. Ensure presentations are properly staffed and approved. As PAO, establish a firm submission cut-off date.

7-34. Focused Presentation. Inform the staff of the commander's intent for the meeting. If the commander wants a particular theme addressed, ensure staff agencies adhere to the parameters of the intent.

7-35. Media Invitation List. Invite local and regional media including print and electronic outlets. Develop relationships with individual reporters and provide background material as necessary. (Local newspapers, radio stations and television stations can often assist in publicizing meetings as well).

7-36. Publicity Plan. Ensure all available avenues are used to publicize meetings. Included in this process are the post newspaper and radio station (where available), normal distribution, staff meetings, E-mail delivery and chain of command communications. Take special care to invite key publics by individual invitation and phone call follow-up.

EVALUATING FEEDBACK

7-37. Assessing the effectiveness of town hall meetings is essential to developing community-related policies and courses of action for the command. PAOs can use standard statistical measurements using survey techniques to gauge the level and intensity of views of the various publics. Other analyses can be derived from follow-up media content analysis, letters to the commander and post newspaper, and reactions at the meetings. None of the methods described here will render a perfect picture. PAOs must exercise good judgment and personal insight when advising the commander of analytical results.

7-38. **Response Follow-up.** Investigating and responding to issues raised at town hall meetings are critical to public perceptions of the level of care the commander applies to community operations. Just as a

maneuver commander sees battle damage assessment (BDA) as crucial to determining the efficacy of fires, commanders and PAOs must determine the true productiveness of community relations programs. Commanders will often feel compelled to promise action, such as investigation or immediate problem resolution, during a meeting. Staff agencies are normally the conduit for actions (only occasionally will the commander personally provide the requisite service).

7-39. PAOs should provide the staff oversight of the response mechanism. PAOs can devise a recurring memorandum that provides the commander (usually through the chief of staff), details about the status of actions. All staff agencies should receive updates routinely.

7-40. Along with the response mechanism, PAOs can use command information and media relations channels to inform the public of problem resolutions. For example, if an issue raised at a town hall meeting indicated that the local recreation center was routinely opening two hours late each day, describe the measures taken to alleviate the problem. The PAO can use the post newspaper or radio station to provide lists of problems and resolutions.

CONCLUSION

7-41. Community relations and activities are vital to instilling and maintaining the confidence of internal and external publics in our great Army. Commanders and PAOs cannot leave the prospect of successful relations to chance. Too much is at stake. Careful selection of the type of town hall meetings to be used must be taken. The event must be planned with the attention to detail required for all military operations. Each part of the plan has unique importance and cannot be overlooked. To ensure the effectiveness of the operation, PAOs are compelled to build a clear mechanism for evaluating outcomes. Finally, the command must provide conspicuous follow-up responses to issues raised to complete the process. Town hall meetings provide an excellent opportunity for commanders and the various publics to interact and improve community institutions.

COMMUNITY ASSISTANCE

7-42. Community assistance applies the skills, capabilities and resources of the needs and interests of the local community. Providing support for and participating in events and activities which are beneficial to both the Army and the community, builds on a long tradition of "America's Army" helping American communities. Identifying opportunities, which advance the interests of both the Army and the community, is an important objective for every commander.

7-43. Community assistance projects and operations must impact positively on the unit or individual soldier, enhance unit or individual readiness and contribute toward the common good of the community. Army commanders must ensure that their initiatives are not competitive with local resources or services and do not benefit any particular interest group and will not result in monetary or service remuneration in any form for unit members or the unit as a whole.

7-44. Increasing public awareness and understanding of the Army, inspiring patriotism and enhancing the Army's reputation as a good

neighbor is a goal of community assistance. Community assistance activities can help build unit morale and esprit de corps. These activities also provide an excellent opportunity for soldiers to serve as role models, which not only enhances recruiting efforts, but also serves to motivate soldiers by promoting their self-esteem and furthering their sense of service to the nation.

READINESS ENHANCEMENT

7-45. Certain community assistance activities enable a commander to train soldiers, enhance individual and unit readiness, maximize use of assets and foster a positive training environment where soldiers can become involved in realistic, “hands-on” training opportunities. Projects should be selected which exercise individual soldier skills, encourage teamwork, challenge leader planning and coordination skills, and result in measurable, positive accomplishment. Finally they should enable a unit to exercise use of its equipment, resulting in training opportunities that can generate greater operator efficiency for future missions.

7-46. Examples are:

- **Medical Readiness Program.** The Medical Readiness Program is an activity in which Army medical unit personnel, together with state medical emergency officials, plan and provide support in the form of diagnosis, treatment, and preventive medical, dental, and veterinary care to citizens in remote areas of the U.S. or its territories. The program is designed to enhance the unit's medical readiness, provide unit training opportunities and serve the public in locations where medical care is not otherwise available. The program may not compete with local private medical care that may be available.
- **Air Ambulance Participation.** The Military Assistance to Safety and Traffic Program. (MAST) is a proven example of Army support to civil authorities. This program permits the utilization of Army aviation assets to conduct emergency air evacuation and recovery efforts.
- These projects contribute to the health and welfare of the community, making the Army an integral partner in community progress and development. They can enhance the ability of the local community to support itself and its people, to provide the best possible services to the citizens and to promote a positive, healthy safe environment.
- Community service activities are those which focus on improving the community, its infrastructure and its ability to serve the local population.

7-47. **Social Improvements.** Community service social improvements, which focus on making the social environment as healthy as possible, provide the widest range of support to the population. They encompass many projects including:

7-48. Support to youth programs, such as scouting and programs that provide assistance to special need audiences such as the Special Olympics.

7-49. Examples are:

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- The Civilian Youth Opportunities Program (Challenge). This is a youth program directed at attaining a high school diploma, providing job training and placement, improving personal and social skills and providing health and hygiene education and physical training. Soldiers work with civilian leaders to provide a comprehensive support package, ranging from choosing appropriate clothing to attending residential training facilities.
 - Youth Physical Fitness Clinic Program. The National Guard encourages fitness and combines academic and athletic achievement by helping schools conduct competitions in selected athletic events. This program also establishes a separate scholar-athlete category for those students with a 3.5 or higher grade point average.

7-50. Involvement in ventures and projects that enhance the educational or cultural climate of the community, such as adult literacy, reading or community theater programs.

7-51. Examples are:

- Civilian Community Corps. This program provides managerial, organizational and technical skills for disadvantaged Americans seeking the skills for success. Through this program, the Army helps participants become productive citizens. In exchange, participants perform a wide range of community service activities that improve the foundation of American society. This program encourages intra-governmental cooperation on the federal level. It also encourages partnerships with industry, education, state, federal and local governments.
- Science and Technology Academies Reinforcing Basic Aviation and Space Exploration Program. (STARBASE) This program is an innovative partnership of professional educators, military personnel and corporate sponsors. It promotes science, mathematics and technology basics for primary through secondary schools. Using National Guard resources to spark student interest, the program develops strong self-esteem, provides excellent role models, promotes positive attitudes and develops goal-setting skills.
- The guiding principle behind community relations efforts is that the installation and the community have a common interest in providing the best possible support for each other. A cooperative relationship exists, because soldiers stationed at the installation receive life support from the community while many of the civilians who make up the community receive life support from the installation. The interdependence of the military installation and the civilian community can involve economics, education, health care, basic services, quality-of life issues and many others.
- The community relations goal of local commanders is to develop an open, mutually satisfactory, cooperative relationship between the installation and the community. These efforts improve the community's perception of the installation and the soldiers, family members and civilians who are part of the installation.
- Participation in community relations activities is an effective method for projecting a positive Army image, making the best use

of assets, providing alternative training opportunities and enhancing the relationship between the Army and the American public. Activities vary widely, ranging from individual soldier involvement to full Army participation. They are characterized by detailed coordination between the military command and community authorities. They fulfill community needs that would not otherwise be met, enhance soldier and unit morale, skills and readiness and improve the mutual support between the military and civilian communities.

Chapter 8

PA Organizations

THE BRIGADE

8-1. The Brigade PAO is the lowest level to which the Army has assigned organic Public Affairs Assets.

8-2. Working as both a special staff officer and as a member of the Brigade's planning team, the BDE PAO acts as the spokesperson for the unit, advisor to the Commander, and provides Public Affairs guidance and planning to commanders at all levels.

8-3. To support and conduct Public Affairs Operations within the Brigade, the BDE PAO has the following functions, organization and equipment:

8-4. Specific functions of the Brigade PAO, as outlined within the core competencies are:

- **Public Affairs Planning**

- Advise the commander and staff on PA implications of plans and actions.
- Write Brigade PA annex and matrices using operational tools, terms, graphics, and concepts
- Execute the plan
- Plan for future operations.
- Command and control attached Public Affairs assets within the brigade AO.
- Tactically communicate with PA units and supported combat units in the Brigade's Battlespace.

- **PA Training**

- Train and supervise stringers to assist their commanders in conducting their internal information programs.
- Train soldiers, family members, DACs and everyone habitually associated with the unit to comfortably and successfully communicate with the media.
- Utilize Train the Trainer.
- Evaluate public affairs training programs of subordinate commands.
- Train subordinate commands to facilitate the media.

- Train leaders and soldiers to protect information products and information systems from compromise and intrusion by practicing security at the source.

- **Media Facilitation**

- Assist media to gain access to units, soldiers and commanders.
- Evaluate subordinate command's media facilitation plan.
- Assist subordinate commanders to coordinate transportation.
- Conduct situation briefs as needed.
- Monitor media operations within the Area of Operations. (Maintain accountability of the media to preclude fratricide. Accomplished through reports from escorts or through electronic tagging and monitoring.)
- Respond to and mediate potential media problems; react quickly to coordinate and facilitate information issues in Brigade's Battlespace.

- **Information Strategies**

- Monitor and analyze the local Military Information Environment.
- Provide public affairs support to the G5 / S5 for the development and implementation of civil affairs programs.
- Support higher echelon Public Affairs requirements for information.
- Gather Open Source Information to help build relevant information.
- Assist Commanders to conduct internal and external information to include Hometown News Release Program.
- Monitor local news media products (Visual, print and audio) and analyze for PA implications.
- Monitor and Analyze the local Military Information Environment.
- Protect digital images, information products and PA and non-PA information systems from compromise and intrusion.

8-5. Organizational Structure:

- Captain , 46A.
- Sergeant, 46Q

8-6. Equipment:

- Computer with compatible software and communications hardware
- Access to the Tactical Internet and tactical battlefield radio communications
- Access to FM, Satellite, and video and cellular communications
- Access to Army Battle Command System, (MCS\P or CSS\CS)

8-7. Transportation:

- HMMWV

8-8. Additional Support Requirements. PAO requires linguistic support from the Civil Affairs soldiers or contract civilians attached to the Brigade.

SAMPLE PA EXECUTION MATRIX BRIGADE PUBLIC AFFAIRS OFFICER

	PHASE I	PHASE II CROSS LD	PHASE III DEFEAT	PHASE IV SEIZE OBJ. LION	PHASE V RECONSTIT.
BRIGADE	PAD CIVILIAN MEDIA				PAD AND CIVILIAN MEDIA
1-66 AR	INTERNAL	EMBEDDED MEDIA-- PRIORITY OF EFFORT			EXTRACT MEDIA
1-4 AV	AVIATION WEEKLY	SAME	SAME	SAME	AVIATION WEEKLY DEPARTS
1-5 IN (L)	OWN THE NIGHT MAG.				
SCOUTS		MEDIA REPS LINK PRIOR TO DEPLOY			
BSA	FOOD PREP QTRLY	SAME	SAME	SAME	SAME
MEDICAL	SAFETY STORIES				MEDIA - INJURED SOLDIERS

THE DIVISION

8-9. The Division PAO is the next level to which the Army has assigned organic Public Affairs assets. The division is largely self-sustaining and capable of independent operations. The division is a unit of maneuver, organized with varying numbers and types of combat, combat support (CS) and combat service support (CSS) units.

8-10. The division may be armored, mechanized, medium, light infantry, airborne or air assault; each can conduct operations over a wide range of environments.

8-11. Working as both a special staff officer and as a member of the division planning team, the DIV PAO acts as the spokesperson for the

division, advisor to the Commander, and provides Public Affairs guidance and planning.

8-12. To support and conduct Public Affairs Operations within the division, the DIV PAO has the following functions, organization and equipment:

8-13. Functions: Assumption #1: DMAIN is not in country

- Gather, analyze and disseminate open source information, focusing on global media, to increase the situational awareness throughout the command.
- Gather and disseminate multimedia products throughout the command, and to external and home station audiences.
- Conduct Public Affairs research and write the PA Estimate of the situation.
- Write the PA plan for OPORDERS, OPLANS, and TACSOPS.
- Monitor and analyze American and foreign public sentiment of current operations from available media sources for PA implications and advice.
- Monitor and analyze battlespace communications (visual, audio, FM, satellite) for PA implications.
- Monitor news media products (Visual, print and audio) and analyze for PA implications.
- Facilitate Media Operations.
- Subfunctions:
 - Assist media to gain access to units, soldiers and commanders.
 - Coordinate air and ground transportation on a non-interference basis.
 - Conduct daily situation briefs as needed.
 - Respond to media queries.
 - Validate media's credibility, expertise, knowledge, purpose and legitimacy.
 - Train and supervise unit-level PA representatives (Command Information NCOs) to assist their commanders command information programs.
 - Train soldiers, family members, DACs and everyone habitually associated with the unit to comfortably and successfully communicate with the media.
 - Survey soldiers, family members, DACs and other members of the internal audiences to measure effectiveness of the command information program.

8-14. Assumption #2: DMAIN is in country

- Advise the commander and staff on PA implications of plans and actions
- Gather, analyze, and disseminate Open Source Information, focusing on global media to increase the commander's situational awareness.
- Gather and disseminate multimedia products throughout the command, and to external and home station audiences.

-
- Conduct Public Affairs research and write the PA Estimate of the situation.
 - Write the PA plan for OPORDERS, OPLANS and TACSOPS
 - Monitor and analyze American and foreign public sentiment of current operations from available media sources for PA implications and advise
 - Monitor and analyze battlespace communications (visual, audio, FM, satellite) for PA implications
 - Monitor news media products (Visual, print and audio) and analyze for PA implications
 - Coordinate and integrate all information-related functions (PSYOPS, CA, VI, Joint, Combined and Interagency PA) into the PA plan
 - Conduct Information Operations
 - Act as a conduit for CI products from the field, sanctuary and commercial sources for input into the commander's information program. Provide command information to soldiers, family members and Department of the Army Civilians.
 - Facilitate Media Operations
 - Subfunctions:
 - Coordinate air and ground transportation on a non-interference basis
 - Assist filing stories, video and photographs on a non-interference, reimbursable basis
 - Conduct daily situation briefs as needed
 - Respond to media queries
 - Validate media's credibility, expertise, knowledge, purpose and legitimacy
 - Conduct Primary and Secondary accreditation
 - Primary--Full accreditation of non-accredited media
 - Secondary--Process media previously accredited at Corps and higher
 - Survey soldiers, DACs and other members of the internal audiences to measure effectiveness of the command information program

8-15. Organizational Structure:

- At a minimum an embedded PA division section has:
 - Major 46A and two Captains 46A
 - Master Sergeant 46Z
 - Specialist 46Q
 - Specialist, 46R
 - PFC 46Q

8-16. Equipment:

- Computer with compatible software and communications hardware and tactical fax machine.

- Access to the Tactical Internet and tactical battlefield radio communications (SINGARS, MSRT etc.)
- Access to FM, Satellite, video and cellular communications
- Access to Army Battle Command System, (MCS\P)

8-17. Transportation:

- Light Division--HMMWV
- Armor and Mech Division-- HMMWV and Trailer

8-18. TAC 1 AND 2 Missions and Functions

TACTICAL COMMAND POST PA SECTION

8-19. The TAC CP, Public Affairs Section is task-organized based on METT-TC. It is the center of gravity for immediate internal and external communication, resolution of Public Affairs issues and violations of ground rules by media representatives. It acts as a conduit to the Information Operations Cell in the DMAIN adding immediacy to the Open Source Information process.

8-20. Public Affairs personnel deploy with the lead elements during any contingency and remain with the TAC CP to assist the commander, provide internal command information to deployed soldiers and limited external information to home station. They conduct media facilitation to expedite the flow of information to the America public while freeing the commander and his soldiers to conduct their mission.

8-21. The TAC CP, Public Affairs Section maintains connectivity with commanders and global information sources. It contributes to and monitors the common relevant picture, and synchronizes collection and dissemination efforts of soldiers far forward to internal and external audiences.

8-22. Particularly during split-based operations, the PAO task organizes his section to best serve the commander, his soldiers and the American public's need for information.

8-23. Assumption #1: DMAIN is not in country

- Act as the division spokesman.
- Advise the commander and staff on PA implications of plans and actions.
- Execute the plan.
- Assist DMAIN to gather Open Source Information to build the common relevant picture.
- Conduct Information Operations.
- Gather and disseminate multimedia products throughout the command and to external and home station audiences. Act as a conduit for CI products from the field, sanctuary and commercial sources for input into the commander's information program.
- Monitor and analyze battlespace communications (visual, audio, FM and satellite) for PA implications.
- Monitor local news media products (Visual, print and audio) and analyze for PA implications.

-
- Coordinate, integrate, and synchronize all information-related functions (PSYOPS, CA, VI, Joint, Combined, and Interagency PA).
 - Synchronize Public Affairs assets (internal and external) within AO.
 - Facilitate Media Operations:
 - Assist media to gain access to units, soldiers and commanders.
 - Coordinate transportation on a non-interference basis.
 - Assist filing stories, video and photographs on a non-interference, reimbursable basis.
 - Conduct daily situation briefs as needed.
 - Respond to media queries.
 - Monitor media operations within the AO.
 - Respond to and mediate potential media problems; react quickly to coordinate and facilitate information issues throughout the AO.
 - Validate media's credibility, expertise, knowledge, purpose and legitimacy.
 - Provide seamless connectivity for media accountability throughout the AO.
 - Conduct Primary and Secondary accreditation.
 - Primary--Full accreditation of non-accredited media.
 - Secondary--Process media previously accredited at Corps and higher.

8-24. Assumption #2: DMAIN is in country

- Act as the division spokesman.
- Advise the commander and staff on PA implications of plans and actions.
- Execute the plan.
- Assist DMAIN to gather Open Source Information to build the common relevant picture.
- Monitor battlespace communications (visual, audio, FM and satellite) for PA implications.
- Facilitate Media Operations:
 - Assist media to gain access to units, soldiers and commanders.
 - Conduct daily situation briefs as needed.
 - Monitor media operations within the AO.
 - Respond to and mediate potential media problems; react quickly to coordinate and facilitate information issues throughout the AO.
 - Provide seamless connectivity for media accountability throughout the AO.
 - Conduct Secondary accreditation.
 - Secondary--Process media previously accredited at Corps and higher.

8-25. The division public affairs section provides public affairs support to the division commander and to divisional units deployed in support of combined or joint operations. The division PAO has operational and tactical control over all PA TOE organizations assigned or attached to the division and coordinates closely with embedded PA sections within brigades or divisions to carry out PA operations.

8-26. The division PA staff, when deployed, is augmented by one PAD and one MPAD per three combat brigades. The division public affairs section, if augmented only by a Public Affairs Detachment, operates the division media operations center.

8-27. Traditionally, divisions have operated as part of a corps. In corps operations, divisions normally comprise 9 to 12 maneuver battalions, organic artillery battalions and supporting CS and CSS units. Divisions perform a wide range of tactical missions and for limited periods are self-sustaining. Corps augment divisions as the mission requires.

Chapter 9

Information Operations

INTEGRATING PUBLIC AFFAIRS

9-1. Information Operations involve a variety of disciplines and activities that range from electronic warfare and physical destruction through cyberwar and information campaigns. Public affairs is a related activity of IO, and contributes to overall operational success, both real and perceived.

9-2. Successful integrated IO requires coordination of themes, messages and activities in order to leverage the massing of information effects. When synchronized with other military operations, IO is a combat multiplier.

9-3. Information campaign objectives cannot be neatly divided by discipline, such as PA, CA and PSYOP. The responsible organization cannot be easily determined solely by looking at the medium, the message or the audience. For example, information about weapons turn-in policy and collection sites may be disseminated through a variety of means. This could include direct contact by Civil Affairs personnel with local populations and their leaders; PSYOP print and broadcast products; news releases, press conferences and other media facilitation coordinated by PA.

9-4. In accordance with joint doctrine (Joint Pub 3-61, Doctrine for Public Affairs in Joint Operations), public affairs are an operational function designed to contribute to the overall success of joint operations. For Public Affairs, the audience may be internal or external, but the objective is constant: Soldiers, participants and the public must understand objectives, motives and the nature, scope and duration of friendly actions. The relevant audiences important to the commander are not limited to soldiers and the American public, but are also international as well as local to the operation.

9-5. Synchronized information operations contribute to military campaigns in a variety of ways. These contributions may:

- Gain or sustain support for the U.S. or coalition position
- Reduce the need for combat forces
- Influence events with non-lethal means
- Counter propaganda and disinformation
- Discourage adversary offensive operations
- Deter hostile actions

- Undermine illegitimate regimes
- Support the maintenance of coalitions

9-6. Information Operations during peacekeeping operations:

- Promote peaceful cooperation
- Lower friendly force requirements
- Counter propaganda and disinformation
- Reduce friction leading to hostilities
- Gain and maintain the initiative
- Shape opponent plans and operations

9-7. These goals may not be achieved solely by tactical level information operations, but rather, may be theater and national-level issues that are reinforced by tactical-level message dissemination. This requires horizontal and vertical integration of themes and messages to achieve a massing of information effects.

IO STAFF ORGANIZATION

9-8. Composition of the Information Operations battle staff/coordination council or other such element is flexible and tailored to the operation and desires of the commander. (See figure 9-1). Notional IO staff structures are included in FM 3-13 (100-6), Information Operations.

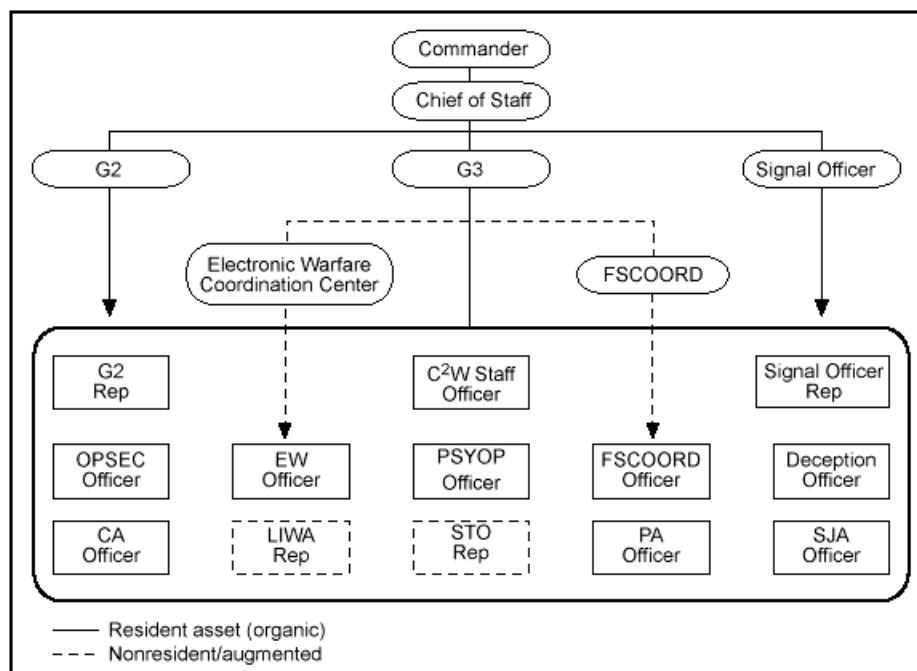


Fig 9-1 Notional IO Battlestaff

9-9. The IO cell is often headed by the G-3 or his designated representative, and includes representatives of a variety of organizations. The staff may include, but not necessarily be limited to the G2, G3, G5, G6, PAO, PMO, JAG, PSYOP, Electronic Warfare Officer, Political Advisor, Joint Military Commission representative, Fire Support Coordinator and Targeting Board representative.

9-10. The successful accomplishment of a specific mission may require the close coordination and synchronization of the range of information activities as well as maneuver elements. While the IO cell is lead by the G3 or his designate, IO coordination is the responsibility of the Land Information Warfare Activity field support team. While providing a public affairs representative to the IO Cell, PAOs must maintain a clear and direct link with the commander.

LIWA

9-11. The Land Information Warfare Activity, an INSCOM element, provides commanders with field support teams (FST) that serve as IO advisors in addition to effecting the synchronization and coordination of the range of activities that support IO. LIWA field support teams do not serve as functional area specialists, but rather, coordinate the activities of those elements. For example, the LIWA FST members may be from the military intelligence and PSYOP branches, but do not serve as the commander's intelligence analyst or PSYOP planner, or for that matter, Public Affairs advisor. They do, however, coordinate the actions and products of these and other activities in support of the IO plan.

PA SUPPORT TO INFORMATION OPERATIONS

9-12. PA participation in IO involves no completely new tasks but does require a broadened scope of operations. PA support to IO requires analysis of the Global Information Environment (GIE) and the operational environment, as well as synchronization of efforts with other organizations and agencies to ensure themes and messages are consistent and deconflicted.

9-13. PA in IO requires PA staffs to be fundamentally proactive rather than reactive. Often, actions may be taken and products developed to assist command achievement of a desired end state. This is more than merely reacting to events with a press release or conference

9-14. PA actions and events that support IO include print and electronic products, news releases, press conferences and media facilitation. PA advises the commander on how the operation is being perceived and portrayed and also provides guidance to unit commanders and soldiers. This includes regular talking points and themes for commanders and preparing soldiers to interact with the press. It's a means of emphasizing selected issues and positions--speaking with one voice.

PA ESTIMATE AND IO PLANNING

9-15. The starting point for PA contributions to Information Operations is the Public Affairs Estimate. (See Appendix C). The PA estimate consolidates information on the audiences, media presence, public opinion, personnel available and PA guidance.

9-16. This is not a static document created at the beginning of an operation, but must be continually updated to reflect changes in the operational situation and environment. Issues to consider include:

9-17. **Audience analysis.** Who are the audiences, both internal and external? What are their information needs? How do they get their information: television, radio, newspapers or word of mouth? Is the media

state-run or independent? Does the audience population have telephones, cell phones, fax machines or Internet connections? These devices are frequently found even in developing countries and must be considered during the analysis of information channels.

9-18. **Media presence.** What media representatives and organizations are in the area of operation? Are they radio, television or print? Are they state-run or independent? What is their political slant? Are they pro- or anti-coalition? Are they receptive to coalition information products such as news releases or other print or electronic products? Is the local media interested in live interviews with U.S. commanders and soldiers?

9-19. **Public Opinion.** What are the opinions/beliefs of the local populations; of the international community; of the U.S. national population?

9-20. **Personnel available.** What is the available Public Affairs force structure (PADs, MPADs, BODs, CPIC/JIB staff, unit organic PA staff and individual additions), translators, Combat Camera and administrative staff.

9-21. **PA guidance.** What guidance has been received from higher levels? Official positions on theater issues are naturally not developed at the tactical level. What is the theater strategic/national command authority position? This is often coordinated and deconflicted at all levels via conference calls and other communication means.

IO CAMPAIGN CYCLE

9-22. There are four stages to an IO campaign cycle: capability development, assessment, planning and execution. The execution stage is accompanied by evaluation-- during and after the mission -- in order to adjust operations as needed and after the operation to gather lessons learned.

9-23. Capability development:

- Identify local resources and available external support. Theme and message delivery can take many forms, including radio/television, handbills, leaflets, loudspeakers, soldiers, displays, the Internet, internal information products, USIA, Voice of America, print and electronic news releases, press conferences, direct contact with parties, leaders, officials and citizens. Direct contact may include military liaisons, Civil Affairs personnel, diplomatic contact, or any form of personal interaction.
- Establish processes and procedures
- Collect, organize and store relevant information

9-24. Assessment

- Perform mission analysis
- Obtain commander's guidance
- Define IO goals and objectives
- Conduct risk assessment
- The assessment phase includes a mission analysis, clarification of the commander's guidance, initial identification of IO goals and objectives and a risk assessment. Goals and objectives include a

determination of the desired end state and what must be done to achieve it. This may mean inducing others to take or not take certain actions, or have the information to make certain decisions that will support the goals of the operation. Public Affairs is not in the business of shaping beliefs and attitudes of populations, but can provide factual information that enables people to make informed decisions.

- Risk Assessment
 - Consequences for command if information operation fails?
 - Potential unintended effects?
 - Operational success too reliant on IO?
 - Can IO campaign be used against U.S. or coalition?
 - Force protection issues?
 - Compromise or loss of impartiality?

9-25. Planning

- Develop and coordinate themes
- Determine the best implementation means
- Delineate tasks and responsibilities
- Identify feedback and measures of effectiveness channels
- Prepare implementation order
- During the planning phase, specific themes are developed and coordinated with all members of the IO cell. Message/theme delivery methods are determined and specific tasks and responsibilities are assigned. The IO cell may use a synchronization matrix to effectively manage IO events. For example, this matrix will indicate specific actions, events or products each member organization of the IO cell will execute or produce to support the plan. For example, a specific event may require PSYOP leaflets and broadcasts, PA press releases, news conferences and interviews with soldiers and Civil Affairs meetings with local officials and community leaders. These activities are coordinated on the matrix, ensuring deconfliction of resources, messages and products.
- Measures of effectiveness and feedback indicators vary widely and should be identified in the planning process. They may include questions raised by the media, editorials and commentaries, statements by public officials, postings to internet newsgroups and forums, demonstrations and protests, statements during meetings, responses given to public opinion surveys, behaviors during specific events, as well as other SIGINT and HUMINT collection and analysis.
- The product of the planning phase is a synchronization matrix and execution schedule. The matrix is then coordinated with the overall synchronization matrix, ensuring that IO is coordinated across the BOSSs.

9-26. Execution

- Conduct the mission.

- IO monitoring must be conducted throughout the execution of the event and during follow-up review, feedback and evaluation.
- If necessary or possible, alter mission if evaluation determines it is not successful or unexpected responses occur.

9-27. **Evaluate**

- Assess the effectiveness of the operation
- Determine preventive methods, document lessons learned and apply to next operation

Appendix A

DoD PRINCIPLES OF INFORMATION

The DoD Principles of Information are contained in DoD Directive 5122.5, Change 1. They chart the course for all DoD Public Affairs activities, and apply to the full continuum of day-to-day activities and operations. It is the commander's responsibility to ensure that all planning for military activities and operations efficiently and effectively achieve the goals set by these principles.

DOD PRINCIPLES OF INFORMATION

- A. Timely and accurate information will be made available so that the public, Congress, and the news media may assess and understand the facts about national security, defense strategy, and on-going joint and unilateral operations.
- B. Requests for information from organizations and private citizens will be answered in a timely manner. In carrying out this policy, the following principles of information apply:
 - (1) Information will be made fully available, consistent with statutory requirements, unless its release is precluded by current and valid security classification. The provisions of the Freedom of Information Act and the Privacy Act will be complied with in both letter and spirit.
 - (2) A free flow of general and military information will be made available, without censorship or propaganda, to the men and women of the Armed Forces and their family members.
 - (3) Information will not be classified or otherwise withheld to protect the government from criticism or embarrassment.
 - (4) Information will be withheld only when disclosure would adversely affect national and operations security or threaten the safety or privacy of the men and women of the Armed Forces.
 - (5) The Department's obligation to provide the public with information on its major programs and operations may require detailed public affairs planning and coordination within the Department and with other government agencies. The sole purpose of such activity is to expedite the flow of information to the public; propaganda or publicity designed to sway or direct public opinion will not be included in Department of Defense public affairs programs.

Appendix B

THE GUIDELINES FOR COVERAGE OF DOD COMBAT OPERATIONS

DOD MEDIA GUIDELINES

The DoD Media Guidelines, issued as Change 3 to DoD Directive 5122.5, provide the following guidelines for coverage of DoD combat operations:

- A. Open and independent reporting will be the principal means of coverage of U.S. military operations.
- B. Pools are not to serve as the standard means of covering U.S. military operations. But pools may sometimes provide the only feasible means of early access to a military operation. Pools should be as large as possible and disbanded at the earliest opportunity--within 24 to 36 hours when possible. The arrival of early access pools will not cancel the principle of independent coverage for journalists already in the area.
- C. Even under conditions of open coverage, pools may be appropriate for specific events, such as those at extremely remote locations or where space is limited.
- D. Journalists in a combat zone will be credentialed by the U.S. military and will be required to abide by a clear set of military security ground rules that protect U.S. forces and their operations. Violation of the ground rules can result in suspension of credentials and expulsion from the combat zone of the journalists involved. News organizations will make their best efforts to assign experienced journalists to combat operations and then make them familiar with U.S. military operations.
- E. Journalists will be provided access to all major military units. Special operations restriction may limit access in some cases.
- F. Military public affairs officers should act as liaisons but should not interfere with the reporting process.
- G. Under conditions of open coverage, field commanders will permit journalists to ride on military vehicles and aircraft whenever feasible. The military will be responsible for the transportation of pools.
- H. Consistent with its capabilities, the military will supply PAOs with facilities to enable timely, secure compatible transmission of pool material and will make these facilities available whenever possible for filing independent coverage. In cases when government facilities are unavailable, journalists will, as always, file by any other means available. The military will not ban communications systems operated by news media organizations, but electromagnetic operational security in battlefield situations may require limited restrictions on the use of such systems.
- I. These principles will apply as well to the operations of the standing DoD National Media Pool system.

Appendix C

PUBLIC AFFAIRS ESTIMATE

SAMPLE PA ESTIMATE

FM 6-99 (101-5)

Classification

Headquarters

Place of issue

Date, time, and time zone

Message Ref. no.

PUBLIC AFFAIRS OPERATIONS ESTIMATE NO. _____

References: Maps, charts, or other documents.

Time zone used throughout the estimate:

1. MISSION

This paragraph lists the command's restated mission from a public affairs perspective.

2. THE SITUATION AND CONSIDERATIONS

The paragraph describes the strategic and operational media environment in which the operation is being conducted and identifies the critical factors that might impact on the command's mission -- the "action and reaction" within global media channels. It identifies the media environment across the operational continuum, describing it from "austere" for low media interest and capability in a limited AOR communication infrastructure to "dynamic" for high media interest and capability in a high-tech AOR infrastructure. At a minimum, this paragraph must include:

- a. Information environment. This paragraph describes the characteristics of the operation and the information environment in the area of operations. It identifies any activities or issues affecting the over-all mission and the command's public affairs objectives.
- b. Media presence. An assessment of the news media presence in the theater of operations prior to deployment and the likely presence of additional news media during the conduct of operations. This assessment

- should address the authority under which media representatives are operating and the degree of control that can be imposed on their efforts.
- c. Media capabilities. An assessment of the media's information collection and communication technology, specifically identifying their level of visual information acquisition and satellite communication capabilities. It includes an analysis of the logistics support, transportation assets, and host-nation communications infrastructure available to them.
 - d. Media content. An assessment of the global media's presentation of information and their agendas, and an analysis and prioritization of the potential strategic and operational issues confronting the command in the news media. This media content analysis will provide an evaluation of the quantity of coverage and the nature of that coverage.
 - e. Public opinion. Assessment of national and international attitude about the operation and command, leaders, and soldiers conducting it. This paragraph should include both the perceptions held by major audience groups and the relative solidity or strength of those attitudes. A public opinion analysis should include as a minimum an analysis of the following groups:
 - American public
 - Civilian political leaders
 - Coalition and allied forces and their publics
 - International audience
 - Internal command audience
 - Home station public
 - f. Information channel availability. An assessment of the information channels available for the communication of information in and out of the AOR. It identifies the means available to the commander for receipt, transmission, and dissemination of voice, data, text, graphics, and digital visual imaging. It describes command, coalition, and local national facilities and equipment available, to include an analysis of available telephone lines for voice and data transmission, the accessibility of audio and video channels, the prevalence of private communications devices such as soldier-owned cellular telephones, facsimile machines, computers, portable radios and televisions, still and video cameras, and the nature and flow of the information possible through these channels.
 - g. Information needs. This is an assessment of the information needs of the previously identified key publics. It analyzes key internal and external audiences and assesses their news and information expectations. It identifies the types of information made available to these key audiences.
 - h. Personnel situation. Describes the present dispositions of public affairs personnel and units that affect the PA mission, and the assets needed and available. State known personnel problems, if any, that may affect the PA situation. Consult the personnel estimate for details. (Examples of personnel include shortages of PA NCOs and skilled operators for equipment.)
 - i. Public Affairs situation. This summarizes current PA objectives and identifies specific courses of action for each objective. At high levels of command, detail information in a summary with a reference to an annex to the estimate. Subparagraphs will include all current (PAG) from OSD (PA).
 - j. Logistical situation. State known logistic problems, if any that may affect the PA situation. See logistic estimate for details. (Examples of

logistic problems include the lack of transportation and adequate facilities.)

- k. Assumptions. Until specific planning guidance from the commander becomes available, you may need assumptions for initiating planning or preparing the estimate. Modify these assumptions as factual data or planning guidance becomes available.

3. ANALYSIS OF COURSES OF ACTION

Analyze each course of action based on the public affairs objectives in paragraph 2i. Indicate problems and deficiencies. At a minimum, subparagraphs should include media facilitation and support, news and information provision, and force training and support.

Analyze each COA from a PA point of view to determine its advantages and disadvantages for conducting PA. The detail in which the analysis is made is determined by the level of command, scope of operations, and of urgency of need.

4. COMPARISON OF COURSES OF ACTION

Compare each course of action. List advantages and disadvantages of each course of action under consideration. Include methods of overcoming deficiencies or modification required for each course of action.

5. CONCLUSIONS

- a. Indicate whether you can support the command mission (restated in paragraph from the public affairs viewpoint).
- b. Indicate which COAs you can best support.
- c. List major public affairs deficiencies, which commander must consider. Include specific recommendations about methods of eliminating or reducing their effects.

(Public Affairs Officer)

ANNEXES: (As required)

DISTRIBUTION:

(NOTE: The headings listed in this assessment are for example only. Use headings appropriate to your command's operations.)

Classification

PA Operations Estimate

Appendix D
PUBLIC AFFAIRS ANNEX

SAMPLE PA ANNEX

FM 6-99 (101-5)

(Classification)

(Change from oral orders, if any)

Copy ___ of ___ copies
Issuing headquarters
Place of issue (may be in ___ code)
Date-time group of signature
Message reference no. _____

ANNEX__ (PUBLIC AFFAIRS) TO OPERATIONAL ORDER _____

References: Maps, charts, and other relevant documents

Time zone used throughout order:

1. SITUATION

A brief general description of the situation, information affecting public affairs support, which paragraph 1 of the OPOD does not cover, and intended purpose of this annex.

- a. Friendly forces. Outline the higher headquarters' plan (and PA annex) and adjacent unit PA plans. Provide information on friendly coalition forces, which may impact the PA mission. Note PA resources supporting the unit. (Who, where, when), (higher, allied and adjacent headquarters).
- b. Attachments and detachments. Identify all augmenting PA units supporting this command and all attached/assigned subordinate units. Include effective dates, if applicable.
- c. Enemy forces. List information not included in the OPLAN/OPORD, which may impact the PA mission. (Who, where, when, disinformation, rumors, propaganda and OPSEC).
- d. Media. Identify media in the area. (who, where, pools, US. international, local-host country).
- e. Assumptions. List any additional assumptions or information not included in the general situation, which will impact the PA mission.

2. MISSION

Clearly, concisely state the public affairs mission. (Internal information for deployed and non-deployed forces, media facilitation and staff operations).

3. EXECUTION

- a. Concept of operation. Briefly summarize the public affairs operation plan. Include PA priorities. (Intent --access, information, welfare, morale, will to win) (Concept--who, where, what, why, when) (Specifics--task to a

subordinate; who is to do what, where, when, covers non-PAs too, actions with media: credential, train, transport)

- b. Outline of PA tasks. Identify and assign supporting PA tasks to each element of subordinate and supporting units. Assign specific tasks to elements of the command charged with public affairs tasks, such as requirements for PA augmentation.
- c. Coordinating instructions. Give details on coordination, task organization and groupings. List instructions, which apply to two or more subordinate elements or units. Refer to supporting appendixes (PA assessment) not referenced elsewhere. (Public Affairs Guidance, media in country, media enroute with US forces, media contact report, handover checklist, and task organization).

4. SERVICE SUPPORT

- a. A statement of the administrative arrangements applicable to this operation. If they are lengthy or are not ready for inclusion in the OPORD, these arrangements may be issued separately and referenced here.
- b. A statement of the logistical arrangements applicable to this operation. Specific coordination should be included if possible, but arrangements may be issued separately and referenced here, if they are too lengthy. (Class I-IX and water), (Services: billets, medical, laundry and mortuary), (Transport: ground, air, TOE, tasked rented/leased, contracted).

5. COMMAND AND SIGNAL

List signal, visual imaging and satellite communications policies, headquarters and media center locations or movements, code words, code names, and liaison elements. (PAO location, media center, JIBs, sub-JIBs, phones, faxes, e-mail and web page).

ACKNOWLEDGE:

NAME (Commander's last name)
RANK (Commander's rank)

OFFICIAL:

APPENDIXES: (List PA assessment appendix)

DISTRIBUTION:

Classification

Appendix E

PUBLIC AFFAIRS GUIDANCE

SAMPLE PA GUIDANCE

Public Affairs Guidance (PAG) is the operational tool that guides commanders and their public affairs officers in the application of doctrine and policy during major military operations, exercises, and contingencies. The information below is tended to assist local commanders in preparing and obtaining approved guidance.

DoD policy requires that PPAG be provided to the Assistant Secretary of Defense-Public Affairs (ASD-PA) by the Unified and Specified commands and others, as required for all major operations.

This requirement includes major training exercises that could attract national and/or international attention. PPAG may not be used without ASD-PA approval.

Upon receipt of the warning order, the commander, through his PAO, should request PAG from high headquarters. PAG may be included in alert notification or operational orders (see Part Three: Operational Planning). Commanders of major units/commands will direct their PAOs to prepare PPAG to forward the proposal through MACOM and Unified/Specified command PA channels to ASD-PA.

Commanders of Unified/Specified commands should ensure that the PPAG has been coordinated with appropriate organizations within the theater of operations whenever possible (e.g., embassies, country teams, host governments, subordinate commands).

Upon receipt of the PPAG, the ASD-PA coordinates and staffs the PPAG within the DoD and Department of State.

The ASD-PA then issues a message either approving, modifying, or disapproving the PPAG. PPAG is broken down into subject, references and then eight paragraphs (Information/explanation, Purpose and coordination for PPAG, PA Approach, Public Statement, Q&As, Contingency Statement, Miscellaneous Information, Point of Contact).

The format for PPAG follows:

SUBJECT

The subject line of the PPAG should state "PROPOSED PUBLIC AFFAIRS GUIDANCE - followed by the exercise and/or event name (U)." For coordination, it is best if the subject is unclassified.

If an exercise or event is so sensitive that the actual name cannot be used, an unclassified short title should be used; e.g., "PROPOSED PUBLIC AFFAIRS GUIDANCE - CC-(U)."

REFERENCES

Pertinent messages or other documents shall be cited in the reference section. If the PPAG is based on PA policy in the Significant Military

Exercise Brief, then the SMEB message Date-Time-Group (DTG) shall be listed.

EXERCISE INFORMATION

The **first paragraph** of the PPAG shall explain the references, the exercise, and any significant existing or anticipated problems associated with the exercise. The information in this paragraph is not for release so may remain classified after the PAG is approved for release. This paragraph may restate some PA information from the SMEB.

COORDINATION INFORMATION

The **second paragraph** shall explain the purpose of the message; identify it as being fully coordinated and theater-approved; request ASD-PA approval and specify the date it is required for use. If the PAG is transmitted to the ASD-PA before it is fully coordinated, it is the responsibility of the submitting command to ensure that the ASD-PA is promptly informed of the results of the remaining coordination. The submitting command should always follow-up a PPAG message with a phone call to ensure that the primary addressee(s) is aware that the message is en route. When the submitting command is a supporting CINC from outside the supported CINC's AOR, the supported CINC is responsible for theater coordination.

PA APPROACH

The **third paragraph** shall discuss the public affairs approach for the exercise; i.e., active or passive. This may be a restatement of the PA policy indicated in the SMEB.

- Active Approach
 - For this discussion, an "active approach" involves efforts made to stimulate public or press interest such as distributing press releases and inviting the press to observe the exercise. If an exercise or event is to be publicly announced, this paragraph shall state who will make the announcement, the method of announcement, and preferred time, and date for the announcement. If unusual circumstances prevail, the rationale for the recommendation should also be included. Part I and II exercises shall normally be announced by the ASD(PA) by issuing a news release (blue top). Other lesser exercises or training deployments, if announced by the ASD(PA), normally shall be made by release of a memorandum for correspondents (MFC). The preferred release time and/or date of exercise announcements is 1200 Eastern Standard Time (E.S.T.) on either Tuesdays or Thursdays in conjunction with the normally scheduled DoD press briefing. If a combined announcement is desired with a host country, complete details of the methods, time, and procedure shall be included in this paragraph. The active approach is recommended whenever possible to ensure appropriate media coverage of specific commands and/or units.
- Passive Approach
 - A "passive approach" is where no action is taken to generate media and/or public interest in an issue or activity beyond answering specific inquiries. If a passive approach is desired,

the PPAG shall so indicate and specify that the PAG is for response to query (RTQ) only. It shall also specify who is authorized to respond; e.g., "Only OASD(PA) may RTQ," or "All of the following addressees may use this PAG for RTQ only." To de-emphasize an event, it is best to authorize release or RTQ at the lowest possible level.

PUBLIC STATEMENT

The **fourth paragraph** shall contain a statement that explains the exercise and/or event. The statement shall be for public release in an active PA approach or for RTQ in a passive PA approach. For ease of coordination, each paragraph of the statement shall be identified as a sub-paragraph of the message; for example: The following statement is for initial public release: (TEXT FOLLOWS): QUOTE.

EXERCISE (NAME).....

THE EXERCISE WILL.....

PREVIOUS MILITARY.....

FOR ADDITIONAL INFORMATION,

CONTACT.....(UNQUOTE).

As indicated above, the last paragraph of the statement shall identify points of contact where additional information may be obtained.

QUESTIONS AND ANSWERS (Q&AS)

The **fifth paragraph** shall contain a list of proposed Q&As to enable the user to respond to the majority of anticipated questions. They should all be contained in one paragraph and should be numbered sequentially; e.g., Q1, A1; Q2, A2; Q3, A3, etc. Q&As are for use in both active and passive PA approaches, but are strictly for RTQ only and shall not be given to media as handouts.

CONTINGENCY STATEMENT

The **sixth paragraph** of the PPAG shall contain a contingency statement to be used before release of the final PAG. Usually, the contingency statement should be that we don't discuss exercises before they have been formally announced. However, this approach can be modified, as appropriate, depending on the circumstances of the exercise. If a contingency statement is not required, so state in Paragraph 6 of the PAG.

MISCELLANEOUS INFORMATION

The **seventh paragraph** shall contain other pertinent information to include the following items (when a certain sub-paragraph is not applicable, so state): Media Information Centers (e.g., Joint Information Bureaus (JIBs), Press Information Centers (PICs), exercise PA elements, etc.) Discuss whether centers are joint or combined; delineate who is responsible for the establishment; give generic description of its

composition (e.g., U.S. Army desk (O-4 and E-6/E-7), U.S. Navy/Marine desk (USN O-4/O-5, and USMC E-5/ E-6), etc.); establish the center's functions (coordination of all exercise media and/or PA activities, clearance of U.S. military-generated news material before release, production of news material for release, escort of accredited news media representatives); etc.

- Command Relationships
 - Designation of sole approving authority for all exercise-related news materials; procedures for the release and/or clearance of information (to include list of addressees for notification in case of accident and/or incident); request for participating commands and/or units to ensure that the media center is action and/or information addressee on all messages with potential PA impact (to include incident and/or accident reports); hometown news release requirements and/or instructions (passive PA approach may make hometown releases inappropriate); etc.
- Media Coverage
 - State whether media coverage is encouraged or solicited, giving rationale; news media transportation instructions; point of contact (POC) and procedures for handling such requests; requirements for news media representatives (valid passport, working media visa, local accreditation requirements, funds for food, lodging, return travel (if military air is not available), etc.); instructions regarding assistance to continental United States (CONUS)-based units for handling request from news media for accompanying travel before and following public announcement of the exercise; etc.
- DoD National Media Pool
 - Each exercise is a potential opportunity for activation and deployment of the DoD National Media Pool to cover exercise activities. As a minimum, planning should include arrangements for local ground and/or air transportation, special clothing or equipment to be provided, messing, billeting, protection of media equipment and gear, local escort requirements, and communications support for filing of pool products. Sponsoring commands shall indicate whether the exercise should be considered for a pool deployment. Identify the primary POC should the pool be activated.
- Internal Media and Audiovisual Coverage
 - Provide instructions on assistance that will be provided to this effort; degree of freedom of movement (to include whether escorts are necessary); screening of visual information (VI) materials upon completion of exercise; sponsoring command POC for handling internal information matters; etc. Also include guidelines for Armed Forces audiovisual teams documenting the exercise.
- Media Opportunities
 - If known well enough in advance, provide chronology of potential exercise events that would be of interest to media.
- Miscellaneous PA Considerations

- Indicate any other proposed PA activities or considerations; if there are none, then so state.

POINTS OF CONTACT

The **eighth paragraph** shall state the originating POC's name and phone number.

DECLASSIFICATION INSTRUCTIONS

Declassification instructions shall be the last part of the message and in accordance with subsection 4-207 of DoD 5200.1-R (reference (d)).

PUBLIC AFFAIRS OPERATIONS BRIEFINGS

BRIEFINGS

The purpose of a briefing and the desired response or result determines the briefing technique. Basically, there are four briefing types: the information briefing, the decision briefing, the mission briefing, and the staff briefing.

The Information Briefing. The information briefing informs the listener and deals primarily with facts and background information. The Information Briefing contains an introduction to the subject and the scope of the subject area. It then presents the high-priority information requiring immediate attention and complex information involving complicated plans, systems, statistics, or charts. It may also explain controversial situations or information, which require elaboration.

The Decision Briefing. The Decision Briefing includes many of the elements of the information, but goes further by seeking a decision from the decision-maker. At the beginning, the briefer clearly states that he is seeking a decision; at the end, he requests the decision.

The Mission Briefing. The Mission Briefing gives special instructions, amplifies the mission, elaborates on new orders, or assigns taskings to subordinate elements. This briefing usually follows the five-paragraph operations order format. But the briefer may also choose the information briefing format.

The Staff Briefing. The Staff Briefing informs the commander and staff of the current operational situation. Its purpose is to generate a coordinated or unified effort and in a tactical environment. It serves to keep the entire staff aware of each section's activities, thus aiding coordinated action. While there is no specific briefing format, commanders usually tailor this type of briefing to fit their information needs. PAOs address the major PA activities and the PA implications of the operational situation and other staff sections activities.

In a commander's staff briefing, the PAO is responsible for providing a summary of the "global information environment (GIE)." The PAO should present this information at the beginning of the briefing, following the intelligence summary. The PAO's GIE summary, combined with the G2/S2's intelligence preparation of the battlefield (IPB) briefing, helps to complete the picture of the operational situation, which the other elements of the command must react.

Preparation. After conducting the initial analysis of the situation, the briefer gathers and organizes information, prepares visual aids, and then rehearses, briefing only what is essential. Before developing the briefing, the briefing officer or NCO must know and understand:

- the higher headquarters mission
- the higher commander's intent
- the commander's personal guidance and intent
- all aspects of the PA estimate of the situation
- the command's objectives

While much of the information required for a GIE presentation can be found in previously published PA Area Studies, a significant amount of situational information should be pulled directly from the PA Estimate of the Situation and updated to present the latest information available.

BRIEFING FORMAT

The PA briefing format should follow an outline similar to the PA Estimate of the Situation:

- Mission - Command mission including PA objectives
- Situation and Conditions
- Information environment
- PA situation
- Media presence
- Media capabilities
- Media content
- Public opinion
- Information channel availability
- Information needs
- Current Operations/Actions
- Future Operations/Actions

Appendix G

PUBLIC AFFAIRS AREA STUDIES

FORMAT FOR PA AREA STUDIES

Public Affairs area studies provide the PA specialist and the PA planner a starting point to begin their campaign planning process. These studies are produced either to address long-term general background information or to address immediate short-term needs.

BASIC STUDY

A PA study is a document that succinctly describes the most PA-pertinent characteristics of a country, geographical area, or region. It serves as an immediate reference for the planning and conduct of PA operations.

TITLE PAGE

The title page of a Media Environment Study (MES) must show the country, area, group, or other subject of the study. It should also show the classification, the copy number, the date-time group, and command post location. (The originating unit should keep a record of the names, grades, and duty assignments of the authors.)

EXECUTIVE SUMMARY

The executive summary should address the strategic significance of the area under study. (The authors should write the executive summary last, in a clear, brief, accurate, and coherent form.)

NOTE: The commander reading the summary should use its information to decide how to employ Public Affairs in that area.

TABLE OF CONTENTS

Executive Summary

Introduction

Chapters

1. History and Ideology
2. Government and Politics
3. Foreign Relations and Policy

4. Society and Culture
5. Economy
6. Military Establishment
7. Communication Process and Effects

Endnotes

APPENDIX

- A. Country Summary
- B. Government Structure
- C. Communications Facilities
- D. Glossary

Bibliography

Distribution

INTRODUCTION

The introduction outlines the study's intent, cites the directive requiring the study, and explains the study's format.

The study's intent is to provide a summary of aspects of subject country significant to GIE. The study should identify psychological vulnerabilities, characteristics, insights, and opportunities that exist in subject country.

It is prepared as a basic source document for further development of estimates, plans, and annexes.

Although this study can help develop contingency plans, it is not tailored to any particular plan. Rather, its neutral data and insights can be used to analyze possible political and military developments in the region.

Insert here a paragraph referencing the authority directing the study and stating the research cutoff date and provisions for updating the study.

Focus the PA study on the GIE aspects of the many topics addressed. Do not view this document as a comprehensive and self-contained area study.

Instead, use it as a complement to such other standard references as the Department of the Army Area Handbook Series. In addition, the PA study should include:

Results from standard open source products.

Tries to be more analytical than descriptive in nature, making it subject to varying individual perspectives.

Works well when PA specialists compare it with studies on other countries in the region or area.

Is not a U.S. foreign policy statement or comprehensive analysis of subject country, except in areas with direct GIE relevance.

Insert here a statement of U.S. policy goals toward the country in question. This information comes from the proper USA Country Plan, Department of State Policy Memorandum, or similar document, in the priority order.

Because certain gaps exist in getting PA study material (classification level, availability of complete and timely information, or time limits on research), listing these gaps here to aid future research and guide PA study users to further inquiries.

Insert here issues or GIE-relevant material (such as an area map) not included, addressed, or completely answered elsewhere.

CHAPTER 1

HISTORY AND IDEOLOGY

In this chapter, review the evolution of the state and its people, focusing on aspects having GIE and Public Affairs significance. Do not detail chronology of the country's development. Keep in mind, however, the country's history has an important relationship to the country's historical perspective, attitudes, and current world position.

Because of its special importance to PA, in this chapter, cover historical issues thoroughly. An historical analysis of current political, economic, and military policies gives PA personnel a solid base for the study.

CHAPTER 2

GOVERNMENT AND POLITICS

In this chapter, summarize the country's political system. Give a description of its political power sources, policy making process, and the political complexities of the government.

When discussing the political system, pay close attention to the role of individuals, special interest groups, and political parties. Include the population's political attitudes, values, and view of the political system. Also discuss the government's function in society.

CHAPTER 3

FOREIGN RELATIONS AND POLICY

In this chapter, summarize the country's foreign relations. Describe its political alignment in world affairs and its relationship with the United States. Describe the foreign policy of the country. Also analyze and interpret why the country acts as it does in international affairs.

CHAPTER 4

SOCIETY AND CULTURE

In this chapter, analyze the subject country's social setting. Provide the PA personnel with the knowledge needed to understand potential audiences.

Cover the country's social organization and cultural and behavioral patterns and characteristics. Place special emphasis on the society's social values and the role of the family.

Address culture, social organization, education, customs, ethnic composition, and the interrelated effects of religion, language, and history.

CHAPTER 5

ECONOMY

In this chapter, present a brief description of the characteristics, structure, and dynamics of the national economy. Cover the subject country's economic strengths and weaknesses, current economic and labor problems, and economic potential

Describe the country's economic base and the importance of agriculture, industry, and trade. This information helps determine if the present economic structure meets the people's needs.

These economic considerations explain many of the sociological conditions that impact public opinion. Address society's perceptions of the wisdom of government economic policies.

Also describe individual or group perceptions of how members of society stand to gain or lose from those policies.

CHAPTER 6

MILITARY ESTABLISHMENT

In most countries, the military establishment involves itself in internal politics as well as external defense. Even when the military establishment does not directly compete for political power, its actions influence social and political development. Analyze the following topic areas:

- Emergency of the modern military establishment.
- Military roles in the political, economic, and social spheres, and the effects of those roles.
- Issues creating cohesion or conflict within the armed forces.

Leadership.

Conflicts within the military establishment.

Extent, quality, and influence of foreign military aid.

CHAPTER 7

COMMUNICATION PROCESS AND EFFECTS

List essential information about communication patterns for the implementation of a PA program. Include the following information:

Manner and social means of communication (not technical data on communications facilities).

Languages and language groups, nonverbal communication, and nonverbal symbols specific to the country's culture or cultures.

Distinctive styles in rhetoric or visual arts, including dramatic, poetic, and musical forms. All these forms are significant to PA.

Data on the society's formal and informal leadership positions where the incumbents are key communicators and opinion leaders.

Analysis of the reading and listening habits of the society.

Analysis of printed formats.

Analysis of media effectiveness. Also address freedom of the press issues, if any.

ENDNOTES

LIST PUBLICATIONS, DOCUMENTS, AND OTHER SOURCES USED IN PRODUCING THIS BPS. NUMBER TEXT REFERENCES SEQUENTIALLY WITHIN THE STUDY.

APPENDIX A

COUNTRY SUMMARY

Give the reader a brief overview of the subject country, its geography, and its people. These background data and statistics should include the following items:

Country. Identify the country, tell when formed, and show previous control.

Government. State briefly the type of government, method of appointing or electing leaders, and length of terms. List current leader or leaders and political power in country.

Size, location, and geographical subdivision. List the size of the area in square miles or kilometers, and give the general location. Show any geographical subdivision, such as coasts, mountains, and flatlands.

Population. State the number of people and the area density. Show the heavily populated areas.

Languages and dialects. List the official language, languages spoken by the population, percentage of population speaking each language, and areas of the concentrations.

Labor. Outline the total work force, the area of endeavor, and the percentages.

Religions and sects. List the religions of the area and the percentage of the population that practices each.

Education. List the types of systems and the primary emphasis of each.

Literacy rates. Latest statistics.

Health. List the general conditions of the populace. Describe the medical care system.

Justice. Describe the justice and court systems.

Administration. Outline the breakdown of the governmental and judicial districts, counties, or precincts.

Transportation. List the methods of transportation available and include the total capabilities. This information may include the number of airlines, airfields, kilometers and kinds of highways, and kilometers of waterways and depth.

Armed forces. List organization and strengths.

Police. List the types and areas of responsibilities.

APPENDIX B

GOVERNMENT STRUCTURE

List the formal government structure, key positions, and organizations of the country. Outline the chain of government control, including political parties, if applicable. A schematic diagram may be helpful.

Include only branches of government and their key positions, not names.

APPENDIX C

COMMUNICATION FACILITIES

Give a brief overview of the subject country's media facilities. Include the facilities' locations and levels of technical sophistication. Cover printing, publishing, and the distribution of radio and television receivers, studios, transmitters, and relay facilities. Include news service facilities. Write this appendix as if the U.S. PA units will use this equipment or contract for its services. Since PA personnel may get operating supplies or repair parts from in-country sources, provide the following information:

- Make.
- Model.
- Type.
- Series.
- Name of manufacturer.

Any other technical information on the repair or operation of this equipment.

GLOSSARY

Prepare a glossary that lists in alphabetical order all acronyms and foreign words used in the study. List also all words and terms that have special meaning and need to be defined.

BIBLIOGRAPHY

List the source material used. Include the name of the author, the title of the publication, the publisher, and the date of publication.

DISTRIBUTION

Dissemination is accomplished by the originating agency for the recipients within PA. Include in the distribution list the identification of recipient agency (by code), the number of copies furnished, and the office symbol of the recipient.

BRIEFINGS AND PRESS CONFERENCE FORMATS

NEWS BRIEFING AND PRESS CONFERENCE FORMAT

Before the Presentation

Know your publics
Anticipate interests, concerns and questions
Consider the latter in preparation

Prepare your presentation
Develop a strong introduction
Develop a maximum of three key messages
Assemble your supporting data
Prepare audiovisual aids
Practice

Prepare for answering questions
Anticipate what questions will arise
Prepare answers to those questions
Practice questioning and responding

The Opening Statement

A strong opening statement sets the tone for the press conference or news briefing and is crucial in attempting to establish trust and build credibility. The elements of a strong opening are:

Introduction
A statement of personal concern
A statement of organizational commitment and intent
A statement of purpose and plan for the meeting

Key messages and supporting data
A maximum of three “take-home points”
Information to support the key messages

Conclusion
A summarizing statement

Total time for all presenters should be 15 minutes or less. Do not have too many presenters. Three is usually sufficient.

Introduction

Remember that perceived empathy is a vital factor in establishing trust and building credibility and your publics assess it in the first 30 seconds.

Examples are:

Statement of personal concern: “As a resident of this community I’m interested in the safety and well-being of our families and neighborhoods.”

Statement of organizational commitment and intent: “ I’m here to share with you the knowledge and confidence I have in the military’s ability to assist the citizens of our community. They have been trained in their occupational skill to assist with the task at hand.”

Statement of purpose and plan for the presentation: Today I would like to share with you the most current information regarding the (incident.) I will also be available to answer additional questions or to continue the discussion.

Key messages and supporting data

The key messages are points you want your publics to have in their minds after the presentation. They should:

Address central issues.

Be short and concise.

Examples are:

“We have trained personnel and emergency response plans in place to aid in protecting the health, safety and welfare of the public. We are working with local and state officials to handle the incident.

“We are actively responding to the emergency....”

To develop your key messages:

Brainstorm

Think freely and jot down all pieces of information you wish to communicate.

Select key messages

Identify the most important ideas. Repeat the process until you list is down to three items.

Identify supporting data

Other information you listed probably provides support to your key messages. Organize it to reflect this.

Conclusion

Restate verbatim your key messages.

Add a future action statement --- What is your organization going to do about this problem in the short and long term?

Appendix I

WAIVER OF LIABILITY STATEMENT

Whereby, I NAME passport no: _____
am about to travel with _____ forces, and whereas I am doing so entirely upon my
own initiative, risk and responsibility; now, therefore, in consideration of the permission
extended to me; I do hereby for myself, my heirs, executors and administrators, remiss,
release and forever discharge _____ and its member officers, agents and employees
acting officially or otherwise, from any and all claims, demands actions or causes of
action, on account of my death or on account of any injury to me or my property which
may occur from any cause during my stay, travel as well as all ground, flight or sea
operations incidents thereto.

I also agree to withhold any classified information, which may be accidentally disclosed
to me, and to respect embargo restrictions, which may be imposed on information which,
if disclosed, may jeopardize operational security. During my stay with _____ forces, I
will not interfere with operations. I understand that failure to comply with these security
restrictions will result in the loss of authorization to accompany _____ and may result in
cancellation of my press registration.

Signature

Witness

Printed Name

Nationality

Address: _____

Please provide the following information for a person to be notified in an emergency
(preferably next immediate relative):

SAMPLE PRE-DEPLOYMENT CHECKLIST

INTRODUCTION

A multitude of factors make each deployment uniquely different from other deployments. Each factor must be carefully examined to determine its impact on the mission, actions before deployment and what equipment is taken.

(Unit Basic Load). In all other instances the chances of drawing the UBL are remote. Certainly if the unit is deploying for war it would draw the unit's basic load of ammunition Exercise or deployment duration will affect the quantity of expendable supplies.

This checklist, like all others, is based on what has occurred before and what we have come to expect in the future. As equipment and missions change, so too must the checklist. Bottom line, expect the unexpected and react accordingly; use the checklist as a guide to help you through deployment preparation. Add to it whenever the need arises.

CHECKLIST ITEMS

1. Each HQ element and unit should have a 45-day supply of expendables identified and set aside for contingency operations. This supply should be inventoried quarterly and stockage rotated accordingly.
2. Maintain and update a master list of all areas and topics that can affect individual readiness. This includes all shots, dental status, family support plan, check to bank, etc.
3. The PAO or detachment commander (or deploying team leader) should:
 - a. Review and update PA estimates annexes and plans.
 - b. Obtain and comply with applicable published Public Affairs Guidance.
 - c. Inventory and inspect TOE equipment for accountability and serviceability before deployment.
 - d. Figure total weight and cube of equipment before moving to assembly area.
 - e. Check dependency clause in TOE document or OPLAN to determine who will be supporting and who is supporting us. Ensure responsible parties know the relationship. Establish liaison with units OPCON; attached or any new parent organization.
 - f. Ensure accompanying equipment not on TOE is listed on interim authorization document (such as facsimile machines or cellular phones).
 - g. Prepare an internal OPORD for your element detachment or team.
 - h. Review the essential elements of friendly information (EEFI) contained in the base OPLAN/OPORD and ensure each soldier understands them.
4. All leaders must consider the need for the following:
 - a. Will flak vests be required?
 - b. Should each soldier take a footlocker instead of a dufflebag?
 - c. Will weapons' carrying/security cases be needed/available? (Will weapons and protective masks be required?)
 - d. Will desert or jungle uniforms be required, and if so, what fund can be used to pay for alterations, sewing and patches?
 - e. Is there an opportunity for a service contract to be initiated at the deployed location? Cameras, video, computers, etc.? if not, and cameras go down and must be swapped out, what is the plan?
 - f. Will the deployment be considered TDY? If so, who prepares orders? What fund cite will be used? Are rental vehicles available? (Are we TDY under field conditions and required to carry meal card?)

- g. Will a fund cite be made available after redeployment to pay for repairs? (Make this request soon after being tasked - don't wait until redeployment to find out you've got to use unit funds to repair equipment.)
- h. If departing from location other than current station, what type of transportation to that location is to be used for personnel and equipment?
- i. Will personnel and equipment travel together at all times? (Insist that they do whenever possible!)
- j. Does each team have a credit card holder for authorized payments or purchases?
- k. Has an express mail system been established to ensure timely transit of products to home station? With what frequency? (If you are the ARFOR or sub-JIB, have the division PAO's/PAD's establish a plan to get products to you for review, release or use).
- l. Under what conditions will the MPAD or team(s) work? Fixed site, field conditions, etc. Will we need to deploy our own tents for sleep and work?
- m. Is the heat a condition that will affect computers, cameras, batteries, etc? If so, is air conditioning available? Refrigerators for film? What about humidity problems? Air conditioning may help but can dehumidifiers do better...consider charcoal bags placed in shipping cases.
- n. From what unit(s) do we draw support...rations, billets, fuel, etc.?
- o. If one team is deployed for a lengthy duration, is there an opportunity for the teams to be rotated?
- p. If deploying a risograph or other commercial printing machine, what quantity of copies and frequency (daily, weekly) is desired? What is the plan for distribution of copies? What is the plan for paper replenishment?
- q. Has every effort been made to ensure deployed asset has commercial phones available to assist transmitting digital photographs, responding to query, accidents and incidents, fax capability, etc.
- r. Has unit/team packing list been carefully checked to ensure the easy-to-forget yet must- have items are not forgotten. Glue sticks, chalk, scotch tape, blank overheads, etc.

Appendix K

PAO SOP OUTLINE

Chapter 1, Alert Notification Procedures

Annex A, Notification Procedures

Annex B, Section Telephone Contact Roster

Chapter 2, Individual Preparation

Annex A, Individual Admin Checklist

Annex B, POV Storage Plan, Procedures for Completing Post
POV Storage Forms.

Annex C, Personal Property Storage Plan

Section 1, Power of Attorney

Section 2, State of Obligations

Section 3, DD Form 1299, Application for
Shipment/Storage of Personal Property.

Section 4, DD Form 1701, Household Goods Inventory

Annex D, Recommended Personal Readiness Equipment

Annex E, Family Member Pre-deployment Checklist

Chapter 3, Unit Preparation

Annex A, Unit Equipment List

Chapter 4, Tactical Vehicle Preparation

Annex A, Vehicle Preparation Standards

Annex B, Vehicle Load Card

Annex C, Vehicle Inspection Checklist

Annex D, Joint Airlift Inspection Record

Annex E, HMMWV Configuration and Load Plan

Chapter 5, Rear Detachment Operations

Annex A, Communications

Annex B, Logistics Coordination

Chapter 6, Public Affairs Checklists

Annex A, Pre-Deployment Checklists

Annex B, Guide for Media Interviews

Annex C, METL and Tasks, Conditions, Standards

Annex D, DoD Principles of Information

Annex E, Policy on the News Coverage of U.S. Military in
Combat

Annex F, PA Guidance on Terrorism Counteraction

Annex G, PA Guidance on Counter-Drug Operations

Annex H, Standard PA Ground Rules

Annex I, Spokesperson Guidelines

Annex J, Command Unique Media Operations Center
Guidelines

Chapter 7, Field Operations

Annex A, Tactical Uniform

Annex B, Installation Security

Annex C, Tactical communication

Annex D, Personal Hygiene

Annex E, Morale, Welfare and Recreation

Appendix L

EXAMPLE OF MEDIA OPERATIONS CENTER

Operations of a media center will need the following support:

- Communications
- Vehicle support (day-to-day operations and media transport -- tactical or non-tactical as needed)
- Billeting and rations for media center personnel
- Admin support personnel for 24-hour operations
- Office space (hard site if possible) and power as needed

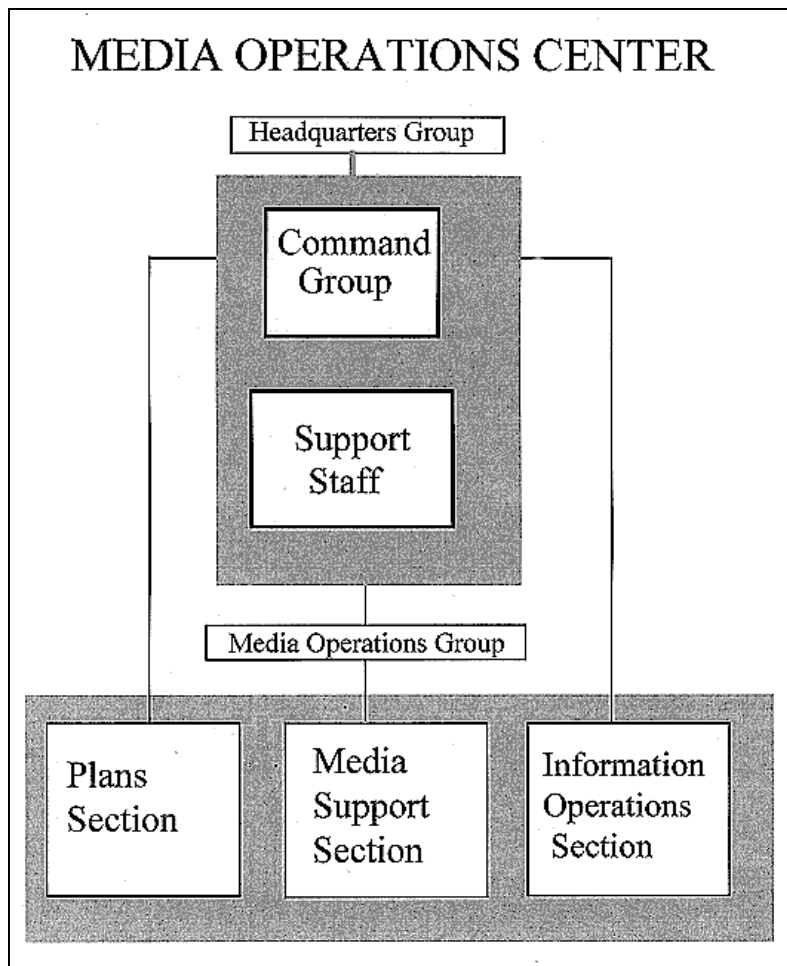


Figure L-1. Media Operations Center

Appendix M

NEW MEDIA INQUIRY FORMAT (SAMPLE)

This format is intended as an example only and should be adapted to local needs and SOPs.
In addition to query forms, PAOs should maintain a separate log of all inquiries.

MEDIA QUERY SHEET

Query Number: _____

Deadline: _____

CALLER'S NAME: _____

CALLER'S NEWS ORGANIZATION: _____

CALL TAKEN BY: _____ TIME: _____ DATE: _____

QUESTION (use reporter's precise wording): _____

RESPONSE (if written release is made, attach a copy): _____

SOURCE OF INFORMATION/COORDINATION (e.g., G-3, surgeon): _____

RELEASED TO: _____

TIME/DATE: _____

RELEASE METHOD: In Person _____ Phone _____ News Release _____

RELEASED BY: _____ RELEASE NUMBER: _____

Appendix N
GUIDE FOR MEDIA INTERVIEWS

GUIDELINES

1. Considerations

- a. When human safety or other serious concerns are involved, deal with those considerations first.
- b. Communicate only information that is approved for external distribution. Always tell the truth.
- c. Know to whom you are speaking. Get the person's name and telephone number, if necessary.
- d. Do not be intimidated. You may tell a reporter that you need to clarify an important matter before you can answer questions.
- e. Talk from the public's viewpoint. Avoid jargon. Speak within the audience's frame or reference.
- f. If the questions do not lie within the framework of approved statements or within your area of expertise, find the appropriate technical advisor or spokesperson.
- g. State the most important fact at the beginning. Place your own headline on the answer.
- h. Attack problems in your answers, not people.
- i. Do not repeat offensive or negative language. Do not let other people put words in your mouth.
- j. Direct questions deserve equally direct and forthright answers.
- k. Do not exaggerate the facts. Listen to how your answer "sounds" when spoken.
- l. Ignore cameras and microphones. Talk to the reporter.
- m. During videotaped interviews, it is all right to stop your statement and start over.
- n. Do not say "no comment." Explain why you do not have an immediate answer.
- o. Keep your composure, even if a news reporter gets snappy.
- p. Be prepared to provide sufficient evidence for statements you make.
- q. Be especially alert about photos. You have little control over photos taken off military reservation property, but you have every right to control photos taken on the military reservation.
- r. Be aware of your surroundings and follow local OPSEC rules when determining interview location

2. What will be asked?

- a. What happened and where? When did this occur

- b. Are there injuries or deaths as a result? How many and to whom?
- c. What actions is the unit taking to control the situation?
- d. Have chemicals or other hazardous substances been released into the environment? What kinds? How much?
- e. What types of hazards are presented to people off-site?
- f. Have off-site emergency response personnel been notified? Which ones?
- g. Are unit operations shut down?
- h. Has the site or facility been evacuated?
- i. How many people are employed at this site?
- j. What do you do at this site?
- k. How old is the facility? Does it meet current regulations?
- l. Why did this situation occur? (DO NOT SPECULATE.)
- m. Are there safety rules covering the situation? Were they violated?
- n. Has a Site Emergency Response Plan been activated? What does that involve?
- o. Tell me about your organization?
- p. Will this situation have national ramifications, or will its effect likely be limited to a single site or region?
- q. How much money is this going to cost the taxpayers?
- r. Is there insurance coverage for the loss or damage? How much?
- s. Are commanders handling the situation locally or is a higher headquarters taking control?
- t. Has this occurred anywhere within the unit before? Why weren't you ready?
- u. What do your soldiers think about this situation?
- v. For accidents and incidents, don't speculate causes. Use "ongoing" investigation statements.

Appendix O

MEDIA RESEARCH AND ANALYSIS

AN INTRODUCTION

Since the early part of the 20th century, when there was almost no interest in the size of audiences or in types of people that comprised various audiences, business leaders and their organizational communicators have increasingly come to rely on research for nearly every major decision they make. This expanded demand for information has created a particular demand for media communication research capabilities, specifically -- the development of a scientific basis for media analysis and media effects.

The importance of mass communications research and media analysis is partly due to the realization that gut feelings or reactions are not entirely reliable or credible bases for decisions. Although common sense is often accurate, Army commanders and other decision-makers need additional, more objective information to evaluate problems, especially when lives are at stake. Thus, the past 50 years have witnessed continuing evolution of media analysis, combining research and intuition to create a higher probability of success.

This evolution has resulted in a "scientific" approach to media research known as media content analysis.

SCIENTIFIC RESEARCH: A DEFINITION

Scientific Research is defined as a **"systematic, controlled, empirical, and critical investigation of hypothetical propositions about the presumed relationships among observed phenomena."** This definition contains the basic terms that are necessary in defining the method of scientific research and describes a procedure that has been accepted for centuries. In the 16th century, for example, scientist Tycho Brahe conducted years of systematic and controlled observation to prove wrong many of Aristotle's theories of the universe. By gaining an understanding of the phenomena, he challenged the accepted beliefs and knowledge of the time with his own hypotheses. Thus, scientific research was begun.

Whether we realize it or not, we all conduct research as a matter of course in our day-to-day life whenever we speculate about the possibility of something -- we start with an idea or concept and test it.

All research begins with a basic question or proposition about a specific phenomenon -- for example, Why do Americans usually support the soldiers within the Army when they may not support the operation the soldiers are involved in? What factors determine why Americans will support the political justification for military involvement? What types of messages are most effective in garnering support for American forces?

The answers to these questions can be forecast to some degree with well-designed research studies. There are some difficulties, however. The Army media analyst faces the problems of determining which data collection methods can most accurately provide answers to the questions at issue, and in gaining adequate access to information prior to and during military operations. In the pages that follow, we will describe the methods and procedures PA professionals may use in overcoming these difficulties.

RESEARCH APPROACHES

There are several research approaches or "methods of knowing" which have been used to conduct studies: intuition, authority, and science.

In the **intuition** approach, one assumes that something is true because it is "self-evident" or "stands to reason." An example of this type of thinking would be if some Public Affairs leaders resist efforts to perform area studies because they believe they already "know" their AO.

The **authority** method seeks to promote a belief in something because a trusted or credible source says it is true. Here, the emphasis is on the source, not the methods the source may have used to gather his information.

The **scientific method** approaches learning as a series of small steps, with each step identifying more specific information and leading to a more clearly identifiable conclusion.

For example, one study or source provides only an *indication* of what may or may not be true; the "truth" is found only through a series of objective analyses.

This means that the scientific method is self-correcting in that changes in thought or theory must be continually reviewed, that issues and situations require constant monitoring.

The scientific method has become a valuable tool to produce accurate and useful data in mass media research. This annex focuses solely on the scientific approach and forms the fundamental basis for media content analysis in Army Public Affairs.

MEDIA RESEARCH: THE SCIENTIFIC METHOD

The goal of Public Affairs media research is to provide the methodology to support situational assessment, planning and decision-making that is fast, inexpensive, reliable and valid. The application of scientific methodologies to media research by Public Affairs personnel accomplishes this goal.

Five basic characteristics, or tenets, distinguish the scientific method from the other methods of research. A research approach that does not follow these tenets cannot be considered a scientific approach:

- **Scientific research is objective.** Science tries to rule out eccentricities of judgment by researchers. When a study is undertaken, explicit rules and procedures are constructed and the researcher is bound by them, letting the chips fall where they may. Objectivity also requires that scientific research deal with facts rather than interpretations of facts.

- **Science is empirical.** Researchers are concerned with a world that is knowable and potentially measurable. (Empiricism derives from the Greek word for "experience.") Analysts must be able to perceive, understand, and classify what they study and reject nonsensical explanations of events. For example, a newspaper editor's claim that declining readership rates are "God's will" would be rejected by scientific researchers because such statements cannot be perceived, classified or measured. Experience shows that there are usually easily identifiable reasons for declining readership.
- **Scientific research is systematic and cumulative.** No single research study stands alone, nor does it rise or fall by itself. Astute research analysts always use previous studies as building blocks for their own work. One of the first steps taken in conducting research is the review of all available literature on the topic so that the current study will draw on the heritage of past research.
- **Scientist attempt to find order and consistency in their findings.** In its basic form, scientific research begins with a single, carefully observed event and progresses ultimately to the formulation of theories and laws. A theory is a set of related propositions that present a systematic view of phenomena by specifying relationships among concepts. Researchers develop theories by searching for patterns of uniformity to explain and describe the information collected.
- **Scientific research is predictive.** Science is concerned with relating the present to the future. In fact, scientific researchers strive to develop theories because they are useful in predicting behavior. The importance of theories lies in their ability to predict an outcome or an event successfully. If a theory generates predictions that are supported by data, and the results are always the same, the theory can be used to make predictions in other similar situations.

MEDIA ANALYSIS STEPS

Evaluation of a problem must follow a standard sequence of steps to increase the chances of producing relevant data. Analysts who do not follow a prescribed set of steps increase the amount of error possible in the study.

These steps are:

- Select a topic (issue, situation, perception, or belief).
- Review existing research and other available information on the topic.
- Develop hypotheses and research questions.
- Determine an appropriate methodology, format or design.
- Collect relevant data.
- Analyze and interpret the results.
- Present the results in appropriate form (Information Paper, PA Study or PA Estimate)
- Validate and replicate the study when necessary.

The use of the scientific method of research is intended to provide an objective, unbiased evaluation of data pertaining to an issue or event. To investigate hypotheses systematically, media analysts must follow these steps. However, merely following the eight steps does guarantee that the research is good, valid, reliable or useful.

A countless number of intervening variables (influences) can destroy even the most well-planned research effort. Unanticipated events occurring during the research period may impact the results and they must be accounted for during the process. However, PA analysts must remain focused on the purpose of the research effort and not lose sight of the original objectives.

STEP 1 -- SELECTING A TOPIC, DETERMINING RELEVANCE

Selecting a research topic is usually not a concern for Public Affairs analysts -- planning guidance, current situations, and most importantly, the operational issues confronting our commands, will guide the application of media content analysis. In most instances, the Public Affairs analyst will receive planning guidance well in advance of an operation, which will help determine the issues to be addressed.

Once the basic subject has been chosen, the next step is to ensure that it is relevant to the operation or situation at hand. This can be accomplished by answering six basic questions.

- What is the goal of this research effort?
- Is the subject too broad?
- Can the subject really be studied?
- Is the subject significant?
- Can the results of the research be generalized, communicated and understood?
- Does the issue lend itself to analysis?

Underlying all eight steps of the Media Analysis process is the necessity for validity. In other words, are all eight steps (from topic selection to data analysis to presentation and interpretation) the correct ones to follow in trying to answer these questions?

The answers to these questions will help focus the research you must do, make information gathering easier, and ensure the results are valid.

STEP 2 -- REVIEW OTHER RESEARCH AND INFORMATION

Media analysts should always begin studies by consulting all literature, research, and other information available on the topic. The review provides information about what work has been done, how it was done, and what the results were as they apply to a given subject. It not only allows analysts to learn from (and eventually add to) previous media research, but also saves time, effort and money.

The review also helps to identify the facts pertaining to the situation being studied.

Completed media content analysis also provides a starting point for PA leaders who will follow in your position after you move on.

STEP 3 -- DEVELOP HYPOTHESES AND RESEARCH QUESTIONS

After the general research area has been identified and the existing information reviewed, the analysts must state the problem or issue as a workable **hypothesis** or **research question**.

(Example: "The American public is losing confidence in the Army's ability to protect its soldiers, resulting from the media's portrayal of Army leaders as negligent and soldiers as lacking competence in avoiding fratricide.")

A hypothesis is a formal statement regarding the relationship between variables and is tested directly. In the example cited above, those variables are the news media, the messages they send, and the perception and understanding of those messages by the American public. With a hypothesis, the predicted relationship between the variables is either true or false. Identifying the degree of "trueness" or "falseness" and their implications is essential to the development of information campaign strategies.

On the other hand, a research question is a formally stated question intended to provide indications about something, and is not limited to the relationships between variables. Research questions are generally used in situations where an analyst is unsure about the nature of the problem under investigation. The intent is merely to gather preliminary information. Research questions are generally used to identify the focus and scope of a research project.

STEP 4 -- DETERMINE AN APPROPRIATE METHODOLOGY/RESEARCH PROGRAM DESIGN

Given the variety of situations facing Public Affairs personnel, different approaches to media research are required. Some issues lend themselves more toward survey methodology via telephone, E-mail, or standard mail; others are best attacked through in-person interviews. Still other problems necessitate a controlled evaluation situation designed to eliminate extraneous variables by targeting analysis to specific media types. (An example of this approach would be a study of how a newspaper covered a specific story over a six-month period.)

The approach selected by the analyst depends on the goals and purpose of each particular study. Regardless of whether the problems or issue being addressed is a local one, affecting only a fraction of a community audience, or a national issue affecting us all, all research requires a design of some type. All procedures, including all variables, samples, and measurement instruments, must be pre-designed with hypothesis and research questions in mind.

There are four characteristics of research design that should be noted if a research study is to produce reliable and valid results:

- **Accurate setting.** For a study to have external validity, the study must be conducted as an historical account of the situation during the time frame studied. The analyst must have a clear understanding of the events unfolding around him and attempt to document as much related information as possible.
- **Clear cause-and-effect relationships.** The analyst must make every attempt to identify spurious dependent relationships and

weed them out. The results of a study can be interpreted with confidence if and only if all confounding effects are identified.

STEP 5 -- COLLECT RELEVANT DATA

STEP 6 -- ANALYZE AND INTERPRET THE RESULTS

STEP 7 -- PRESENT THE RESULTS IN APPROPRIATE FORM (PA STUDY OR PA ESTIMATE)

STEP 8 -- VALIDATE AND REPLICATE THE STUDY WHEN NECESSARY

Appendix P

INFORMATION PROGRAM EVALUATION

METHODS

How our audiences perceive the Army is critical to the success of all operations we are involved in. Internally, the Army's people require certain information to function effectively. The more they know and understand, the better they perform. Information about the operation, the unit's particular mission, how the commander feels about the situation, and a host of other subjects are of interest to both soldiers and civilians. Externally, the general public has specific needs for information about what their Army is doing and how they are doing it. This appendix explains methods for measuring success in the conduct of PA information programs.

Command information is communication between the commanders and those commanded. Command Information is different from the Public Affairs function of Information Provision in that it is the commander's responsibility to inform his people. Commanders must communicate their intentions and the troops, community, indeed the general public, must know his concerns and intentions. It is especially important to note that PA Information Provision techniques and procedures are just one channel that the commander may use in communicating to his audiences.

A poorly recognized fact is that the communication links between the commander and his audiences occur on various levels and assorted channels. This type of communication no longer fits the "top-down" communications model of the cold war Army. The explosion of today's digital technology has provided individual soldiers, civilians, family members, and the general public the ability to bypass rigid, controlled, vertical communication systems in favor of the common user, multidirectional, reciprocal, simultaneous, real-time transactive communications systems. Americans have the power to bypass the gatekeepers and ignore canned, shoddily produced, dated industrial age information products, in favor of accessing on-line information services or the Internet directly. Information is passed in all directions, continually. These audiences will have access to many more sources of information, which makes evaluating the effects of Army PA Information Programs all the more difficult.

This explosion of information technology has also highlighted how critical it is for PA elements to stay up to date on communications technologies, information services, and socio-economic trends of these forces at work.

Despite the rapid change in the information environment, the general steps for evaluating information program effects has remained the same:

- Determine the command's mission and the commander's method for accomplishing that mission.
- Identify all the various audiences interested in information related to the command, its members, and the mission.

- Identify a public opinion baseline -- the template against which new public opinion information will be compared.
- Gather identify all the messages communicated and identify which audiences' received such information.
- Gather information on the information program impacts. This is done reviewing unit newspapers, letters to editors, responses to information programs fact sheets, formations, surveys, and interviews. Check related bulletin boards on all on-line information services. Check related Newsgroups on world-wide-web nodes, which commonly carry related information. Monitor discussion groups on on-line services.
- Attend commander's calls, staff meetings, formations, briefings, and other gatherings where audience reaction, troop morale and like information will be discussed.
- Evaluate the knowledge of the targeted organizations. This is accomplished through in-person question/answer surveys and interviews, E-mail surveys, and electronic town hall meetings, etc.
- Coordinate with other staff elements addressing similar information issues (SJA, Chaplain, PMO, IG, etc.).
- Produce a summary of information gathered in an impact assessment.

Appendix Q

PRINCIPLES OF PA SERVICE AND STANDARDS

INTRODUCTION

1. This checklist identifies the primary tasks associated with the functions of Public Affairs, and establishes standards for successful accomplishment of those tasks. Standards of service equate to minimum exceptions of an operational commander and will be used to judge unit readiness, leader effectiveness, and individual soldier performance.

2. The following definitions apply to this checklist:

Austere: No existing PA units, assets or Army signal information infrastructure available in area of operations upon deployment. Commercial communications infrastructure is not available. PA elements must perform all missions and provide all PA support using organic personnel and equipment.

Existing: PA units, assets and Army signal information infrastructure in place before deployment. Commercial communications infrastructure is available. Deploying PA element assumes duties of or augments organic PA elements. Existing personnel and equipment augmented by additional PA elements to accomplish PA mission and provide PA support.

FUNCTIONS/TASK	CONDITION	STANDARD
<hr/>		
Planning		
1. Perform Global Information Environment analysis	Existing	Austere
2. Develop PA Estimate (COAs)	Existing	Austere
3. Develop PA Strategy (plan)	Existing	Austere
4. Develop PA Guidance	Existing	Austere
5. Coordinate PA Annex	Existing	Austere
Media Facilitation		
1. ID media support requirements	Existing	Austere
2. Register news media	Existing	Austere
3. Coordinate media support	Existing	Austere
4. Provide media orientation	Existing	Austere
5. Coordinate news media interviews	Existing	Austere
6. Plan/coordinate news briefings	Existing	Austere
7. Establish Media OPS Center	Existing	Austere
8. Operate MOC	Existing	Austere

9. Provide media assistance/escort	Existing	Austere
Information strategy		
1. Identify target audiences	Existing	Austere
2. Identify information needs	Existing	Austere
3. Develop info themes/CMD messages	Existing	Austere
4. Gather info/develop products	Existing	Austere
5. Disseminate information to deployed forces	Existing	Austere
6. Disseminate information to families/home station audiences	Existing	Austere
7. Disseminate information to national/local news media	Existing	Austere
8. Disseminate information to general public	Existing	Austere
Public Affairs Training		
1. Identify training needs	Existing	Austere
2. Develop unit PA Training plan	Existing	Austere
3. Develop Family Spt Training Plan	Existing	Austere
4. Develop Senior LDR Training Plan	Existing	Austere
5. Conduct unit PA training	Existing	Austere
6. Conduct Family SPT Training	Existing	Austere
7. Conduct Senior LDR Training	Existing	Austere
8. Prepare SMEs for Media interviews	Existing	Astere
9. Evaluate training efforts	Existing	Austere

PRIVACY ACT/FREEDOM OF INFORMATION ACT

INTRODUCTION

This checklist addresses personal information about soldiers and any living persons that can or cannot be released under the provisions of the privacy act.

CHECKLIST ITEMS

- AGE (date of birth) = releasable. This information is public record.
- HOME OF RECORD/PRESENT ADDRESS = In most cases, home of record can be released if no street address is given. There is no general rule for disclosure of this information. Widely different circumstances surround each incident, and judgment is made on a case-by-case basis. In most cases, the person's present geographical location may be provided (city, state), but not the street address. In each case, the desires of the actual person or next of kin should be considered.
- MARITAL STATUS/DEPENDENTS = RELEASABLE. This information is public record, including names, ages and sex of dependents.
- AWARDS/DECORATIONS/CITATIONS = releasable.
- EDUCATION/SCHOOLING/SPECIALTY = releasable. Major area of study, school, year of graduation, degree and specialty designator is releasable.
- RACE = In most cases, NOT releasable. However, where the fact of an individual's race is relevant in providing essential facts to the Press, it may be released (such as in a racially oriented protest or altercation.)
- CHARACTER OF DISCHARGE:
 - ADMINISTRATIVE = NOT releasable, unless the individual provides his written consent.
 - PUNITIVE = releasable. This includes discharges resulting from courts martial.
 - DUTY STATUS = releasable.
- PERSONNEL BOARDS:
 - Results of promotion boards and augmentation boards are releasable.
 - Results of administrative discharge boards and aviator flight boards are NOT releasable.
- PHOTOGRAPHS IN THE CUSTODY OF THE DEPARTMENT OF DEFENSE = releasable, unless they warrant an invasion of anyone's personal privacy.

Appendix S

PA GUIDANCE ON TERRORISM COUNTERACTION

In view of the continuing media interest in the subject of terrorism, the public affairs guidance contained in this message is provided to assist PAOs in responding to media queries and in developing local contingency plans.

TERRORISM IN GENERAL

- a. **U.S. POLICY.** All terrorist acts are criminal. The U.S. Government will make no concessions to terrorists. Ransom will not be paid and nations fostering terrorism will be identified and isolated.
- b. **RESPONSIBILITY.** Department of State is the lead agency for response to international terrorist incidents that involve U.S. military personnel and facilities outside the U.S. The administrator of the Federal Aviation Administration is responsible for terrorist incidents that affect the safety of DoD personnel or property aboard an aircraft in flight. When terrorist incidents occur at military installations within CONUS or its possessions (Puerto Rico, Guam, Virgin Islands, American Samoa, and trust territories), the FBI will be the lead agency. If the FBI declines to exercise its authority, military authorities may take appropriate action within the limits of their responsibility to resolve the incident.
- c. **NOTIFICATION.** All terrorist incidents should be reported immediately through channels, to OASD/PA. No public release of information regarding a terrorist incident should be made without OASD/PA approval except for cases involving public safety.

COMBATING TERRORISM

Combating terrorism can be divided into two major areas: counter-terrorism (offensive measures) and anti-terrorism (defense measures).

- Counter-terrorism. The following statement may be used in response to queries regarding counter-terrorist forces:
- "The U.S. Government has trained forces and equipment from all four services to cope with terrorist incidents. We have also said that command and control elements for these forces exist and have been exercised. These elements report to the Joint Chiefs of Staff, as do other command and control elements for military operations. We do not comment on any details concerning the circumstances under which these forces may be deployed, their identity, or tactics."
- Requests for interviews or filming of counter-terrorism training will not, repeat will not, be approved.
- Requests for photos of counter-terrorist forces personnel or their training will not be approved.
- Because of the clear association/confusion surrounding the relationship between special operations counter-terrorism forces,

all requests for interviewing or filming special operations forces and or training will be approved by OASD/PA.

- Questions beyond the scope of the above guidance should be referred to OASD/PA..
- Anti-terrorism. The following guidance is applicable to media request for information pertaining to anti-terrorism.
- DoD officials, senior leaders, commands and knowledgeable individuals may discuss the subject of anti-terrorism as it pertains to those areas/installations for which they are responsible.(Anti-terrorism measures and procedures should be discussed in a general manner without going into a checklist of specific details.)
- Media requests to film anti-terrorist training will be approved on by OASD/PA.
- Photos of anti-terrorist training should be forwarded through channels for approval.

QUERIES

In response to queries regarding a possible or real terrorist threat at a particular base/installation/activity the PAO may acknowledge, if appropriate, that increased security measures have been/will be taken without going into specific details of all the measures taken. PAOs may, when appropriate, acknowledge the obvious.

For example, increased security measures such as increased guards at the gate or additional patrols, if they are obvious to the public may, in some cases, be acknowledged. PAOs should, however, exercise care and prudent judgment in any discussion of these or other security measures, which have been/will be implemented.

Appendix T

BROADCAST OPERATIONS

This section focuses on the radio and television services provided by Armed Forces Radio and Television Service at the unified command level and the coordination necessary by Army component commanders to ensure operational area support. It identifies and explains the AFRTS mission and its capabilities. It also discusses planning considerations and theater broadcast information requirements.

AFRTS CONTINGENCY BROADCAST OPERATIONS

The scope of the ABS mission of providing AFRTS radio and television news, information and entertainment programming to DoD personnel stationed overseas greatly expands during wartime to include support of global contingency requirements. As new contingency plans are developed based on emerging joint and Army doctrine, ABS must consider how the additional broadcasting personnel and equipment resources needed to support a rapid deployment broadcasting mission can be obtained while simultaneously meeting increased requirements in existing unified command theaters. The immediate response necessary to meet contingency requires the development of AFRTS appendices to Unified Command Operations Plans (OPLAN).

Army Broadcasting Service (ABS) is the Unified Command AFRTS Planner (UCAP) for the U.S. Southern Command and the U.S. European Command. ABS also has Geographic Area Planner (GAP) responsibilities for U.S. Forces Korea (USFK). ABS and AFRTS networks within these unified commands are responsible for updating and maintaining appendix content under provisions of the American Forces Information Service (AFIS) Concept Plan for Peacetime and Wartime Operations for the Armed Forces Radio and Television Service (AFRTS CONPLAN 98-1) and DoD Directive 5120.20-R

Contingency and/or Wartime Plans define the Mobilization/Contingency mission. Force structure to support these plans may be packaged as blocks, deployable units or detachments for ease of planning.

According to CONPLAN 98-1 and DoD Directive 5120.20-R, Unified Commanders and Subordinate Commanders, with the advice of ABS, determine the type of AFRTS Flexible Response Option (FRO) necessary. Unified and Subordinate Command support is required for the current levels of support contract and for any mission changes which affect AFRTS service in the CINC's area of operation.

AFRTS Mission

Provide live news, information and entertainment programming, free of censorship, to all DoD elements in place or deployed worldwide.

Provide U.S. military theater commanders with sufficient electronic media resources to effectively communicate DoD, Army, theater and AO command information.

Concept of Operations

Existing facilities and services will be the first AFRTS assets used to respond to AFRTS taskings.

Upon implementation of a Contingency Plan or OPLAN, AFRTS assets in the AO come under the direct operational control of the Unified Command for the period of the operation. When the operation is terminated, normal command relationships will be resumed.

The AFRTS Commander reports directly to the Unified Commander responsible for the theater of operations.

The AFRTS Commander retains direct command authority over AFRTS personnel and equipment.

The AFRTS Commander is responsible for all AFRTS matters concerning the operation, accomplishing direct coordination for the Unified Command with AFIS/AFRTS for all AFRTS issues requiring AFIS/AFRTS action, and managing all AFRTS assets involved in the operation in accordance with the AFRTS CONPLAN 98-1.

The AFRTS Commander will be a designated member of all public affairs meetings as a member of the staff.

The AFRTS Commander is authorized direct coordination with other members of the unified command's staff to work specific AFRTS support requirements.

All requests for command internal information or emergency announcements from AO organizations or personnel will be forwarded to the director of public affairs for approval.

All public information released by public affairs officials will be available for AFRTS use.

AFRTS radio and television electronic news gathering (ENG) will be dedicated for the AFRTS "on-air" mission and in direct support of the Unified Commander's internal information program.

AFRTS will provide full, factual and timely internal information and news to military audiences in the AO, consistent with national and operational security, and host country sensitivities.

AFRTS will follow Operations security (OPSEC) and communications security (COMSEC) rules.

AFRTS OPERATING PARAMETERS

AFIS is responsible for all AFRTS satellite programming services and overall policy and guidance for their use.

The AFRTS Broadcast Center (AFRTS-BC) is responsible for providing non-local and non-theater radio and television programming material to AFRTS facilities in the AO, except as outlined in Flexible Response Options (FROs).

The Television-Audio Support Activity (T-ASA) in Sacramento, California, is responsible for providing technical and logistical support to AFRTS.

The AFRTS facility in the AO will provide service based upon initial Flexible Response Options (FROs) and continue operations until directed

to modify its services by AFRTS, the Unified Command or as the mission requirement dictates.

AFRTS will provide AO-wide announcements as required on both radio and television in order to facilitate unified command needs.

At unmanned repeaters and cable distribution systems, local officials may have AFRTS personnel make local announcements, if possible, in coordination with the AFRTS commander or on-site command representative, if approved by the director of public affairs for the operation.

AFRTS NETWORK COMMANDER OR DESIGNATED REPRESENTATIVE IN THE AREA OF OPERATIONS

The AFRTS network commander or designated representative will be co-located with the unified command director of public affairs.

The AFRTS network commander or designated representative will have a command function with direct operational command authority over all resources assigned to support the AFRTS mission in the AO.

The AFRTS commander or designated representative will ensure a logistics and engineering function responsible for providing advice and assistance to maintenance personnel assigned to AFRTS outlets, and maintaining unmanned equipment. This function will assist the AFRTS chief engineer in developing new equipment support requirements as changes occur in the AO.

The AFRTS network commander or designated representative will ensure internal information ENG coverage of unified command activities of interest to the members assigned in the AO. In joint service situations, Army AFRTS representatives may also be responsible for the production and duplication of radio and television internal information products for use at AFRTS outlets and television programming for DoD, or satellite cabled sites in the AO.

UNIFIED COMMAND RESPONSIBILITIES

The unified command provides logistic support for AFRTS. This includes vehicles, POL, and supply requirements in the AO as noted in the OPLAN. Also included is vehicle maintenance and POL for all AFRTS contingency vehicles. If additional forces are deployed to support AFRTS, the unified command assigns additional vehicles to support the expanded maintenance and production requirements.

If security and/or intelligence forces determine that AFRTS facilities have been identified as a potential target by hostile forces, the unified command will notify the AFRTS facility and provide security to targeted facilities.

If contract communications support is terminated during the implementation of the OPLAN, the unified command provides communications support for AFRTS use in the AO.

This includes existing long-wire or microwave systems for distributing the AFRTS signal and support for telephones, facsimile transmission and computer equipment for AFRTS.

If support cannot be obtained from existing assets, the unified command should be prepared to augment the AFRTS mission as outlined in the OPLAN.

The unified command provides personnel, administrative, vehicle and other logistic support for all AFRTS personnel assigned in the AO and those deployed to supplement that force. This includes unit line numbers and entry clearances required for all deployed personnel supporting the AFRTS mission.

The unified command obtains country clearance for construction of any temporary transmitter towers required due to expanded AFRTS service, which may occur as the operation unfolds.

The unified command provides electrical backup power for AFRTS facilities if contract services are terminated during the implementation of the OPLAN.

The unified command is responsible for obtaining necessary broadcast frequencies in consultation with the host-nation government to meet AFRTS broadcast requirements.

Flexible Response Options

Although each operation will differ, the following are general concepts of AFRTS Flexible Response Options (FROs) available for peacetime engagements, wartime operations and stability and support operations in an area where little or no AFRTS service exists or where crisis situations require a modification to existing AFRTS services. The unified command AFRTS planner (UCAP) is responsible for developing specific equipment, support and manning requirements to implement the AFRTS FROs that best support the specific operation.

The Unified Commander for the area of operations must request AFRTS radio and/or television services or for a change in present level of service before deployment. The Unified Commander requests AFRTS assistance through the unified command AFRTS planner responsible for the area of operations. The request will then be forwarded to ABS and AFIS for final approval.

FRO One: Direct to Ship (DTS) Service Support System. DTS is an U.S. Navy peacetime capability that provides news, sports, information and entertainment to audiences on ships at sea. A wartime adaptation of the service can provide immediate access to three radio and two television channels for land-based audiences including geographically separated units down to the lowest level. A deployable AFRTS kit containing an individual receiver decoder (IRD) provides service. This service provides a single-source 24-hour capability of receiving all services, but only one channel can be accessed at a time and no local or theater command information would be available.

FRO Two: Satellite Direct Radio and Television (SDRTV). SDRTV is an unmanned AFRTS satellite service that can be provided to virtually any land based audience on the globe with up to 10 stereo radio channels and six television news, sports, information and entertainment channels. In the European theater it will include a regionally generated signal. Service is provided at a single location using a deployable AFRTS kit containing a simultaneous receiver decoder (SRD) that provides a capability of receiving all services and accessing up to six radio and television programming sources at a time. As a public affairs option,

SDRTV provides an internal information data stream that can be accessed with the addition of a computer, printer and proprietary software to the SDRTV equipment package for use by public affairs activities in providing support to deployed populations. Unified command public affairs offices and the UCAP should consider coordinating the use of the additional capability whenever a manned public affairs activity is deployed.

FRO Three: Manned Radio Systems. Signal Distribution Systems. These deployable systems include audio and video transmission and cable systems that provide a capability to distribute, DTS, SDRTV or manned radio service to an expanded autonomous geographic area such as a base camp or Air Force base in an AO.

FRO Four: Manned Radio Systems. These deployable systems provide a capability for local, live internal information and radio news. Various types and sizes of local radio systems exist that can be used to establish a range of services from simple local break away “radio-in-a-box” to a full service facility with local production capability. Some of these systems will include radio transmitter that can provide limited signal distribution without deployment of FRO Three. This system can provide a limited single-source radio service to outlying populations that are not served by FRO One or Two, are not available or would not be appropriate programming sources.

FRO Five: MOOTW Management, Local TV and Network Live Radio. These deployable personnel and systems support the development of an AFRTS management function to oversee dispersed AFRTS operations and will add local television and network-wide live radio capability using organic distribution systems. The capability will establish a network to support operations in an AO comprising a large peacetime engagement of medium to long duration encompassing a large geographic area where the operations commander requires near real-time internal information capability. The system provides network administrative, computer, maintenance, engineering and operations support functions. These functions provide the unified command director of public affairs with AFRTS management expertise not normally available on the public affairs staff. The television service system is designed to produce AO information that can also be fed to the AFRTS Broadcast Center for rebroadcast to DTS/STRTV audiences worldwide.

FRO Six: Theater Satellite Radio and Television Operations (TSRTO). In a major regional conflict where large force deployments are planned the AFRTS Broadcast Center will dedicate one channel of radio and one television channel for use by the UCAP to broadcast directly to the theater of operations. Programming will include time shifting “prime time” so that each 12-hour shift receives prime time programming in the first four and-one-half hours of off time. In conjunction with FRO One or Two, this will provide a virtual network capability to the AO commander and the PAO. It will appear to the audience as if the broadcast was occurring in the AO when in fact it is originating from the Broadcast Center. Initial spots can be unsophisticated radio readers and character-generated (CG) messages on television. If there is a manned radio facility providing theater and operation-specific internal information in place, they will forward copies of all AO specific spots via computer to the Broadcast Center for use initially as television CG messages within the

dedicated TV channel. As with all internal information, they will be developed in coordination with the PAO in the AO. If there is insufficient AFRTS manning in place which would be the case if there were numerous geographically-separated operating locations, the internal information will be supplied, via computer, by the AO public affairs office. Base and component command PAOs will be advised of the scheduling of theater programming and encouraged to provide service-unique spots for use in theater. Service will continue until a significant drawdown occurs, the operation stabilizes to the point where local TV spots are not needed and the presumption of pre-conflict programming will serve the majority of the deployed population or an AO based network begins serving the operation.

Appendix U
COMMUNITY SURVEY

COMMUNITY SURVEY EXAMPLE

I.The area

- A. Geographical description
 - 1. Of areas surveyed--size of cities, counties.
 - 2. Of surrounding area, if pertinent.
 - 3. Climate, topography, annual and seasonal temperatures, rainfall, etc. (one sentence will suffice for each.)
 - 4. Are the industries dispersed or centralized? Attach a map of the Area indicating the location of the principal plants. The map should show the names and numbers of principal streets and highways furnishing access to these plants.
- B. Population
 - 1. Of city
 - 2. Of area.
 - 3. Of labor market area, if different from above.
 - 4. Breakdown by sexes, color, native or foreign born, educational level, percentage of homeowners, etc.
- C. Industrial data
 - 1. Types of industries and number of each, labor force of each, key products of the area, and additional data as considered applicable.
 - 2. Does one type of industry dominate the area? If so, give pertinent information regarding the industry.

II.Manpower

- A. Labor market rating
 - 1. Is department of labor market classification, a,b,c, or d?
 - 2. Include supporting statistical data.
- B. Unemployment
 - 1. Totals and percentages of skilled, semiskilled, and unskilled.
 - 2. What types of skills are most commonly available?
- C. Source of labor supply

1. Compared to the World War II years, what are the reserves of women, handicapped, older-age groups, part-time workers, and school graduates?
 2. Has there been much intermigration to total population?
- D. Occupational classification of area workers. What are the most common occupations of the area? The less common?
- E. Skills in shortage category. List, with numbers of each, if available. Make a comparison of this list with the national shortage list.
- F. Area wage schedules
1. List the wage schedules of major occupations and industries.
 2. How do they compare with national averages?
 3. How do they compare with neighboring areas? With competing areas?
- G. Requirement of defense industry in area
1. Is manpower available for present production schedules? Current planned production?
 2. What skills are lacking for production schedules, both present and future?
 3. Do employers ordinarily use training programs? If so, give some Examples.
- H. Other pertinent information
1. Include current work stoppages, if any; record of work stoppages During last 10 years.
 2. Are workers highly organized? Principal unions?

III. Industrial facilities

- A. Facilities suited or adaptable for defense production.
- B. List facilities with current and World War II products.
- C. Give current and capacity employment.
- D. Give types of machinery.
- E. What defense contracts are held or sought?
- F. Vacant factory space. Describe space and indicate production potential.

IV. Housing

- A. Housing regulations.
 1. Is it a critical defense housing area under public law 96? P. L. 139?
 2. Local rent control?
- B. Housing units available.
 1. Number for sale, including 1, 2, and 3 bedrooms. Price ranges. Are the prices reasonable?
 2. Number for rent, including above information. Apartments available. Number, size, price ranges. Are the rents reasonable?

3. Sleeping rooms available. Number, price ranges. Are the prices reasonable?
4. Building permits issued (in past 12 months)
5. Number for houses--1, 2, 3, or more bedrooms.
6. Number for apartments.
7. If houses, number for rent and contemplated rental prices.
8. Housing units contemplated .
9. Number and sizes. How many bedrooms?
10. Number of these for rent.
11. Estimated rental rates.

C. Builders

1. Adequate number of experienced builders?
2. Do they have trained skeleton force?
3. Can other necessary housing construction workers be secured?
4. Is land available? Under option?
5. Can materials be obtained?
6. What bottlenecks?

D. Building capital.

1. Is capital for the building of housing and rental units readily available? If so, on long- or short-term loans?
2. What are the sources of this capital?
3. Does the community object to construction of more housing units now?

V. Adequacy of housing

For present work force? For expanded production? (quote a figure or percentage, such As peak load in world war ii or 50 percent above present.) This figure should be adequate to cover planned defense expansion known to you at time of Survey.

VI. Other community facilities and services

Discuss each of the following items as to adequacy for the present work force and for an expanded work force; give specific facts for each, as pertinent (yes and no answers are not adequate.)

- A. Water
- B. Electric power
- C. Gas
- D. Sewerage

*Note: for items 1 through 4 above, describe sources of supply, capacity, reserve storage, current use, reserves on hand, plans for expansion--whether on hand or projected.

- E. Transportation: types and numbers
- F. Highway and road systems: are the roads serving the area adequate and in good? What is the present traffic load and the peak capacity of these roads? Describe any unsatisfactory factors. What action is contemplated or considered necessary to assure free traffic movement within the area? (survey requests will furnish, whenever possible, specified information on any industrial and

defense manpower requirement changes under consideration for the area.) Contact with local, state, and federal highway authorities should be made, if necessary, to explore fully this phase of the survey.

1. Schools: number of each type of school, crowding, shifts, new construction, etc.
2. Hospitals: number, number of beds, population per bed.
3. Doctors: number, population per doctor and per dentist.
4. Fire protection: size, ratios, and ratings.
5. Police protection: size, ratios, and ratings.
6. Shopping centers and shopping hours.
7. Recreational facilities: number of each type.
8. Churches: all denominations.
9. Sanitation service (garbage collection).
10. Laundries, dry-cleaning businesses, barber shops, beauty shops, etc.
11. Banking facilities (include arrangements for shift workers).
12. Hotels: number and number of rooms, scale of rates, etc.
13. Restaurants and other eating places.
14. Newspapers: number (morning, evening).
15. Municipal government (form, etc.).
16. Tax rate: local, county, state.
17. Cost of living index: get whatever information is available. Compare local figures to national index.

*Note: include reference material, maps, booklets, etc., If possible.

Appendix V

AUDIENCE SURVEY

Audience surveys systematically gather information about the effectiveness of CI programs and products as they relate to a particular group of people. The commander and the PAO to make decisions about management and direction of an internal information program or product use the results.

PUBLIC AFFAIRS REQUIREMENT

The PAO will conduct a readership survey at least every two years (every three years for the Reserve Components). Coordination with the DOIM for possible computer and analysis support is recommended. Additionally, AR 600-46 can provide information on conducting surveys. The survey will provide data on distribution effectiveness, reader awareness and acceptance, readership and perceived usefulness of standing features and topics covered, and opinions of the value and effectiveness of the publication. Repeated surveys will provide trend data.

The survey may include any or all of the 20 questions listed in the Readership Survey (RCS: SAOSA-223) (app H) in AR 360-81. However, surveys not using these tested questions must be pretested to ensure validity before being used in a survey. Survey respondents will be selected using probability-sampling techniques.

Informal surveys, such as those included in a newspaper or conducted randomly/haphazardly with a few people, are not substitutes for readership surveys. This does not preclude an editor from periodically publishing a coupon or set of questions to solicit informal feedback that is not statistically projectable.

Before administering the survey, the survey managers must coordinate with the agency that will provide response analysis to be sure questionnaires; answer sheets, data entry program, or any other materials are appropriate and usable. Survey conduct may be included in the command's CE publication contract and may also be contracted by the command for Army Funded newspapers, providing funds are available.

When civilian employees are surveyed, PAOs should also coordinate with the civilian personnel officer for local union notification requirements. Completed questionnaires may be analyzed by the local Director of Information Management (DOIM) to provide percentages of responses to survey questions. Where computer support is available (from the local DOIM or DRM), responses will be analyzed using a program such as the Statistical Program for the Social Sciences package. Questionnaires must be constructed using the parameters of available software.

A written discussion of findings and conclusions drawn from the survey will be forwarded within 60 days after the survey is completed through

the local commander, appropriate major command, to HQDA (SAPA-CI-PMN), Room 2E625, The Pentagon, WASH DC 20310-1510.

As a minimum, the report will contain the survey statistics, an analysis of the data, identification of strengths and problem areas (e.g., distribution, more sports, etc.), recommended improvements and changes to editorial policy, and an indication that the commander has reviewed the results.

Surveys may be conducted any time. However, no newspaper's survey report on file at HQDA should be older than 3 years (4 years for the Reserve Components). This allows for the time to conduct a survey.

A copy of the most recent survey will also be submitted with the annual CI Program Assessment Report (DA Form 510-R), unless the survey was previously submitted to the MACOM and OCPA-HQDA.

The PAO will conduct electronic media surveys at least every two years (every three years for the Reserve Components).

SURVEY ADMINISTRATION

Among the more common methods of conducting surveys are the mail survey, face-to-face interview, and telephone interview. The mail survey is the preferred method for purposes of this requirement, although other methods, managed properly, may be used.

Survey respondents will be selected in a totally random manner (e.g., simple random, stratified, or systematic, using probability sampling procedures). Survey managers will select samples, which achieve at least a minimum of a +/- 5 percent reliability (error margin) at the 95 percent confidence level.

Sample sizes shown for the various reliability levels (e.g., +/- 5 percent error margin) are the number of usable responses received, not the number of questionnaires to be sent out. For a population of 5,000, 357 usable responses will accurately reflect, to within +/- 5 percent, what the entire 5,000 member audience would have said, had it completed the survey.

Experience with mail audience surveys shows that they realize an approximate 30 to 35 percent response rate. Therefore, send out at least three times as many questionnaires as are needed for analysis. Remember that incentives encourage responses.

Maybe the local MWR office or similar staff agency could provide bumper stickers, discount coupons, or other incentive for completed responses.

FOCUS GROUPS

Focus groups. One of the most effective ways to learn how CI products are being received is to conduct focus group interviews. Focus group interviews are structured group discussions in which representative members of the audience are brought together to discuss one or more CI products or issues. These interviews or sessions can examine the effectiveness of products or programs, gain suggestions for improving existing products or programs, and determine the need for new products or programs.

The key to effective focus group interviews is proper planning. Focus group organizers must determine who will participate, and what are the

specific objectives of the session (e.g., what topics or issues will be discussed, what specific questions will be asked, what is to be done with the results, etc.). The method of selecting participants should be determined and the location for the meeting secured. While there is no optimal size for focus groups, generally groups of six to 10 individuals are manageable. Group makeup (officer/NCO/enlisted, men/women, military/civilian, active/reserve, retired/family member) depends on the objectives of the session. Generally, homogeneous groups are preferable. Often it will be necessary to hold more than one focus group session to obtain information needed to evaluate a particular CI program or product.

The moderator or group leader should be someone skilled in interview techniques and knowledge about the product or program being evaluated. It is often best not to have a high-ranking individual as the moderator with a group of junior enlisted or young family members, as free flow of information and opinions may be inhibited. The group leader must facilitate the discussion, not serve as an interrogator.

Focus group sessions should be informal. Participants should be encouraged to speak whenever they wish; the moderator should focus the discussion on the topics without being overbearing. If participants agree, it will be useful to videotape their comments for use in evaluating the session.

It is important that all group members understand that their honest opinions are being sought, and that the session is intended as a positive method of improving CI within the organization. No punitive actions should occur as a result of these sessions.

Appendix W

PA Lessons Learned

"What this century's history teaches us is that the Army's real strength is its ability to change and adapt to the period's requirements. Our ability to change was the key to victory in two world wars and a cold war, and it will be the foundation for our future success."

--General Dennis J. Reimer

INTRODUCTION

Explosive developments in information age technology have made the prospect of sharing lessons and ideas across a wide audience a reality today. With ready and easy access to E-mail and the Internet, soldiers can distribute documents, graphics, and photographs with lightning speed.

This appendix is based on an article published in the Center for Army Lessons Learned (CALL) ***News from the Front!***

This section provides public affairs officers (PAOs) with a tool for capturing observations and an outlet for rapid analysis and dissemination of tactics, techniques and procedures (TTPs) to the force. The initial focus is on defining and narrowing the scope of TTPs. It is important for officers and soldiers in the field to clearly understand the process before proceeding to methodologies of collection. The next section provides a structure for developing a narrative product for publication by CALL. Such a product will provide a coherent article of information, which can be quickly used by the force. The final section describes the observation-gathering process. Understanding the process for collecting data will prove invaluable to the operational planner and for producing effective training tools for the future.

DEFINITION AND LIMITS

Focusing the collection effort is central to capturing meaningful observations. Although CALL regularly sends combined arms assessment teams (CAATs) to major exercises and actual operations to gather observations, units from the field, including any public affairs section or detachment, can provide great insight by planning for the collection of information. In fact, only the Army as a whole can make CALL a continuing conduit of information for use by soldiers.

By using the structure and tools described below, units can provide useful TTP by establishing a collection effort as part of the originating operation order (OPORD), with almost no interference with normal operations. Indeed, the tools will enhance planning for future (and remedial) training by incorporating the capturing of TTP into the plan.

TTP are often limited to the specific operation or exercise. The function and use of TTPs are analogous to legal precedents. In law, if given

circumstances of a case are generally similar to a prior case, it is assumed that a judgmental decision for the present case should be the same. However, circumstances in law often have aspects that are unique and must be considered before rendering a new decision. When applying TTP, study prior situations in context and use the lessons prudently.

STRUCTURING THE PAPER FOR USE BY CALL

PAOs at all levels can build upon the after-action review (AAR) process in the plan by producing a publishable document. In almost all exercises, units learn and consequently implement improvement measures. By employing the structure below, units can effectively share information throughout the force -- not only from Combat Training Center (CTC) rotations but also from home-station training and exercises away from the training centers.

Do not view the structure below as a rigid construct. Rather, it should serve as a point of departure for unit writers. Although quantitative material is useful for commanders and researchers, make this document narrative in format. Use graphics to support the narrative, if possible. Bring together data into a cohesive product that other units can readily use without resorting to sifting through large amounts of charts, lists, and disjointed bullets.

- Type of unit. Describe the type of unit the PAO supported (mechanized infantry division, separate brigade).
- Context of event. Summarize the general setting for the exercise or operation. (See Exercises and Actual Operations below. More operational context information is provided in this section.)
- Commander's comments. If possible, the commander can provide a brief (one or more paragraphs) commentary on public affairs operations. Work closely with the unit's executive officer or chief of staff for such input.
- Interaction with PSYOP, Civil Affairs, Signal. As information operations continues to grow and doctrine is further developed, interaction between various agencies will also continue to expand. While ensuring coordination with PSYOP and civil affairs operations, PAOs will continue to recognize the separation in functions of the organizations required by law. Discuss the coordination measures used.
- Media Relations.
- Summary of events. Provide a summary of events. Were press conferences and interviews scheduled and executed? What was the pace of daily operations? What was the routine daily schedule?
- Command messages. In developing this section, answer the following questions in detail: What were the command messages? More importantly, did the command messages come through to print or broadcast? Were any command messages distorted or misinterpreted? How can clarity be improved for the next operation?
- Summary of higher headquarters' public affairs guidance (PAG). Write a one or two paragraph summary of the initial and follow-up PAG received from higher headquarters. (Provide a complete copy as an appendix.) Provide answers to the following questions

following the summary: How did PAG influence operations? Was the PAG clear and meaningful? Were excerpts used to create lower level command messages?

- **Media contacts.** Describe the types and numbers of media contacts. Did the unit encounter numerous print-journalist requests? Electronic requests? Were there patterns in the requests? What could a future media preparation package contain to answer some questions in advance? How did the PAO prioritize media access? Were major outlets afforded more opportunities?
- **Summary of Media Releases.** Summarize media releases in one or two paragraphs. What were the major themes? What media received the releases? Were releases used in stories? Were there any comments from members of the media about the releases?
- **Media Content Analysis.** During and following an event, gather press clippings and, if possible, record electronic media stories about the event. What was the nature of the coverage? What was the tenor of editorial comments? Did command messages get exposure? Was the content of articles generally accurate? What could PAOs do in the future to improve the accuracy of content?
- **Command Information Products.** The command information program in the field is fundamental in the minds of American

CIVIL WAR

"When the (Civil) war entered Pennsylvania, the Philadelphia Inquirer often sold up to 25,000 copies of a single issue to the men in the field. During a lull in the Battle of Cedar Creek in October 1864, observers later remarked that the first thing the men did along the line was to sit down, boil coffee, and pull out their newspapers."

soldiers. And, this phenomenon is nothing new to this culture.

- Because of this intense internal interest in events surrounding the operation and events back home, it is imperative that PAOs adequately address methods and practices used to inform the soldiers. Answer the following questions in the narrative: Did soldiers in the field receive consistent and timely information about operations and world events? What was the distribution method? How was it evaluated for effectiveness? Were reproduction resources available and used adequately?
- **Changes Incorporated in the Tactical Standing Operating Procedures (SOPs).** From the TTPs gathered, what changes will the unit make to the SOP? Briefly describe why the unit is making the change and what mechanisms to put in place to test the effectiveness of the change.

EXERCISES AND ACTUAL OPERATIONS

Operational information is important for the reader to understand the context in which the PAO operated. Provide the following information for

the CALL document to contribute to the reader's full understanding of the event(s):

- Mission - Summarize the unit's mission. (The focus here is not on the PAO's mission, but on the mission of combat headquarters.)
- Commander's Intent - This information is available on the OPORD. By incorporating this information, the reader will have an appreciation of the context in which the PAO operated. Emphasize the components of the intent:
 - Purpose
 - Method
 - Endstate
- New Equipment Used - Was new equipment available and used in the operation? Describe the equipment. Was it useful? What were the additional training requirements for using the equipment?
- New Techniques Used - Did the PAO incorporate techniques which are not described in doctrinal manuals? Describe the techniques employed.
- Structure - What was the structure of the PAO unit or shop? What manning -- required versus on-hand? (Note: Do not provide information that is classified under provisions of unit strength reporting (USR) regulations. Seek to provide a document that is free of classified material.)
- Operational Developments - How did the headquarters change its plan during the operation? How did the change(s) affect PAO operations? The descriptions here will bridge the gap between the original plan and its actual implementation.
- TTPs applied during the mission and for future operations - In bullet narrative, describe TTPs gathered in the operation. The bullets must contain sufficient detail for the reader to understand the situation and application possibilities for future operations. Support the bullets by providing individual observations (see TTP-Gathering Process below) as a combined appendix. The narrative in the base document must stand alone, with the appendix of individual observations providing additional detail.

TTP-GATHERING PROCESS

Units can contact CALL when developing plans for collecting TTP. CALL analysts can provide observer guidance, assist in delineating responsibilities of observers, identify documents or reference for use in developing a collection plan, and describe collection methodology.

- Observations. Individual observations assist in providing the basis for the narrative document described above. Use the form below to capture observations and develop a database for use in narrative development. Provide a copy of each observation to CALL as an appendix to the narrative. (Note: Any document published by CALL will not list units nor individuals by name. Refer to units by level ("the division" instead of "the 101st Airborne Division") and personnel by position ("a brigade chaplain" instead of "Chaplain Jones"). The purpose of CALL publications is to share ideas - not to point fingers.

- Observation Forms. The observation form ([Appendix A](#)) can be used for individual observations. A Microsoft Word version is available. Contact CALL via E-mail at call@leavenworth.army.mil or DSN 552-9571 (commercial 913-684-571) to receive a copy of the document. The document contains key components which aid the researcher in preparing analyses:
- Observer Name - The observer's name is used administratively only. No observer's name will appear in a CALL product.
- Administrative Information - Like the observer's name, unit information is used administratively only. Unit names do not appear in CALL products.
- Observation Indicators - Check all the appropriate blocks.
- Interoperability Indicators - Check all the appropriate blocks.
- Environmental Indicators - Check the appropriate block.
- File Name - Employ a system that differentiates each observation. One method is for observers to use name initials combined with sequence number and date (John Smith's first observation of May 5th would read, jsmay0105). Other systems are acceptable if plainly explained.
- Observation Title - Give the observation a brief, distinct title.
- Observation - In one sentence, summarize the observation.
- Discussion - Provide as much detail as necessary to provide a clear picture to the analyst or future reader. The length of the discussion will vary.
- Lesson Learned - In the context of your observation, provide a TTP.
- DTLOMS Implications - Describe how the observation impacts one or more areas in DTLOMS:
 - Doctrine
 - Training
 - Leadership Development
 - Organization
 - Materiel
 - Soldier Support

Include other media support, such as photos, sketches, or slide presentations in support of the narrative text.

Provide the narrative text, appendices and other material to CALL at the following locations: call@leavenworth.army.mil, or Department of the Army, Center for Army Lessons Learned, 10 Meade Avenue, Fort Leavenworth, Kansas 66027-1350.

In addition to maintaining and expanding a database of information, CALL publishes ***News From the Front!***, and a host of other publications for easy use by the force. Importantly, much of what is available has originated from the field -- from soldiers just like you. ***News From the Front!*** is published six times per year and provides a forum for a wide variety of topics of interest to the field. Other publications, including newsletters, CTC Bulletins, special editions, Handbooks, and more, focus on specific topics. Much of the published holdings of CALL can be found on the CALL website, <http://call.army.mil>, post libraries, or by contacting

CALL at the E-mail address listed above. Various search engines are available on the website to assist researchers.

CONCLUSION

Sharing information is possible with rapid and potentially colossal results. Leaders and soldiers who understand the TTP-gathering process can build plans for the future into every OPORD. By incorporating a plan to collect data and produce a clean narrative product for use by the force, soldiers throughout the Army gain maximum benefit from existing and future advancements in information technology. PAOs can focus on critical elements for successful media relations operations and command information programs in the field. Planners can easily adapt collection plans to exercises or actual operations -- anywhere in the world.

Learning is crucial for continued success on the battlefield. PAO planners must inculcate a practice of gaining a full understanding of the process and incorporating it into future exercises and actual operations.

Appendix X

MEDIA GROUND RULES

OPERATION DESERT STORM GROUND RULES

The following information should not be reported because its publication or broadcast could jeopardize operations and endanger lives:

(1) For U.S. or coalition units, specific numerical information on troop strength, aircraft, weapons systems, on-hand equipment or supplies (e.g. artillery, tanks, radars, missiles, trucks, water), including amounts of ammunition or fuel moved by support units or on hand in combat units. Unit size may be described in general terms such as "company-size, multi-battalion, multi-division, naval task force and carrier battle group." Number and amount of equipment and supplies may be described in general terms such as "large, small, or many."

(2) Any information that reveals details of future plans, operations or strikes, including postponed or cancelled operations.

(3) Information, photography and imagery that would reveal the specific location of military forces or show the level of security at military installations or encampments. Locations may be described as follows: all Navy embark stories can identify the ship upon which embarked as a dateline and will state that this report is coming "from the Persian Gulf, Red Sea or North Arabian Sea." Stories written in Saudi Arabia may be datelined "Eastern Saudi Arabia, near the Kuwaiti border, " etc. For specific countries outside Saudi Arabia, stories will state that the report is coming from the Persian Gulf region unless that country has acknowledged its participation.

(4) Rules of engagement details.

(5) Information on intelligence collection activities, including targets, methods and results.

(6) During an operation, specific information on friendly force troop movements, tactical deployments and dispositions that would jeopardize operational security and lives. This would include unit designations, names or operations and size of friendly forces involved until released by CENTCOM.

(7) Identification of mission aircraft points of origin, other than as land or carrier based.

(8) Information on the effectiveness or ineffectiveness of enemy camouflage, cover, deception, targeting, direct and indirect fire, intelligence collection or security measures.

(9) Specific identifying information on missing or downed aircraft or ships while search and rescue operations are planned or underway.

(10) Special operations forces methods, unique equipment or tactics.

(11) Specific operating methods and tactics, (e.g. air ops angles of attack or speeds, naval tactics and evasive maneuvers). General terms such as "low" or "fast" may be used.

(12) Information on operational or support vulnerabilities that could be used against U.S. forces, such as details of major battle damage or major personnel losses of specific U.S. or coalition units, until that information no longer provides tactical advantage to the enemy and is, therefore, released by CENTCOM.

* Damage and casualties may be described as "light," "moderate," or "heavy."

Glossary

AFRTS— Armed Forces Radio and Television Services

BOD—Broadcast Operations Detachment

C2 protect—command and control-protect—see **command and control warfare**

C2W—**command and control warfare**

command and control warfare—The integrated use of operations security (OPSEC), military deception, psychological operations (PSYOP), electronic warfare (EW), and physical destruction, mutually supported by intelligence, to deny information to, influence, degrade, or destroy adversary command and control capabilities, while protecting friendly command and control capabilities against such actions. Command and control warfare applies across the operational continuum and all levels of conflict. Also called C2W. C2W is both offensive and defensive:

C2-protection—To maintain effective command and control of own forces by turning to friendly advantage or negating adversary efforts to deny information to, influence, degrade, or destroy the friendly C2 system.

civil affairs—the activities of a commander that establish, maintain, influence, or exploit relations between military forces and civil authorities, both governmental and nongovernmental, and the civilian populace in a friendly, neutral, or hostile area of operations in order to facilitate military operations and consolidate operational objectives. Civil affairs activities (1) embrace the relationship between military forces and civil authorities and population in areas where military forces are present; and (2) involve application of civil affairs functional specialty skills, in areas normally the responsibility of civilian government, which enhance conduct of civil-military operations. These activities may occur prior to, during, or subsequent to other military actions. They may also occur, if directed, in the absence of other military operations.

combined operation—an operation conducted by forces of two or more allied nations acting together for the accomplishment of a single mission.

command information—see **internal information**

community relations—establishing and maintaining effective relationships between military and civilian communities through planning and active participation in events and processes which provide benefits to both communities.

community relations program—that command function which evaluates public attitudes, identifies the mission of a military organization with the public interest, and executes a program of action to earn public understanding and acceptance. Community relations programs are conducted at all levels of command, both in the United States and overseas, by military organizations having a community relations area of responsibility. Community relations programs include, but are not limited to, such activities as liaison and cooperation with associations and organizations and their local affiliates at all levels; armed forces participation in international, national, regional, state, and local public events; installation open houses and tours; embarkation in naval ships; orientation tours for distinguished civilians; people-to-people and humanitarian acts; cooperation with government officials and community leaders; and encouragement of armed forces personnel and their dependents to participate in activities of local schools, churches, fraternal, social, and civic organizations, sports, and recreation programs, and other aspects of community life to the extent feasible and appropriate, regardless of where they are located.

GIE—global information environment

global information environment—all individuals, organizations, or systems, most of which are outside the control of the military or National Command Authorities, that collect, process, and disseminate information to national and international audiences.

ground rules—conditions established by a military command to govern the conduct of news gathering and the release and/or use of specified information during an operation or during a specific period of time.

information age—the future time period when social, cultural, and economic patterns will reflect the decentralized, nonhierarchical flow of information.

information architecture—Description and specifications of information systems to include identification of communicators, information transmitted, equipment specifications and network designs. Includes operational, system and technical architectures.

information operations—continuous military operations within the military information environment that enable, enhance, and protect the friendly force's ability to collect, process, and act on information to achieve an advantage across the full range of military operations; information operations include interacting with the global information environment and exploiting or denying an adversary's information and decision capabilities.

information strategy—a synchronized plan for using all available and appropriate methods of communication to achieve specific goals of informing target audiences.

internal information—communication by a military organization with service members, civilian employees and family members of the organization that creates an awareness of the organization's goals, informs them of significant developments affecting them and the organization, increases their effectiveness as ambassadors of the organization, and satisfies their desire to be kept informed about what is going on in the organization and operation (also known as command information).

JIB—joint information bureau

joint information bureau—facilities established by the joint force commander to serve as the focal point for the interface between the military and the media during the conduct of joint operations. When operated in support of multinational operations, a joint information bureau is called a Combined Information Bureau or an Allied Press Information Center.

joint force—a general term applied to a force composed of significant elements, assigned or attached, of two or more Military Departments, operating under a single joint force commander.

joint operations—a general term to describe military actions conducted by joint forces, or by Service forces in relationships (e.g., support, coordinating authority), which, of themselves, do not create joint forces.

JOPES—Joint Operations Planning and Execution System

joint task force—a joint force that is constituted and so designated by the Secretary of Defense, a combatant commander, a subunified commander, or an existing joint task force commander. Also called JTF.

media facilitation—the range of activities such as providing access and interviews that assist news media representatives covering military operations.

media operations center—facility that serves as the focal point for the interface between the military and the media covering an event or operation.

media pool—a limited number of news media who represent a larger number of news media organizations for news gathering and sharing of material during a specified activity. Pooling is typically used when news media support resources cannot accommodate a large number of journalists. The DoD National Media Pool is available for coverage of the earliest stages of a contingency. Additionally, the combatant commanders may also find it necessary to form limited local pools to report on specific missions.

METT-TC—mission, enemy, terrain, troops, time available and civilians

MIE—military information environment

military information environment—the environment contained within the global information environment, consisting of the information systems and organizations—friendly and adversary, military and nonmilitary—that support, enable, or significantly influence a specific military operation.

MPAD--Mobile Public Affairs Detachment

multinational operations—a collective term to describe military actions conducted by forces of two or more nations, typically organized within the structure of a coalition or alliance.

news media representative—an individual employed by a civilian radio or television station, newspaper, newsmagazine, periodical, or news agency to gather information and report on a newsworthy event.

NGO—nongovernmental organization

nongovernmental organizations—transnational organizations of private citizens that maintain a consultative status with the Economic and Social Council of the United Nations. Nongovernmental organizations may be professional associations, foundations, multinational businesses, or simply groups with a common interest in humanitarian assistance activities (development and relief). “Nongovernmental organizations” is a term normally used by non-United States organizations. Also called NGO. See also private voluntary organizations.

PAD—Public Affairs Detachment. The smallest of the PA units.

PAG—public affairs guidance

PAOC—Public Affairs Operations Center.

private voluntary organizations—private, nonprofit humanitarian assistance organizations involved in development and relief activities. Private voluntary organizations are normally United States-based. “Private voluntary organization” is often used synonymously with the term “nongovernmental organization.” Also called PVO. See also nongovernmental organizations.

psychological operations—operations to convey selected information and indicators to foreign audiences to influence their emotions, motives, objective reasoning, and ultimately the behavior of foreign governments, organizations, groups, and individuals. The purpose of psychological operations is to induce or reinforce foreign attitudes and behavior favorable to the originator’s objectives. Also called PSYOP.

PSYOP—psychological operations

public affairs assessment—an analysis of the news media and public environments to evaluate the degree of understanding about strategic and operations objectives and military activities and to identify levels of public support. Includes judgments about the public affairs impact of pending decisions and recommendations about the structure of public affairs support for the assigned mission.

public affairs estimate—as assessment of a specific mission from a public affairs perspective.

public affairs guidance—normally, a package of information to support the public discussion of defense issues and operations. Such guidance can range from a telephonic response to a specific question to a more comprehensive package. Included

could be an approved public affairs policy, news statements, answers to anticipated media questions, and community relations guidance. Public affairs guidance also addresses the method(s), timing, location and other details governing the release of information to the public.

public information—A general term describing processes used to provide information to external audiences through public media.

sustaining base—the home station or permanent location of active duty units and Reserve Component units (e.g., location of armory or reserve center) that provides personnel, logistic and other support required to maintain and prolong operations or combat.

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FM 3-61

COMMUNICATION STRATEGY AND PUBLIC AFFAIRS OPERATIONS



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Preface

FM 3-61 provides guidance on communication strategy and public affairs operations. The Army defines the Public Affairs Program as the guide to conducting public communication strategy for information, command information, leader engagements, and community outreach activities directed toward both the external and internal publics with interest in the Department of Defense.

The principal audience for FM 3-61 is all members of the profession of arms. Commanders and staffs of Army headquarters serving as joint task force or multinational headquarters should also refer to applicable joint or multinational doctrine concerning the range of military operations and joint or multinational forces. Trainers and educators throughout the Army will also use this publication.

Commanders, staffs, and subordinates ensure that their decisions and actions comply with applicable United States, international, and in some cases host-nation laws and regulations. Commanders at all levels ensure that their Soldiers operate in accordance with the law of war and the rules of engagement. (See FM 6-27/MCTP 11-10C.)

FM 3-61 uses joint terms where applicable. Selected joint and Army terms and definitions appear in both the glossary and the text. Terms for which FM 3-61 is the proponent publication (the authority) are marked with an asterisk (*) in the glossary. When first defined in the text, terms for which FM 3-61 is the proponent publication are boldfaced and italicized, and the definitions are boldfaced. When first defining other proponent definitions in the text, the term is italicized and the number of the proponent publication follows the definition. Following uses of the term are not italicized.

FM 3-61 applies to the Active Army, Army National Guard/Army National Guard of the United States and United States Army Reserve unless otherwise stated.

The proponent of FM 3-61 is the Office of the Chief of Public Affairs. The preparing agency is the Army Public Affairs Center, Office of the Chief of Public Affairs. Send comments and recommendations on DA Form 2028 (*Recommended Changes to Publications and Blank Forms*) to Director, Army Public Affairs Center, SAPA-PAC, 4500 Parade Field Lane, Fort Meade, MD 20755-5650; or by email to usarmy.meade.hqda-ocpa.mesg.apac-policy-and-doctrine-division@mail.mil or submit an electronic DA Form 2028.

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Introduction

Army public affairs doctrine is consistent and compatible with joint public affairs doctrine and policy as well as Department of Defense and Department of the Army public affairs policies. It describes the fundamental principles and concepts that provide information to internal and external international and national key actors who have a vest interest and involvement, audiences, and publics.

This publication includes public affairs functions, core tasks, tenets, and characteristics for commanders, planners, and other users of Army public affairs. Public affairs professionals use this manual to plan and execute public affairs strategy, planning, operations, and training.

This publication is based on current force structure and materiel capabilities. It is authoritative but not prescriptive. Public affairs professionals apply their professional knowledge, skills, and judgement when recommending command transformations to the principles in this publication to meet specific situations.

This updated version of FM 3-61 adds discussion of communications strategy within public affairs operations, fully coinciding with the 2020 update of AR 360-1. Revisions were designed with commanders in mind, as the first three chapters are now dedicated to the commander's public affairs program, responsibilities, and communication synchronization. The merge between public affairs and visual information led to the change to include visual activities and planning. In addition, this version incorporated more inclusivity, in alignment with Department of Defense and joint policy and guidance.

FM 3-61 contains 9 chapters:

Chapter 1 provides an overview of communication strategy from the commander's perspective. It first explains commander's communication strategy, outlines the public affairs mission and explains the public affairs mandate under Title 10, United States Code. Chapter 1 details how public affairs activities, core tasks and tenets, and characteristics support the commander and aid mission accomplishment. Lastly, the chapter describes how a communication strategy is integrated into operations through mission command, the operational framework, synchronization, and visual information.

Chapter 2 details methods used by public affairs personnel to advise the commander on the development and execution of an effective communications strategy. The chapter then explains the importance of the commander's guidance to public affairs in developing the commander's communication strategy and establishing the priorities for public affairs operations. Next, the chapter stresses the importance of the commander granting timely access to the public affairs officer. Finally, it describes the relevance of time to public affairs operations in achieving the desired effects.

Chapter 3 addresses the Army public affairs staff and its organization to support commanders and their communication strategies at all levels of command. It describes the roles and responsibilities of various public affairs personnel, including commissioned officers, noncommissioned officers, Soldiers, and Army Civilians, in providing public affairs support to Army operations. The chapter also details the various public affairs organizations and which echelon they are tailored to support.

Chapter 4 examines the relationship between public affairs training and an effective communication strategy. It outlines individual and collective training requirements for public affairs Soldiers and units. The chapter also emphasizes the importance of conducting public affairs training for non-public affairs units and highlights the roles, responsibilities, and methods that public affairs leaders and Soldiers use to provide this training.

Chapter 5 describes how public affairs planning is integrated within the operations process. Planning is an activity of command and control and involves effective use of the military decision-making process. Public affairs planning occurs during all activities of the operations process. The public affairs officer is responsible for producing the public affairs estimate, proposed public affairs guidance, and Annex J (Public Affairs). This chapter introduces the commander's communication synchronization process as a method for

coordinating and synchronizing public affairs activities during operations. Information on how Army public affairs develops and implements a crisis communication strategy and the essential components and process of developing a communication plan are also presented in this chapter.

Chapter 6 provides information on media facilitation. Public affairs provides the capability to assist civilian news media representatives at home station and in a deployed environment. The objective of media facilitation is to support news media agencies' efforts in covering operations to tell the Army's story.

Chapter 7 defines the role of public affairs in managing an organization's communication to various audiences. It examines the concept of segmentation and describes public communication from the perspective of audiences, stakeholders, and key publics. Additionally, this chapter covers basic principles of command information, community engagement, and communication synchronization, while introducing various supporting products. Finally, this chapter concludes with an examination of various regulations, laws, and policies that apply to the conduct of ethical and effective public affairs operations.

Chapter 8 describes the role of public affairs in countering misinformation and disinformation. It defines and describes misinformation and disinformation while emphasizing the importance of countering disinformation effects. This chapter explains disinformation tactics and offers methods for identifying misinformation and disinformation. The chapter emphasizes expedient release of information to counter disinformation and deter adversaries. Finally, the chapter outlines tactics for countering misinformation and disinformation in various media, including social media. It also describes the strategic narrative and how public affairs counters the adversarial narrative.

Chapter 9 defines the role of public affairs in digital media management and social media presence. It first defines digital media management, as it differs from social media maintenance. Additionally, this chapter covers the components of a digital media management strategy. It concludes with a definition of social media and the requirements for establishing a social media presence.

This publication contains seven appendixes. Appendix A details the format and content for public affairs running estimates. Proposed public affairs guidance is discussed in appendix B. Appendix C illustrates and explains the details in Annex J (Public Affairs) to the base order or plan. The communication plan is covered in appendix D. Appendix E gives an overview of media facilitation products. Appendix F details a message map and ways to use it to interact with the media. The final appendix covers public affairs professional development.

The introductory table-1 outlines changes to Army terminology reflected in FM 3-61.

Introductory table-1. New and modified Army terms

<i>Term</i>	<i>Remarks</i>
disinformation	New term and definition.
media representatives	New term and definition.
misinformation	New term and definition.
official information	New term and definition.

PART ONE

Communication Strategy

Part One of this manual is for commanders. Commanders play a critical role in the Army communication strategy. The Army must continue to maintain the trust and confidence of the American people while using information to deter competitors and defeat adversaries. Commanders employ their qualified public affairs personnel, staff, and unit personnel through all phases of the operations process to achieve communication objectives. Communication objectives nest with the Army communication plan. Part One explains which parts of public affairs directly relate to commanders and the role that they play in the public affairs process. Part One provides commanders with the Army's public affairs and visual information structure and organization to give commanders a better understanding of their responsibilities for public affairs and visual information.

Chapter 1

Communication Strategy Overview

COMMUNICATION STRATEGY

1-1. The commander's communication strategy, also known as commander's intent for public affairs, is the communication process and activities for public information, command information, crisis communication, visual information, communication synchronization, and community engagement directed toward external and internal audiences with interest in the Department of Defense (DOD). In public affairs, a *public* is a segment of the population with common attributes to which a military force can tailor its communication (JP 3-61). By implementing the DOD principles of information, Army public affairs (PA) operations help to establish conditions that lead to trust and confidence in the Army and its readiness to conduct multi-domain operations, deter competitors, and defeat adversaries. Commanders conduct PA operations while deployed and at home station in support of those objectives. To ensure synchronization with Department of the Army (DA) and DOD communication efforts, commanders align and nest PA operations with PA guidance from the Office of the Secretary of the Army as distributed through the Chief of Public Affairs. (See DODD 5122.05 for the DOD principles of information.)

COMMUNICATION SYNCHRONIZATION

1-2. Modern technology provides commanders with a greater ability to shape and affect the information environment by implementing their PA and visual information capabilities. The commander's communication synchronization, formerly known as strategic communications or STRATCOM, helps commanders operate in the information environment. *Commander's communication synchronization* is a process to coordinate and synchronize narratives, themes, messages, images, operations, and actions to ensure their integrity and consistency to the lowest tactical level across all relevant communication activities (JP 3-61). Commanders' communication influence internal and external audiences, as communication links information to decisions and decisions to actions. In public affairs, an *audience* is a broadly defined group

that contains stakeholders and/or publics relevant to military operations (JP 3-61). Information imparts structure and shape to military operations for internal and external audiences alike.

1-3. Commanders formulate and communicate their intent to their Soldiers, subordinates, and various audiences to describe the boundaries in which they may exercise initiative while maintaining unity of effort. The qualified public affairs officer (PAO) is the commander's principal advisor and counselor for public information, command information, crisis communications, visual information, communication synchronization, and community engagement. As a skilled communicator and member of the commander's personal staff, the PAO remains closely and continuously involved in all operational phases.

1-4. The PAO normally leads the commander's communication synchronization (CCS) and coordinates themes, messages, narratives, talking points, images, operations, and actions. The PAO implements higher-level communication guidance to the lowest tactical level across all relevant communication activities. The PAO supports the development and execution of the commander's communication lines of effort and objectives. These communication objectives guide the CCS, and conversely, the CCS ensures that the commander's communication objectives nest and align with the broader DOD strategic narrative. (See paragraph 1-20 for more on CCS.)

PUBLIC AFFAIRS AND THE COMMANDER'S INFORMATION ENVIRONMENT

1-5. JP 3-61 defines *public affairs* as communication activities with external and internal audiences. PA is a primary capability supporting the commander's operations in the information environment. Through this capability, the commander provides information to global and domestic audiences in efforts to accurately describe operations or provide information to affected publics in the area of operations. PA provides these audiences with facts explaining why the Army does certain things and conducts specific operations to create a shared understanding and to help those audiences make decisions. Providing credible, accurate, and timely information serves as the best means to counter misinformation, disinformation, and propaganda, which can lead to deterred competitors and defeated adversaries. Maintaining trust, transparency, and credibility is critical when providing public information. Soldiers must never compromise this.

1-6. All information dissemination, regardless of the communicator or medium, is intended to either inform or influence. The intent of the communication guides the commander's decision to either inform or influence the public to achieve the desired end state. Commanders must use PA with various groups providing accurate information within authorities, laws, regulations, and operations security guidelines. Commanders are required to have a public affairs program that includes communication with internal and external audiences.

COMMANDER'S SUPPORT TO THE PUBLIC AFFAIRS MISSION

1-7. Commanders will support their PA teams and staffs when executing the PA mission. The Army PA mission is to fulfill the obligation to keep the American people informed. It helps to establish the conditions maintaining confidence in America's Army and its readiness to conduct operations across the range of military operations. This obligation is established in Title 10, United States Code (USC).

1-8. Implicit in a democratic republic is the right of citizens to know the activities of their elected government. The government, in return, has an obligation to inform its citizens of its activities. This right also applies to the activities of the military as it is established by the Constitution to provide for the common defense and general welfare of the United States.

1-9. One of the most significant conduits through which information is passed to our citizens is the free press guaranteed by the Constitution. Since the nation's founding, the Army has communicated information to the American people through the media in both traditional and emergent platforms.

1-10. Commanders use the science of control—which includes information and communication as part of the commander's command and control system—to conduct operations successfully. When properly employed, PA assists in meeting the commander's communication intent. PA enables the commander to establish and maintain the trust and confidence between the Army and the American people that is essential to the legitimacy and support of the Army as a profession. All stakeholders are affected—whether negatively

or positively—by the flow of information. Army PA contributes to ethical behaviors, respect for laws of war, and the rights of noncombatants.

PUBLIC AFFAIRS MANDATE

1-11. The Secretary of the Army is required to designate a single career field to conduct PA. Commanders, through their PA operations and the communication strategy, are responsible for informing the American people of the Army's mission and goals as well as communicating to the public what the Army does. Informing the American people assists the Army in establishing conditions that lead to the public's understanding and support. Effective PA generates and enables the sustainment of Army credibility with international, national, and local publics, while deterring competitors and defeating adversaries.

1-12. PA is a commander responsibility. PA doctrine and principles of information apply across the range of military operations. At each level of command, PAOs report directly to the commander. Commanders at all levels ensure that PA coordinate and de-conflict planning with other information-related capabilities (IRCs) through command working groups, planning groups, and the CCS.

1-13. Commanders are authorized to designate only DOD-qualified personnel as official spokespersons. Commanders educate and encourage all their Soldiers and DA Civilians to provide timely information appropriate for public release to tell the Army story. By projecting confidence and commitment during engagements and other interactions with families and friends, Army personnel promote public understanding of military operations and activities. (See AR 360-1 for PA spokespersons.)

THE PUBLIC AFFAIRS MISSION

1-14. The structure of the public affairs mission visibly resembles the Parthenon. The overarching public affairs mission consists of the activities, the tasks, and the tenets (see figure 1-1 on page 1-4). PA activities are the guiding functions of the PA mission, which directly enable the commander's efforts to inform and educate audiences in the operational environment. Commanders use PA activities to achieve their communication strategies.

1-15. The tenets form the base of PA mission and represent the best practices or actions by PA staff. The tenets support the core tasks. PA professionals conduct the core tasks in support of the commander's communication strategy to complete the public affairs mission.

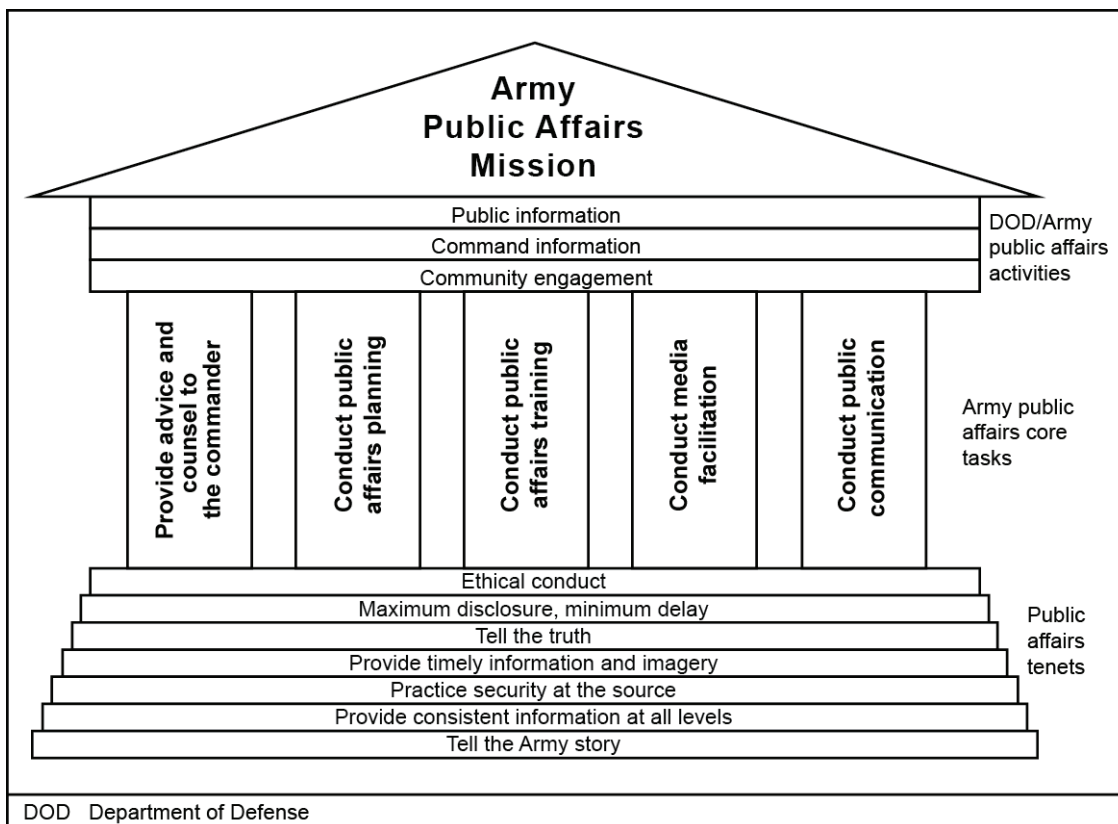


Figure 1-1. Army public affairs structure

PUBLIC AFFAIRS ACTIVITIES

1-16. PA activities support the commander's communication strategy. There are five PA activities: public information, command information, CCS, community engagement, and visual information. Planning and assessment throughout the course of operations support the activities. With today's technological advancements, some PA activities may converge or overlap as information becomes instantly available throughout the information environment. Army PA core tasks and tenets—with communication characteristics—support the five activities. Commanders ensure PA professionals have access to manpower, resources, technology, public networks, and professional equipment to facilitate PA activities.

1-17. PA requirements and actions are inherent in all military activities and are key enablers for managing and delivering information through public communication. Army public information dissemination is consistent with security and DOD principles of information. (See JP 3-61 for the formal definition of public information; see paragraph 2-9 and DODD 5122.05 for the principles of information.) Information technology advances provide new public information opportunities. In addition to the deliberate use of these technologies, commanders must include media engagement activities in fully developed communication plans. Media facilitation activities provide information to international and domestic publics. Commanders and their PA staffs should conduct briefings and interviews, issue statements, respond to queries, arrange for access to operational units, maintain digital communication tools and platforms, and provide appropriate equipment, transportation, and communications support to the media. (See paragraph 1-34 for more on media facilitation. See appendix G for media facilitation products.)

Command Information

1-18. Command information is communication from the commander to help members of the command understand organizational goals, operations, and significant developments. (See JP 3-61 for a discussion of command information.) Although installation and organizational publications provide traditional ways of

communicating with the command, other forms of communication—including digital media platforms—provide quicker and more efficient means of communication. PA professionals understand digital media operations and methods to communicate quickly and effectively with local publics, such as using social media in announcing weather hazards, gate closures, or traffic issues. During a military operation, commanders consider all available dissemination capabilities to communicate releasable details and the role of the military in the operation.

1-19. Commander's intent drives public affairs activities. Command information reflects commander's intent. Command information is an excellent venue to incorporate and reinforce the five essential characteristics of the Army Profession (trust, military expertise, honorable service, *esprit de corps*, and stewardship), the Army Ethics, and the three-certification criteria of Army professionals: competence, character, and commitment. While command information is intended to communicate internally, commanders must recognize that in today's information environment, once information is released, it becomes readily available to all publics.

Commander's Communication Synchronization

1-20. CCS synchronizes communications and information across all echelons to ensure unity of effort and to reduce and eliminate information fratricide. Failing to synchronize communications across echelons results in conflicting messages, reduces credibility, and directly impacts communication effectiveness. It also allows the adversary to undermine the commander's credibility and narrative and, ultimately, the broader DOD strategic narrative. CCS stresses the importance of the human dimension and the effect that the commander's communication objectives have throughout an operational environment.

1-21. CCS is driven by the commander's operations in an operational environment. During operations, CCS provides operational planners insight on foreign audience perception of the operations. This insight helps build a better understanding that should help guide and synchronize operations with supporting words and images that further the commander's objectives. As the primary coordinator of public information within the military, PA plays a key role in—and often leads—CCS to maximize alignment of all communication efforts held by other IRCs. CCS is integral in ensuring that the commander's communication objectives align with the broader DOD strategic narrative. (For more on CCS, see AR 360-1, JP 3-61, and JDN 2-13.)

Community Engagement

1-22. Community engagement encompasses all Army community relations activities regardless of name, activity, or sponsorship. This includes community engagements associated with recruiting, Soldier and leader engagement, or any other terms adopted for the purposes of face-to-face interaction with civilian publics (see DODI 5410.19 and JP 3-61 for community engagement). Army community engagement is a PA activity that supports the relationship between military and civilian communities. PA personnel work collaboratively with groups of people affiliated by geographic proximity or a special interest to enhance the understanding of and support for the Army, its operations, and its activities. All community engagement activities should support the commander's communication objectives. PA assists in identifying key leaders and recommending opportunities for military engagement. Military leaders at echelon have a responsibility to engage key community leaders, including those from other government agencies and nongovernmental organizations (NGOs). (See paragraph 7-31 for more on community engagement.)

Visual Information

1-23. Visual information is visual media with or without sound and is a visual subset of military information used to support communication synchronization, command information, community engagement, public diplomacy, operational planning, decision making, and training. (See JP 3-61 for a formal definition of visual information.) Visual information (VI) enhances information activities with visual context that supports PA themes and messages. VI comes from two sources: directed sources, such as PA activities and combat camera (COMCAM), and derivative sources including manned, unmanned, and remotely piloted platforms that collect imagery.

1-24. Regardless of the mission and conditions under which VI is created, it becomes an official record and may be releasable under the Freedom of Information Act (FOIA), as a request for evidence in litigation cases,

or under other sources of legal authority. In accordance with the *DOD Captioning Style Guide*, all producers, editors and users of VI select, label, and retain VI with complete captions and metadata to describe the content accurately. Users can obtain information about, and access to, imagery from or through central DOD VI information systems. Army PA professionals establish and operate such information systems in compliance with DODI 8320.02. One system is CORE, the Army's official content management system. Central DOD VI information systems provide tools to build a digital presence for organizations and the Defense Visual Information Distribution System (DVIDS), which provides a connection between world media and Service members serving at home.

PUBLIC AFFAIRS CORE TASKS

1-25. The Army Universal Task List (known as AUTL) outlines the Army PA core tasks. Core tasks are key activities PA personnel perform to ensure mission success. PA core tasks make the PA section or unit essential for commanders, staffs, media representatives, and publics. The core tasks, as outlined in the Army Universal Task list, are:

- Provide advice and counsel to the commander.
- Conduct PA and VI planning.
- Conduct PA training.
- Conduct media facilitation.
- Conduct public communication.
- Counter misinformation and disinformation.
- Conduct communications assessments.

Provide Advice and Counsel to the Commander

1-26. The PAO is the commander's senior advisor on communication strategy and PA activities. The PAO establishes and sustains commander and staff relationships and maintains direct and timely access to the commander. The more the PAO understands the operational environment, the more valuable the advice and counsel and the more developed the communication strategy.

1-27. PAOs ensure commanders understand implications of their decisions as well as the strength of public perception. Commanders understand the implications of their actions and decisions on PA. With the evolution of the global information environment, PA activities have become an increasingly critical element in determining the success of support to strategic end states. Commanders recognize the strength and influence of public opinion and perception on the morale, confidence, and effectiveness of Soldiers' abilities to achieve mission success.

1-28. PA professionals assist the commander in providing complete, accurate, and timely information to the public while developing the commander's communication strategy and the plans that achieve that strategy. All information must abide by the constraints of operations security (OPSEC). Providing timely information within such constraints enables the commander to achieve a balanced, fair, and credible information exchange and relationship with the public while deterring competitors and defeating adversaries.

1-29. PA professionals assist the commander in understanding the information needs and expectations of Soldiers, Family members, the home station community, and all other affected publics. Commanders consider these expectations when developing their communication strategies. PA professionals also tailor communication plans to meet the information needs and expectations of the affected publics both foreign and domestic.

Conduct Public Affairs and Visual Information Planning

1-30. PA section or unit conducts PA and VI planning. Communication strategy takes continuous, collaborative planning. Developing a synchronized, cohesive, and comprehensive PA and VI plan is vital in meeting the commander's communication objective requirements. The PA and VI section or unit must articulate and synchronize PA and VI planning within the military decision-making process (MDMP), to include incorporating COMCAM assets where necessary. Commanders incorporate the communication strategy and objectives in the initial plan. The PA section or unit provides detailed analysis of PA activities

beyond article counts and positive, neutral, and negative evaluations. PA professionals also plan for and incorporate traditional, nontraditional, and digital media platforms into the PA plan, analysis, and assessment. (For more on planning, see the discussion beginning in paragraph 5-1.)

Conduct Public Affairs Training

1-31. PA professionals conduct PA training. PA and VI qualification training occurs through the Defense Information School as a joint Service program. PA leaders and Soldiers are trained to follow the operations process of plan, prepare, execute, and assess in unit training and leader development by using unit training management as discussed in ADP 7-0. PA professionals participate in and use the MDMP to plan PA training. (See Appendix H for more of leader and unit development.)

1-32. The training may be group media familiarization, one-on-one interview techniques with subject matter experts, and appropriate use of digital media that can impact the information environment and strategic level actions. Such training applies to all Soldiers within the command. PA professionals must be prepared to train and assist unified action partners. Effective training replicates operational realities and teaches the fundamentals of media and military interactions. Such training emphasizes that the media is a communication channel to internal and external audiences and not an adversary. OPSEC must be a consideration for all PA training.

1-33. Commanders are responsible for establishing a unit public affairs representatives (UPARs) training program in their commands. (Refer to AR 360-1 for UPAR.) Commanders provide Soldiers who have been officially designated and placed on additional duty orders the requisite training in PA. (For more on UPAR training, see paragraph 4-33.)

Conduct Media Facilitation

1-34. PA staff conduct media facilitation. Media facilitation involves planning, preparing, executing, and assessing a media engagement. A media engagement is a specified instance of media interaction between a spokesperson and a member or members of the media. Media interactions occur when the media interacts with Soldiers, often on the battlefield, without PA presence.

1-35. The meaning of the word media has evolved from radio, televised, and print mass communication and now includes information technology and social media. PA staff also evolve media facilitation to support digital media platforms needs and increased nontraditional media interest in Army activities. Facilitation must include traditional, nontraditional, and digital media. PA personnel require access to information and operations centers, along with adequate media facilitation facilities, to assist the media in reporting the Army story properly.

1-36. Media facilitation includes the support of embedded media. Media embeds can be included into a command over an extended period. Commanders ensure that media embeds are credentialed and that they are provided a set of ground rules. (For more on media embeds, see discussion beginning in paragraph 6-45.)

Conduct Public Communication

1-37. PA professionals conduct public communication in all military activities. Through public communication, PA personnel manage and deliver public information. Public communication is communication through coordinated programs, plans, themes, and messages among the Army and international, national, and local publics, as well as competitors and adversaries. It involves the receipt and exchange of ideas and opinions that contribute to shaping public understanding of, and discourse with, the Army. (See Chapter 7 for a discussion of public communication.)

Counter Misinformation and Disinformation

1-38. PA professionals counter misinformation and disinformation. **Misinformation is a subset of information that includes all incorrect information. Disinformation is the deliberate use of incorrect or false information with the intention to deceive or mislead.** Army PA enables commanders to preempt, identify, and counter adversary attempts at malign narrative. PA distribute legitimate, timely, and truthful

information regarding Army operations, equipment, and personnel across multiple platforms within OPSEC constraints.

1-39. Commanders play a critical and strategic role in countering misinformation and disinformation. Misinformation, disinformation, or a combination of both is not an adversary but a tactic used by adversaries. Adversaries use information as propaganda to minimize the effect of military operations and programs. To combat this use, commanders must understand that the release of timely and accurate information is paramount. While conducting this task along with conducting communication assessments, PA personnel can identify the adversarial narrative. With an identified narrative, the commander can shape the communication objectives to counter the narrative through timely and accurate information.

Conduct Communications Assessments

1-40. Commanders and staff conduct communications assessments. Communications assessments follow the general assessments process discussed broadly in ADP 5-0 and in detail in FM 6-0. ADP 5-0 provides overarching guidance on assessment. However, commanders have unique considerations for PA assessment. Proper PA assessments may require additional resources not readily available within the command. Additionally, commanders must examine legal authorities when considering aspects of assessing an operational environment as it relates to use of capabilities not typically available within the PA staff.

1-41. Commanders and staff conduct communications assessments throughout an operation and measure whether the unit achieved communication objectives as planned. These assessments inform the commander's decision on whether or not to change course. Commanders and staff continuously assess an operational environment and the progress of the commander's objectives within it. The PAO and other staff representatives monitor the operational environment, which influences the outcome of operations and then provide the commander timely information needed for decisions. Planning for the assessment identifies key aspects of the operation in which the commander is interested in closely monitoring and where the commander wants to make decisions. The assessment identifies and evaluates the information environment relevant to the commander's intent, mission, area of operations, and echelon of unit. It includes an examination of the physical and social infrastructure from a PA perspective. (For more information on assessments, see paragraph 5-64.)

PUBLIC AFFAIRS TENETS

1-42. Effective application of the PA tenets follows the DOD principles of information and can result in more effective and efficient communication activities, improved relationships with the media, successful countering of misinformation and disinformation, deterrence of competitors, and defeat of adversaries. The tenets describe best practices. Successful PA personnel review and appropriately apply these tenets during all stages of PA activities, PA core tasks, and the operations process. (See DODD 5122.05 for the principles of information.)

Practice Ethical Conduct

1-43. The practice of PA centers on truth, trust, and credibility. To be effective in a profession that relies heavily on institutional and individual credibility, effective PA professionals require a solid ethical foundation. The Army Profession is built on trust, and PA professionals are charged with establishing conditions that lead to trust and confidence in America's Army in peace and war.

1-44. Lapses of ethical judgment often become controversial media topics, garner negative publicity, and significantly damage reputations and credibility. As a result, these lapses potentially result in the loss of trust. Adversaries may exploit and magnify any loss of discipline by Soldiers through propaganda and the media. Such negative publicity damages the Army's reputation; adhering to the tenets of PA can minimize the effects of negative publicity and maintain public trust and confidence in the Army.

1-45. PA professionals communicate to internal and external audiences the importance of careful and responsible management of the Army Profession. These professionals communicate with their actions by adhering to the highest standards of military ethics and morality. This stewardship helps solidify the trust among the American people, host nations, and the Army.

1-46. To maintain credibility, PA professionals abide by journalistic ethics and can identify when media representatives fail to adhere to fair and balanced reporting. Although PA professionals cannot control the media, PA professionals must be accurate and accountable. They treat all media representatives with respect, integrity, and equal consideration to maintain credibility.

Provide Maximum Disclosure, Minimum Delay

1-47. The Army has an obligation to keep its publics informed in a thorough and timely manner. Open and independent reporting is the norm. Commanders grant media representatives access to units, activities, and operations within the bounds of OPSEC. **Media representatives are individuals representing civilian radio or television station, newspaper, magazine, periodical, independent blog, or news agency to gather and report on a newsworthy event.** Commanders delegate authority to PAOs to release information to the public as stipulated in AR 360-1. PAOs avoid withholding or delaying the release of information solely to protect the installation, command, or the Army from criticism or embarrassment. Being open and forthcoming enhances the Army's credibility and trustworthiness.

Tell the Truth

1-48. PA professionals release only accurate information in a timely manner. The long-term success of a commander's communication strategy through PA activities depends on maintaining the integrity and credibility of officially released information. Deceiving the public undermines trust in the Army. Accurate, balanced, and credible presentation of information leads to public confidence in the Army and the legitimacy of Army operations. Attempting to deny unfavorable information or failing to acknowledge its existence leads to media speculation, the perception of a cover-up, and the loss of public trust. Commanders, along with their PAOs, should address issues openly and honestly as soon as possible.

Provide Timely and Accurate Public Affairs and Visual Information

1-49. Commanders remain prepared to release timely, factual, coordinated, and approved information and imagery. The public release of information and imagery has a powerful effect on friendly, neutral, adversary, and enemy decision-making cycles and perceptions. The source that releases more timely and accurate information and imagery often controls the information environment. As part of the commander's communication strategy, PAOs establish a timely and accurate process for the release of information.

Practice Security at the Source

1-50. All Army personnel must be aware of OPSEC and are responsible for safeguarding sensitive information. Therefore, it is critical that the appropriate PA section approve official information and imagery prior to public release. (Refer to AR 360-1 for public release of information.) **Official information is information that is owned by, produced for or by, or is subject to the control of the United States government.** OPSEC applies to media interviews and the sharing of information and imagery with families or friends to include email and digital media platforms. Commanders ensure PAOs and PA noncommissioned officers (NCOs) responsible for the release of information are OPSEC level II qualified. (See AR 360-1 for security of information.)

Provide Consistent Information at All Levels

1-51. The public often receives information simultaneously from multiple sources. The Army's and the commander's credibility are jeopardized if the information conflicts. PAOs need to appropriately coordinate information and imagery and ensure it complies with command guidance before releasing it to the public. The CCS supports consistent information at all levels.

Tell the Army Story

1-52. The commander's communication objectives—through the communication strategy—aim to tell the Army story accurately, honestly, and completely to as many publics as possible. The commander tells the story through a timely release of information to internal and external audiences and digital media platforms. The civilian media serve as a link between the Army and the American public. That link is critical as the

Army cannot carry out its mission without public support. Commanders recognize the legitimate role of news media and digital media platforms in reporting military operations and accept the presence of these platforms wherever the U.S. military operates.

COMMUNICATION CHARACTERISTICS

1-53. Communication characteristics are those qualities, behaviors, skills, abilities, and knowledge that directly and positively impact the success of PA and the Army communication strategy. PA leaders measure characteristics objectively and improve PA professionals through mentoring and training. Communication characteristics help PA professionals focus attention on key command goals, improved credibility and public understanding and support.

1-54. PA professionals must—

- Exercise a proactive approach to determine second- and third-order effects and develop plans to shape possible outcomes.
- Exercise disciplined initiative by adapting to operational conditions through flexible and agile creative thinking to solve problems.
- Comprehend the strategic vision by seeing the big picture and strategic implications of tactical events.
- Use sound judgement in recommending appropriate communication objectives to the commander.
- Create a collaborative understanding of the impact of PA activities on an operational environment, mission, and operations.
- Enhance relationships and communication through cultural awareness by understanding the cultural differences among military, U.S., international, competitor, and adversarial publics and knowing how PA activities impact each differently.
- Apply ethical reasoning to make informed choices and provide counsel to the commander when faced with tough issues and ethical concerns concerning the ramifications of an organization or leadership's actions.

PUBLIC AFFAIRS AND THE JOINT INFORMATION FUNCTION

1-55. PA operations are conducted, using proper authorities, as an information function. Synchronizing PA operations with military IRCs helps the commander shape the information environment. The *information environment* is the aggregate of individuals, organizations, and systems that collect, process, disseminate, or act on information (JP 3-13). The information environment consists of the physical, informational, and cognitive dimensions.

1-56. The complexity of the information environment creates many challenges for commanders. The global expanse of the information environment and technology enables news reports and analyses to inform public opinions and decisions concerning military operations rapidly. Information is constantly being gathered and disseminated as evidenced by the continuous news cycle as well as by digital media platforms with a seemingly unimportant post or update going viral. Geographic boundaries no longer limit information dissemination; therefore, information about an event in the United States can directly affect operations in a theater of operations halfway around the world and vice versa. Misinformation and disinformation can negatively affect U.S. operations and must be considered in the CCS.

1-57. PA professionals analyze information across traditional and digital media platforms to assess effectiveness of Army communication and to identify risks created by misinformation, disinformation, or both. Identifying misinformation and disinformation that places commander objectives at risk is a critical PA task within the information function. Public information about Army activities may have positive or negative effects in the information environment. Technological advances have made collection and dissemination of information available to broader and more diverse publics faster and on a larger scale. The American public, allies, competitors, and adversaries view military operations in real-time, which results in the increased analysis, critique, and editorial commentary by the media and publics.

PUBLIC AFFAIRS SUPPORT TO MULTI-DOMAIN OPERATIONS

1-58. Information requirements exist across all domains and during all operations. Army PA, as a unique IRC, supports the joint force in multi-domain operations by enabling commanders to identify, target, and respond to near-peer adversaries' efforts to fracture alliances, partnerships, and resolve. Multi-domain operations assert that near-peer adversaries—in a state of continuous competition with the United States, its allies and partners—seek to weaken resolve by exploiting conditions of an operational environment. An *operational environment* is a composite of the conditions, circumstances, and influences that affect the employment of capabilities and bear on the decisions of the commander (JP 3-0). Within the information environment, modern near-peer adversaries use misinformation and disinformation tactics in both the competition and armed conflict of multi-domain operations, and distribute the resulting false narratives through traditional and digital media platforms.

1-59. Information is the pervasive backdrop to an operational environment and is continuously changing. To help shape a conducive information environment, commanders use PA and design a communication strategy engaging key publics within an operational environment and throughout the competition and armed conflict of multi-domain operations. Army leaders plan, prepare, execute, and assess operations by analyzing an operational environment. Commanders and staff synchronize PA with the operations process.

1-60. In multi-domain operations, PA seeks to counter adversarial misinformation and disinformation by actively conducting and facilitating communication among the Army and international, national, and local publics through coordinated programs, plans, themes, and messages.

1-61. The perception of the Army and its conduct of operations is as important to the success of an operation as decisive action on the battlefield. Through proper planning, integration, synchronization, and coordination, Army units conduct PA operations to help address the five problems the Army confronts in multi-domain operations: compete, penetrate, disintegrate, exploit, and re-compete.

1-62. PA staff, when directed or required, coordinates and often leads using military IRCs and other staff components through CCS in support of multi-domain operations. Effective PA personnel thoroughly understand the essential characteristics of the Army Profession, the fundamentals of Army operations, and the strategic context within which the Army conducts multi-domain operations. PA leaders recognize the links tying public opinion, political decision-making, and the National Defense Strategy together as well as the Army's application of the multi-domain operations concept to fulfill its role to the Joint Force.

PUBLIC AFFAIRS AND INFORMATION OPERATIONS

1-63. PA and information operations (IO) both directly support military objectives, but their activities differ with respect to commander's intent, scope, and audience and are governed by separate procedures. PA is the principal capability for keeping the American public and Army informed and educated. IO is the integrated employment of IRCs in concert with other lines of operation to influence, disrupt, corrupt, or usurp the decision making of adversaries and potential adversaries while protecting our own. (See JP 3-13 for more on IO.)

1-64. Commanders, through non-PA information-related activities, communicate to select, non-American publics to change attitudes, beliefs, and behavior. In tactical and operational environments, and when appropriate, staff sections in the IO working group conduct synchronization and coordination of communication objectives. The working group conducts coordination in which PA and command-designated IRCs participate during tactical and operational missions; however, the capabilities retain their own distinct identities and staff organization.

1-65. PA Soldiers participate in the IO working group by continually assessing the information environment to determine the degree and nature of media coverage. They take steps to correct misinformation and propaganda. They also seek to leverage other military IRCs—such as COMCAM or civil affairs operations—to provide greater accuracy, context, and characterization to the information. Additionally, PA operations provide reinforcing messaging for other IRCs.

1-66. The commander designates IRC capabilities in the IO working group to shape an information environment. Mission requirements determine if a staff for each IRC operates independently or with other

IRCs staffs. Based on command guidance and assessments, the coordination through the working group allows for message alignment, reinforcement, and consistency in support of the commander's overall concept of operations. The commander resolves any differences in courses of actions developed in the IO working group.

1-67. The PA and commander's designated IRCs establish rapid processes robust enough to quickly understand, shape, engage, and assess information through dynamic engagements of opportunity as well as to make changes to the planned engagements or objectives. Engagements of opportunity could have been identified too late, or not selected for action in time to be included in deliberate engagements. Subjects engaged as part of dynamic engagements are previously unanticipated, unplanned, or newly detected. Examples range from crisis communication to command information response. Units develop a tiered information engagement model that supports deliberate and dynamic engagements through collaborative efforts. Units provide the appropriate authorities to each commander for each activity of an operation or engagement.

1-68. The PA and commander's designated IRCs establish a process that enables the commander and staff to plan for deliberate engagements based on planned missions and objectives. Deliberate engagements are known events for the unit. Examples range from command information engagements to community engagements.

1-69. The PA and commander synchronize the unit's IRCs and resources toward engaging the high pay-off engagement list and commander's priorities in information engagement. The high-payoff engagement list and command response matrix are created during the Army targeting methodology's decide function. They use this list and matrix during the rest of Army targeting methodology to provide the overall focus and set priorities for information engagement planning. The plan addresses priorities for each activity or critical event of an operation. Engagement selection standards (developed in the command response matrix) address accuracy or other specific criteria that units must meet before engagements can occur. The decisions made are reflected in visual products. The command response matrix, approved by the commander, addresses which, how, and when subjects will be engaged, and the desired effects. (See FM 3-13 for details on Army targeting methodology.)

PUBLIC AFFAIRS IN THE OPERATIONS STRUCTURE

1-70. Other IRCs—military information support operations (MISO), civil affairs, military deception operations—may communicate to deliberately influence, persuade, coerce, or spark compliance or thought reform. (See FM 3-53 and JDN 2-13 for more on IRCs.) Commanders who seek to use PA as an influencing instead of an informing capability risk the public's perception of participation in propaganda.

1-71. The operations structure—the operations process, combat power, and the operational framework—is the Army's common construct for unified land operations. PA personnel plan, coordinate, and synchronize activities during CCS as part of the operations process. (See chapter 5 for PA and the operations process.) PA activities help Army leaders communicate their visualization of operations in time, space, purpose, and resources.

1-72. Commanders and staff incorporate PA into every activity of operations. PA planners actively contribute to the operations process and Army design methodology. PA planning begins with the receipt of the mission. PA leads CCS, coordinating with other IRCs in an operational environment during the MDMP. PA provides the following products during CCS:

- Media analysis products.
- Media engagement plan.
- Higher headquarters communication plan.
- Incorporated themes and messages from higher headquarters.
- Command information plan.
- Key leader engagements and outreach activities.
- Public communication and digital media plan.

1-73. The result is the development of Annex J (Public Affairs) and the commander's communication strategy for inclusion into paragraph 3 of the operation order. The PA staff continually assesses the

information environment to determine the degree and nature of media coverage. (Chapter 5 discusses PA planning. See appendix D for more on Annex J [Public Affairs].)

PUBLIC AFFAIRS SUPPORT TO DEFENSE SUPPORT OF CIVIL AUTHORITIES

1-74. PA supports defense support of civil authorities (DSCA) through its PA assessment. DSCA operations are vital aspects of the military's service to the Nation. DSCA is support provided by Federal forces and assets for domestic emergencies, law enforcement support, and other domestic activities, or from qualifying entities for special events. (See DODD 3025.18 for details on DSCA.) A *public affairs assessment* is an analysis of the news media and public environments to evaluate the degree of understanding about strategic and operational objectives and military activities and to identify all levels of public support (JP 3-61). PA staff will monitor and assess public opinion, media coverage, and sentiment analysis.

1-75. Critical differences exist between operations conducted in DSCA and operations conducted outside the United States. Differences include the roles of civilian organizations; the relationship of military forces to federal, state, tribal, and local agencies; and the legal authorities under which military forces operate. Military forces train to understand the domestic environment so they can employ appropriate military capabilities efficiently, effectively, and legally.

1-76. State and local officials provide information and directions to the public (such as evacuation and shelter in place) during DSCA. Each state determines who has the authority to provide directions to the public (such as the sheriff, mayor, or judge). In no case does the Army take the initiative to provide directions to the public. Army agencies may assist the appropriate authorities with disseminating information as long as the instructions properly attribute the source. For example, "The mayor has directed a mandatory evacuation for the city" attributes the source of the information to the mayor.

1-77. Army PA personnel coordinate PA activities and comply with PA guidance from the media operations center (MOC) or, if one is not set up, the joint field office. Normally the incident PAO, press officer, public information officer, or MOC releases general information to the public and media. Supporting agencies may assist in the release of information but are limited to providing specific agency actions only. For the Army, this means PA activities are limited to supporting the primary agency or focusing on Army actions that support the incident (in coordination with the primary agency). In no case will Army PA activities place the Army in the forefront; the PAO portrays the Army as a partner and participant in the incident response.

1-78. The PAO ensures Soldiers are aware of the potential consequences associated with questionable on-camera behavior or speaking to the media without authorization. PAOs complete mandatory training posted on the Army Social Media website as required.

1-79. DSCA operations often times create a higher demand signal for VI. These images routinely depict displaced persons and content, which PAOs review before posting. PAOs carefully select and seek legal guidance when considering releasing Army photos during DSCA operations.

PUBLIC AFFAIRS SUPPORT TO JOINT, MULTINATIONAL, AND INTERAGENCY OPERATIONS

1-80. Although the Army may operate as an independent element, it normally conducts operations as part of a joint, multinational, or interagency team. The Army regularly works with other military forces (both other Services and unified action partners), non-DOD government agencies, and NGOs.

1-81. The DOD principles of information do not differ in a joint environment from an Army operation. The primary goal still aims to expedite the flow of complete, accurate, and timely information about the activities of joint forces. Joint PA includes planning, media facilitation, execution of internal and external information strategies, and, when appropriate, training and community engagement. Unless delegated to subordinate commanders, the Office of the Secretary of Defense for Public Affairs is the coordination function for military communication synchronization processes and retains sole release authority of public information concerning all DOD personnel, assets, and operations. (See JP 3-61 for joint PA coordination.)

1-82. Many radio, television, and internet (including wireless) systems have minimum spectrum requirements. These systems might have access to public networks through commercial means or indirectly through tactical networks. The PA office ensures the systems used by PA teams are mutually compatible with the intended electromagnetic environment. (See DODI 3222.03 for more on this compatibility.) To ensure compatibility, PA personnel conduct a spectrum supportability risk assessment (SSRA) for all spectrum-dependent systems. (See DODI 4650.01 and AR 5-12 for using the electromagnetic spectrum.) PA personnel submit SSRA findings to Headquarters, DA, Chief Information Officer, G-6, Army Spectrum Management Office. Additionally, PA personnel complete and submit a DD Form 1494 (*Application for Equipment Frequency Allocation*) to begin the equipment certification process, as required for all spectrum-dependent systems, prior to employment within the United States and Possessions or worldwide. (See AR 5-12 regarding DD Form 1494 and SSRA requirements.)

Chapter 2

Advice and Counsel to the Commander

COMMANDER'S PRIORITIES AND GUIDANCE

2-1. The commander has a responsibility to ensure the American people and Army personnel remain informed and educated on the operations and activities of the Army. The PAO is the commander's key advisor on public communication and communication strategy. Commanders should expect competent PA professionals to provide timely and accurate advice and counsel to ensure that the trust and understanding of the American public is not lost.

2-2. As the face of the organization, the commander is the most visible and credible spokesperson for the command, guiding and integrating successful PA operations. The PAO, the commander's senior advisor on PA activities and communication strategy, is a member of the commander's personal staff. This officer continuously maintains direct and timely access to the commander and other senior-level staff.

2-3. The commander not only ensures the PAO understands the commander's intent for PA activities and communication strategy but also establishes the direct relationship between the commander and PAO. The PAO, in turn, has responsibility to stress the importance of communication and a trusted relationship between the commander and PAO. Failure to convey the importance of a trusted relationship between the commander and PAO may hinder the ability of the commander to communicate timely and accurate information, which can develop into crises that facilitate loss of trust and confidence in the commander and the Army.

2-4. The commander conveys priorities and guidance first hand to ensure the PAO has the necessary requirements to begin developing the commander's communication strategy. Communication plans require command support and involvement. The PAO helps to ensure the commander understands the importance of the commander's role in communicating to internal and external audiences and at times acting as the spokesperson.

2-5. As the primary spokesperson for the command, the commander relies on advice and counsel from the PAO. When communication opportunities arise, the PAO identifies those opportunities and advises the commander on the proposed approach. The commander may sometimes be the subject matter expert required to speak to the public through the media, digital media, or directly at an event. Preparation is usually necessary to ensure the commander can engage effectively in media interviews, engagements, or a speech to an internal audience. (For more information on commander's role, see Chapter 4.)

TIMELY ACCESS

2-6. The commander has numerous staff and limited time available. Nevertheless, the commander should always grant the PAO immediate access using a set of predetermined criteria. Commanders expect the PAO to engage early, articulate the need for timely access, and identify potential risks. Gaining an understanding and assisting in developing the commander's critical information requirements, essential elements of friendly information, and friendly force information requirements is a first step in establishing the criteria for timely access to the commander.

2-7. Commanders expect the PAO, as a member of the personal staff, to work in a command structure that includes a deputy commander, chief of staff, and an executive officer. To develop a sound working relationship with the staff, the PAO communicates regularly with these officers. PAOs gain appropriate access to commanders without circumventing the responsibility and authority of this key leadership element.

INFORMATION RELEASE

2-8. Commanders expect the PAO to advise them on the importance of timely release of public information. The timely release of public information has positive factors as well as negative consequences that may occur when the information appears withheld or delayed unnecessarily. The PAO understands that decisions regarding the timely release of information often depend on the situation.

2-9. The DOD ensures a free flow of news and information to the news media, the American public, the internal audiences of the DOD, and other relevant audiences. The security restraints in DODI 5200.01 and any other applicable statutory and regulatory requirements or exemptions impose limits. DODD 5122.05 explains the DOD principles of information. See figure 2-1 for the DOD principles of information.

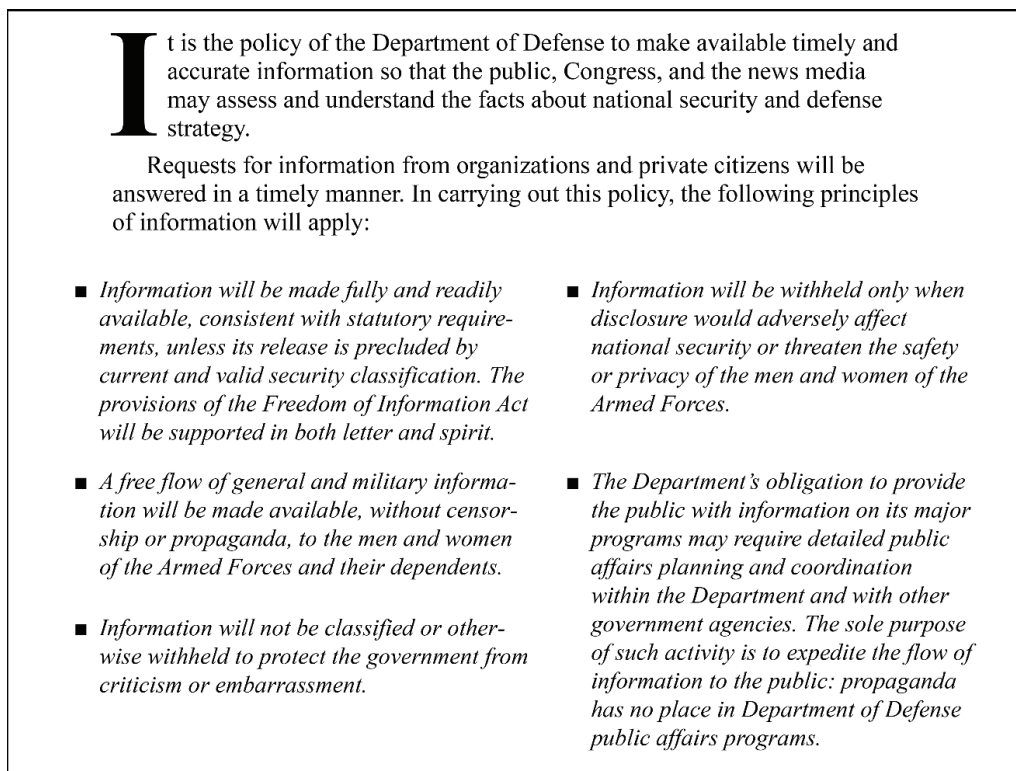


Figure 2-1. DOD principles of information

2-10. Commanders consider the following regarding releasing timely and accurate public information:

- Early release of information sets the pace and tone for solving a problem. It also ensures that PA presents facts accurately from the beginning, rather than attempting to correct the record later. PA professionals ensure they have correct facts, since inaccurate information risks doing more harm than releasing information too slowly.
- Uncontrolled release or leaking of information jeopardizes trust and credibility.
- Information released as early as possible from the correct source assists with accuracy.
- Information released prompts meaningful dialogue and public involvement.
- Information released can prevent similar situations elsewhere.
- Information released counters or mitigates misinformation and disinformation.
- Information released builds public trust and confidence in the command.
- Information released prevents perceptions of scandal or cover-up.

2-11. PAOs coordinate the release of information with the proper release authorities. PAOs reference AR 360-1 and pertinent DOD issuances and directives for guidance when preparing to release information. Implementing this guidance ensures information released to the public is done so correctly.

Chapter 3

Public Affairs Staff and Organization

STAFF AND PERSONNEL

3-1. PA personnel—including commissioned officers, NCOs, and DA Civilians—stand ready to support the commander with knowledge of communication strategy, the information environment, and potential impacts of PA on operations. Ideally, PA leaders are among the most informed in the command. PAOs must be aware of all aspects of an operation. They prepare to convey information and determine how publics may perceive the releasable information.

3-2. PA staffs at all echelons are small and often require augmentation to conduct PA activities, fulfill PA tasks during training, and complete objectives that are essential to the mission. PA planners assess requirements and plan for and request necessary personnel to provide the commander with the effective capability required. Linguists and cultural advisors often work PA activities and are a required consideration during planning. Knowledge of Army PA personnel, staff, units, organizations, and PA activities is necessary to conduct effective PA operations and communication strategies.

PUBLIC AFFAIRS OFFICERS

3-3. Army PAOs are either commissioned officers of the Army primarily in the rank of major or above, or DA Civilians selected and specifically educated, trained, and experienced as PA professionals. PAOs serve on the commander's personal staff with primary responsibilities to assess the information environment, advise senior leaders on PA issues, develop the commander's communication strategy, assist leaders in making well-informed decisions, and translate those decisions into effective PA operations. PAOs develop PA themes and messages for the command that nest with Army messages, plan and execute communication strategies to achieve desired objectives, and evaluate the effectiveness of PA programs. The PAO analyzes the situation, anticipates issues, assesses implications, and develops comprehensive operations to meet the news and informational needs of internal and external audiences. PAOs also facilitate public communication with international and domestic news media. They lead and supervise CCS, public information, engagements, and command information. PAOs oversee PA and VI specialists who create PA and VI products for print, broadcast, and digital media platforms.

3-4. PAOs provide commanders with the expertise and guidance to conduct PA activities through communication strategy and enhance the commander's ability to acquire, process, and deliver information. Duties of the PAO can include the following:

- Maintain the trust of the American public.
- Develop the commander's communication strategy.
- Lead CCS.
- Communicate to deter competitors and help defeat adversaries.
- Develop and execute communication plans.
- Advise senior leaders on the implications of unit actions within the information environment.
- Provide media training for the unit.
- Supervise PA staff.
- Communicate news and information to the internal military audience.
- Respond to media queries.
- Plan and coordinate community events.
- Evaluate the effectiveness of the communication strategy.

PUBLIC AFFAIRS AND COMBAT CAMERA SOLDIERS

3-5. COMCAM NCOs are experts on VI. They supervise, plan, and operate photo, video, and illustration production equipment during operations. The COMCAM junior enlisted Soldier is trained to operate electronic still, video, and audio acquisition equipment to document combat and noncombat Army, joint, and coalition operations. They are trained to operate electronic multimedia imaging equipment and to create illustrations, layouts, posters, graphs, and charts in support of battlefield operations. They are trained and equipped to create VI products to document combat, special operations forces, military intelligence, medical, training, and other functions. They fulfill unit-level maintenance on assigned equipment and operator maintenance on assigned vehicles and generators.

3-6. PA NCOs are experts on the PA functions, core tasks, tenets, and characteristics. NCOs provide the essential functional area expertise and continuity required for successful PA programs and activities. PA NCOs work closely with the PAO. In the absence of a PAO, a PA NCO may serve as the commander's senior PA advisor. Therefore, PA NCOs must be prepared to perform the duties of a PAO.

3-7. The military occupational specialty (MOS) 46S Public Affairs Mass Communication Specialist may be assigned to brigade combat teams, multifunctional brigades, divisions, corps, and theater army staff sections, special operations units, separate PA units, and broadcast communications under the Defense Media Activity. There, they participate in and help execute, supervise, and administer Army PA programs and activities. They are trained and equipped to support the planning, coordination, execution, and supervision of PA operations that seek to inform identified key publics. These specialists use modern technology, equipment, and information systems to collect, process, and rapidly deliver multimedia products supporting public information, command information, communication strategy, and community engagement initiatives. They also fulfill media facilitation responsibilities, conduct PA training, and release information upon approval of the PAO. Finally, they fulfill unit-level maintenance on assigned equipment and operator maintenance on assigned vehicles and generators.

3-8. The MOS 46Z Chief Public Affairs NCO is a sergeant first class and above who supervises personnel performing the duties of PA mass communication specialists. This NCO advises the commander and PAO on all matters pertaining to PA, including command information, public information, and community relations. This NCO also supervises Army PA programs and VI in support of PA operations. The Chief PA NCO advises on accuracy, propriety, timing, and relative importance of information for release to the public and recommends methods of communicating information. This NCO develops, coordinates, and supervises plans and policies pertaining to PA organizations, training, and operations. The Chief PA NCO also serves as the principal NCO in PA and broadcast organizations.

DEPARTMENT OF THE ARMY PUBLIC AFFAIRS CIVILIAN CAREER PROGRAM 22

3-9. Career program (CP) 22 civilian employees perform critical roles in the Army's PA mission. CP 22 includes six occupational series applicable to the PA and communications media professions: 1035 Public Affairs; 1082 Writer-Editor; 0301 Miscellaneous Administration and Program Series (Strategic Communications and Legislative Affairs); 1001 General Arts and Information Series; 1087 Editorial Assistant Series; and 1099 Information and Arts Student Trainee Series.

3-10. PA civilians serve across the Army in support of the DA, Army commands, Army Service component commands, direct reporting units (DRUs), field-operating agencies, and other positions requiring professional communicators. They work as PAOs, communication planners, media relations officers, writers and editors, digital content managers, visual arts specialists, speechwriters, congressional affairs specialists, strategic communicators, and editorial assistants. CP 22 professionals develop and maintain working relationships with media representatives as well as serve as liaisons with academic, civic, business, and government organizations.

3-11. The CP 22 workforce has a centralized training and development program that provides sequential and progressive training for communication functional specialties and in leadership, supervision, and managerial development. The CP 22 Army Civilian Training, Education and Development System (ACTEDS) plan provides general information and guidance on managing the Public Affairs and Communications Media Career Program. This program includes career progression ladders, core functional competencies, master training plans, and mobility and continued service requirements. The CP 22 manager facilitates central

training, education, and development opportunities for PA careerists as defined by the ACTEDS plan and CP 22 career maps. PA specialists also attend the Civilian Education System leadership courses.

3-12. Civilian PA specialists have the same skills and competencies as their military counterparts. Continuity of operations is one of the civilian PA specialist's most critical roles. They support military operations by providing a direct and vital link between deployed forces and the home-station community. In some situations, civilian PA specialists deploy with units they support or as an individual augmentee. During disaster operations supported by the Army Corps of Engineers in the United States, a civilian PA specialist often serves as a primary Army liaison in affected communities. Civilian PA specialists participate in the full range of PA missions from community relations and outreach to communication planning and media operations. Senior civilian PA professionals develop and execute communication strategies, conduct analyses, and assess communications operations. They lead, manage, and train other PA personnel.

PUBLIC AFFAIRS AND VISUAL INFORMATION EDUCATION AND TRAINING

3-13. PAOs, Soldiers, and select DA Civilians receive their functional areas and MOS qualifications at the Defense Information School. PA NCOs receive additional PA training through the Army's Noncommissioned Officer Professional Development System schools. Like their Regular Army counterparts, Reserve Component Soldiers must meet the same basic and advanced educational requirements. All initial entry and accessions Soldiers attend the Military Communication Foundation course to qualify as a MOS 46S Public Affairs Mass Communication Specialist. (See DA Pam 611-21 for MOS classification structure.)

3-14. Both FA 46 Officers and CMF 46 Soldiers have additional opportunities. They can apply to attend advanced PA training at the Defense Information School, to train with industry, and to enroll in advanced civilian education options. (See DA Pam 600-3 for officer professional development programs and DA Pam 600-25 for NCO professional development programs.)

PUBLIC AFFAIRS ORGANIZATIONS AND ROLES

3-15. The Secretary of the Army has sole responsibility for the function of Army PA and designates the Office of the Chief of Public Affairs to perform the duties of formulation and promulgation of Army PA policy. (See Title 10, Section 7014, USC for the Secretary of the Army's responsibilities.) Commanders or their designated official spokespersons, who must be military or Army civilian officials, conduct PA in accordance with policy.

3-16. The commander is responsible for PA at all levels of command. PAOs serve on the commander's personal staff. In accordance with AR 360-1, commanders cannot delegate this function to any other staff function.

3-17. Commanders staff PA sections of operational units at their minimum-essential wartime requirements. When validating for readiness, mobilizing, or deploying, a unit may require PA unit augmentation to support the mission through appropriate operations channels. Commanders include PAO in planning and are able to request PA augmentation, which may be provided in alignment with mission requirements. Without proper planning and additional PA support, the commander may have degraded PA capability and capacity.

3-18. At home station, operational units and installation tenant organizations, with and without assigned PA staffs, receive limited PA support from the garrison PA office.

OFFICE OF THE CHIEF OF PUBLIC AFFAIRS AND DIRECTOR OF ARMY COMMUNICATIONS

3-19. The Chief of Public Affairs (CPA) is a general officer who is primary staff to the Secretary of the Army and answers to the Chief of Staff of the Army. The Secretary of the Army assigns the CPA the responsibility of personnel developer and force modernization proponent for Army PA. The Office of the Chief of Public Affairs (OCPA) is a headquarters, DA element at the Pentagon. It has several field operating agencies:

- OCPA West in Los Angeles: the principal PA liaison between the Army and the entertainment, television, and motion picture industries.
- OCPA Northeast in New York City: the principal PA liaison with broadcast, print, publishing, advertising, theatrical, and independent creative communities.

- OCPA Midwest in Chicago: the PA liaison that develops public support for the Army and its Soldiers through community outreach, media engagements, and support to veterans and military support organizations across the 16-state Midwest region.

Regional branch offices, as directed by the CPA, provide liaison and support to the Army, other Services, and local Army commands throughout the continental United States. (For more information on OCPA, see AR 360-1.)

ARMY PUBLIC AFFAIRS CENTER

3-20. The Army Public Affairs Center serves as the proponent executive agent for the CPA. This center develops, provides guidance for, and prepares Army PA doctrine, organizations, training, materiel, leadership and education, personnel, facilities, and policy (known as DOTMLPF-P).

ARMY BANDS

3-21. The OCPA has policy oversight of Army bands. Army bands promote the Army and national interests and enable commanders to shape the environment to accomplish their missions. These bands set the conditions that lead to public trust and confidence in the Army and its readiness to conduct operations in peace, conflict, and war. (For more information on bands, refer to ATP 1-19.)

3-22. The OCPA manages policy for the U.S. Army Field Band (known as USAFB). The Army Field Band conducts international and national concert tours in support of Army PA objectives. Its mission is to inspire the American people by telling the Army story, honoring Soldiers and veterans at home and abroad, and acting as the musical ambassadors of the Army.

ARMY COMMANDS PUBLIC AFFAIRS SECTION

3-23. Army commands (ACOMs) include Forces Command, Army Materiel Command, Training and Doctrine Command, and Futures Command. Commanders of ACOMs are senior Army leaders. They report to the Chief of Staff of the Army and to the Secretary of the Army for the organization, training, and equipping of the Army.

FUNCTIONS

3-24. The ACOM communications staff provides PA counsel to the ACOM commander and staff. This staff exercises functional planning, preparation, execution, and assessment authority for subordinate unit PAOs by, with, and through the chain of command. All ACOM directors of communications coordinate leader communication activities as part of Army strategy. They represent subordinate unit initiatives and issues in the OCPA communication process. The ACOM commander adequately organizes and resources the structure and capabilities of ACOM staffs to provide core communication functions within doctrinal staff organizations.

ORGANIZATION

3-25. ACOM PA staffs organize to sustain core functions appropriate to their echelons. ACOM staffs participate in design and planning activities like operational planning teams and working groups. An effective ACOM PA staff responds promptly to subordinate unit requests for guidance, planning, and assessment assistance. The ACOM PA staff represents subordinate units to OCPA's synchronized communication activities to include ACOM submissions for Army-level support on behalf of subordinate unit PA activities.

ARMY SERVICE COMPONENT COMMAND COMMUNICATIONS SECTION

3-26. The Army Service component command (ASCC) communications section provides PA support to the ASCC commander.

FUNCTION

3-27. The ASCC communications section exercises planning and supervisory authority over all PA and COMCAM units assigned, attached, or under the operational control of the theater army command. The ASCC PA section coordinates closely with the PA sections of other government agencies, coalition commands, and other forces, when appropriate, to conduct PA and communications activities. The ASCC director of communications leads CCS and directs theater-wide PA planning, priorities, and activities to ensure alignment with the ASCC commander's communication strategy and guidance.

STRUCTURE AND CAPABILITIES

3-28. The ASCC PAO is a FA 46 qualified colonel who serves on the commander's personal staff and may not be delegated to any other staff function. A sergeant major serves as the senior PA enlisted advisor. The PA section is organized, staffed, trained, and equipped to support Army theater-level operations and to direct PA activities in support of the commander's communication strategy. The ASCC PAO leads the assessment of the theater PA situation and information environment. This PAO analyzes guidance from higher headquarters to include campaigns, themes, messages, narratives, talking points, and communication objectives and coordinates with unified action partners and any other publics in the theater. The ASCC PAO and staff identify factors in the information environment that have potential implications for the planning and execution of operations, as well as the information requirements and needs of internal and external audiences. The ASCC PAO also develops PA planning through PA running estimates, proposed PA guidance, and development of Annex J (Public Affairs) in the operation order. PA planning includes any necessary PA unit augmentation, such as a theater public affairs support element or COMCAM support. A theater public affairs support element is the primary PA unit designed to augment an ASCC. (See paragraph 3-77 for more on theater public affairs support element.)

CORPS PUBLIC AFFAIRS SECTION

3-29. A corps or theater army PA section provides PA support to a corps commander and assigned units.

FUNCTION

3-30. A corps PAO exercises planning and supervisory authority over PA units attached, assigned, or under the operational control of the corps headquarters. The commander cannot delegate this PAO to any other staff function. A corps PAO leads CCS and coordinates closely with PA sections of higher, lower, and adjacent commands, and other forces to carry out the corps commander's PA activities. This PAO also ensures alignment with higher command communication strategies and guidance.

STRUCTURE AND CAPABILITIES

3-31. A corps PAO is a FA 46 qualified colonel who serves on the personal staff of a corps commander and leads a PA section within the corps headquarters. The commander cannot delegate this corps PAO to any other staff function. A sergeant major serves as the senior PA enlisted advisor. The section is organized, staffed, trained, and equipped to deploy rapidly in support of military operations. The section assesses the PA situation by analyzing guidance from higher headquarters to include campaigns, themes, messages, narratives, talking points, and communication objectives. The section also coordinates with unified action partners and any other entities within the corps area of operations. The corps PAO identifies factors in the information environment that have potential implications for the planning and execution of operations, as well as the information requirements and needs of internal and external audiences. The corps PAO also develops PA planning through PA running estimates, proposed PA guidance, and development of Annex J (Public Affairs) in the operation order. Such detailed planning includes any necessary PA unit augmentation, such as mobile public affairs detachment or COMCAM support. The mobile public affairs detachment is the primary PA unit designed to augment a corps. (See paragraph 3-69 for more mobile public affairs detachment.)

DIVISION PUBLIC AFFAIRS SECTION

3-32. The division PA section provides PA support to the division commander and assigned units.

FUNCTION

3-33. The division PAO exercises planning and supervisory authority over all PA units attached to or under operational control of the division headquarters or within the division operational area. The division PAO leads CCS and carries out the division commander's communication priorities by closely coordinating lower echelon PA sections and ensuring alignment with higher command communication strategies and guidance.

STRUCTURE AND CAPABILITIES

3-34. The division PAO is a FA 46 qualified lieutenant colonel who serves on the personal staff of the division commander. The division PAO may not be delegated to any other staff function. A master sergeant serves as the senior enlisted advisor and NCO in charge. The staff section is organized, staffed, trained, and equipped to deploy rapidly in support of division-size task force operations. The section assesses the PA situation by analyzing guidance from higher headquarters to include campaigns, themes, messages, narratives, talking points, and communication objectives, and coordinating with unified action partners and any other entities within the division area of operations. The division PAO identifies factors within the information environment that have potential implications for the planning and execution of operations, as well as the information requirements and needs of internal and external audiences. The division PAO also develops PA planning through PA running estimates, proposed PA guidance, and development of Annex J (Public Affairs) in the operation order that will include any necessary PA unit augmentation, such as a public affairs detachment or COMCAM support. A PA detachment is the primary PA unit designed to augment a division. (See discussion beginning in paragraph 3-66 for more on public affairs detachment.)

BRIGADE COMBAT TEAM PUBLIC AFFAIRS SECTION

3-35. The brigade combat team (BCT) PA section supports the brigade commander and assigned units.

FUNCTION

3-36. The BCT PAO exercises planning and supervisory authority over PA units assigned, attached, or under operational control to the brigade headquarters. The BCT PAO leads CCS and coordinates closely with higher echelons and other forces to carry out PA activities and ensure alignment with higher commander communication strategies and guidance.

STRUCTURE AND CAPABILITIES

3-37. The BCT PAO is a FA 46 qualified major and serves on the personal staff of the brigade commander. A staff sergeant serves as the PA noncommissioned officer. The staff section is organized, staffed, trained, and equipped to deploy rapidly in support of brigade task force operations and may not be delegated to any other staff function. The section assesses the PA situation by analyzing guidance from higher headquarters to include campaigns, themes, messages, narratives, talking points, and communication objectives, and coordinating with unified action partners and any other entities within the brigade area of operations. The BCT PAO identifies factors within the information environment that have potential implications for the planning and execution of operations, as well as the information requirements and needs of internal and external audiences. The BCT PAO also develops PA planning through PA running estimates, proposed PA guidance, and development of Annex J (Public Affairs) in the operation order that will include any necessary PA unit augmentation, such as a public affairs detachment or COMCAM support. Depending on mission requirements, a public affairs detachment will augment a BCT or COMCAM team. (See discussion beginning in paragraph 3-68 for more on public affairs detachment.)

MULTIFUNCTIONAL AND FUNCTIONAL BRIGADES PUBLIC AFFAIRS SECTIONS

3-38. Multifunctional and functional brigade PA professionals provide PA support to the commander and assigned units. Multifunctional brigades include fires, maneuver enhancement, military intelligence-expeditionary, combat aviation, and sustainment brigades. Functional brigades include air defense artillery, chemical, engineer, military intelligence, military police, signal, explosive ordnance disposal, medical, regional support groups, and theater aviation brigades.

FUNCTION

3-39. The brigade's PA section coordinates closely with the supported command to plan and conduct PA activities and ensures those activities are aligned with higher echelon command communication strategies and guidance.

STRUCTURES AND CAPABILITIES

3-40. The brigade PAO is a FA 46 qualified officer or senior PA NCO and serves on the personal staff of the brigade commander. A sergeant serves as the PA NCO. The section assesses the PA situation by analyzing guidance from higher headquarters to include campaigns, themes, messages, narratives, talking points, and communication objectives, and coordinating with unified action partners and any other entities in the brigade area of operations. The brigade PAO identifies factors in the information environment that have potential implications for the planning and execution of operations, as well as the information requirements and needs of internal and external audiences. The brigade PAO also develops PA planning through PA running estimates, proposed PA guidance, and Annex J (Public Affairs) in the operation order that will include any necessary PA unit augmentation, such as a PA detachment.

3-41. Depending on mission requirements, a PA detachment augments a multifunctional or functional brigade. When augmented by a public affairs detachment team, the public affairs detachment officer in charge may serve as the brigade PAO in the absence of an assigned or authorized PAO. (See discussion beginning in paragraph 3-66 for more on PA detachment.)

SPECIAL OPERATIONS FORCES PUBLIC AFFAIRS AND COMBAT CAMERA

3-42. Special operations forces (SOF) have assigned Army PA and COMCAM personnel at the U.S. Special Operations Command, Joint Special Operations Command, Theater Special Forces Commands, U.S. Army Special Operations Command, 1st Special Forces Command, special forces groups, and MISO battalion level.

FUNCTIONS

3-43. The SOF PA staff is responsible to advise the SOF commander on the impact their operations might have in the public realm and to serve as the spokesperson for the unit. Due to the nature of special operations, SOF PA personnel have a unique responsibility to ensure that policies regarding the release of information and imagery are followed in accordance with local command policy.

3-44. The SOF PAO, or commander-designated representative, may serve as the link between the command and the senior U.S. Department of State representative or other designated authority responsible for releasing information to the host-nation media during foreign internal defense and unconventional warfare operations, exercises and missions involving extensive interaction with the host-nation population.

3-45. The SOF PA staff often reports or coordinates directly with a theater special operations command (TSOC), special operations command (SOC), or joint special operations command (JSOC) PAOs for planning, guidance, and release authority.

STRUCTURE AND CAPABILITIES

3-46. A SOF PA section is normally composed of a PA-trained officer who serves on the commander's personal staff and NCO who serves on the special staff. The rank and grade structure of individual SOF units depends on their authorizations. The PA staff section supports and receives support from higher echelon PA staffs.

UNIT PUBLIC AFFAIRS REPRESENTATIVES

3-47. The UPAR program is designed to facilitate commanders' operations in the information environment. In accordance with AR 360-1, PAOs are responsible for cultivating UPARs in their units. At a minimum, PAOs train UPARs on PA plans and policies, embedded media, engaging local media, and conducting media opportunities at the battalion level and below. The required training for UPARs can be found on the Army Learning Management System (ALMS) website. The PAO and the UPAR both must maintain the certificate gained from the UPAR course.

3-48. UPARs are assigned through additional duty appointment orders to represent their units for PA functions. UPARs increase PA capability across a command and provide products to the PAO for editing and formatting. While UPARs can create products, the PAO maintains release authority, which cannot be delegated. When UPARs are designated and assigned UPAR duties through additional duty orders, the commander is responsible for equipping them. The UPARs require professional photography equipment. The higher echelon PA office provides guidance for selecting the correct equipment. Ideally, commanders equip UPARs with the same program of record equipment that Army PA professionals use to maintain continuity and facilitate further UPAR training.

GARRISON PUBLIC AFFAIRS OFFICE

3-49. The garrison PA office provides standard PA services to an installation. Garrison PA support depends on staff size, which varies based on mission and tenant unit requirements.

FUNCTION

3-50. Normally on Army installations, the garrison PA staff support the senior mission commander, garrison commander, and tenant commanders. The PA staff plan and execute PA activities in close coordination with partner and higher echelon commands to ensure the Army speaks with one voice. On a joint base, garrison PA support may vary based on tenant unit make-up and the military service of the senior commander.

STRUCTURE AND CAPABILITIES

3-51. The garrison PA office is primarily composed of DA Civilians (CP 22) who serve on the staff of the garrison commander. The garrison PAO supports and coordinates with tenant and partner units on PA operations affecting the installation by identifying factors in the information environment that have potential implications for the planning and execution of garrison operations, as well as the information requirements and needs of internal and external communities and audiences. Garrison PAO develops PA plans through PA running estimates, proposed PA guidance, and Annex J (Public Affairs) of the operation order when applicable.

EXTERNAL ORGANIZATIONS

3-52. Army PA have relationships with organizations, such as the Defense Media Activity, Office of the Assistant to the Secretary of Defense for Public Affairs, Defense Information School, U.S. government agencies, and NGOs.

U.S. GOVERNMENT

3-53. Effective PA activities require close coordination among the U.S. military, the Department of State, Department of Homeland Security, and other U.S. government agencies. Normally, executive orders define agency roles, functions, and interagency relationships.

DEPARTMENT OF STATE

3-54. The Department of State implements foreign policy. Due to its mission, the Department of State has a stake in PA activities. PA and other capabilities contributing to defense support to public diplomacy coordinates communication with the respective American Embassy PAO to optimize effects and the achievement of goals. In the area of PA, the Department of State has a primary or shared role with the DOD for policy concerning—

- The extent U.S. forces will aid host-nation governments.
- Matters that may affect U.S. relations with other nations, principally allies or neutrals.
- The level at which a country's economy will be maintained by U.S. operations.
- Matters involving MISO, PA, civil affairs, information synchronization, or other measures to inform or influence the attitude of a public.

3-55. The Department of State engages international key publics on issues of U.S. policy, society, and values to help create an environment that can be receptive to America's national interests. Commanders must coordinate and synchronize their plan for PA activities with these and other national-level communication initiatives.

DEPARTMENT OF HOMELAND SECURITY

3-56. During national emergencies in the United States, Army PA personnel may be called upon to provide support. The Department of Homeland Security, through the Federal Emergency Management Agency (known as FEMA) and in coordination with affected state and local governments, is normally the lead agency for the federal response. Army PA personnel must understand and abide by the release authorities established by the civil authorities. (See paragraph 1-74 for more on DSCA.)

DEFENSE MEDIA ACTIVITY

3-57. The Defense Media Activity consolidates several DOD and Service media capabilities and is the DOD's direct link to U.S. forces worldwide for news and information. The agency presents news, information, and entertainment via radio, television, internet, print media, and emerging media technologies. Located at Fort Meade, Maryland, the Defense Media Activity reports to the Office of the Assistant to the Secretary of Defense for Public Affairs.

DEFENSE INFORMATION SCHOOL

3-58. The Defense Information School (DINFOS) is a component of the DOD's Defense Media Activity. Its primary purpose is to train Service members of all military branches in the fields of mass communication, PA, and VI. In addition, selected DOD civilians and international military personnel can attend DINFOS for many of its courses. DINFOS is a DOD school located at Fort Meade. (See paragraph H-4 for more information on DINFOS.)

NGONGOVERNMENTAL ORGANIZATIONS

3-59. NGOs and humanitarian groups, such as the International Committee of the Red Cross, American Red Cross, and other humanitarian organizations, are often located in geographic areas before, during, and after military operations. They are often present before the media arrive and initial sources of information for journalists. NGOs also may serve as major sources of information during an operation. In many cases, the unit PAO, public affairs detachment, or mobile public affairs detachment may be tasked to support the Civil Affairs Command in the civil-military operations center.

3-60. Before deploying, PA personnel learn the agencies and organizations in their assigned area. These organizations may conduct short-term humanitarian or long-term developmental operations. Sponsoring groups or agencies can include private corporations, foundations, professional associations, or religious groups. PA personnel must understand the agencies and organizations' goals, establish an understanding of their potential PA needs, and understand the legal parameters of cooperation with NGOs. NGO representatives may have valuable local knowledge to assist PA activities.

PUBLIC AFFAIRS UNITS

3-61. Army PA units augment ASCC, corps, division, and brigade as well as special forces groups (Airborne), and other organic PA staffs to provide PA capabilities.

3-62. PA units are designated as standard requirements code (SRC) 45 units. They require administrative and life support functions from the commands to which they are assigned or attached. These units may support any of the following centers: joint information centers, MOCs, press information centers, allied press information centers, or coalition press and information centers as the situation and mission dictate. SRC 45 units may be attached or directed to support partner nations during multinational operations, exercises, and training.

3-63. Most SRC 45 units are in the United States Army Reserve and Army National Guard. These units integrate with Regular Army units to meet the commanders' requirements through the deliberate planning process and various operation and contingency plans.

3-64. Because of their modular design, SRC 45 units often provide Army support to other Services, such as a Marine expeditionary force, a joint special operations task force, or an air expeditionary wing. These units routinely support interagency requirements of national importance, such as DSCA.

3-65. There are four types of PA SRC 45 units:

- Public affairs detachments.
- Mobile public affairs detachments.
- Broadcast operations detachments.
- Theater public affairs support element.

PUBLIC AFFAIRS DETACHMENT

3-66. During deployment a public affairs detachment (PAD) supports the PAO of the augmented unit at a brigade or higher. A PAD consists of two fully functional teams that may deploy independently. See figure 3-1 for the PAD task organization.

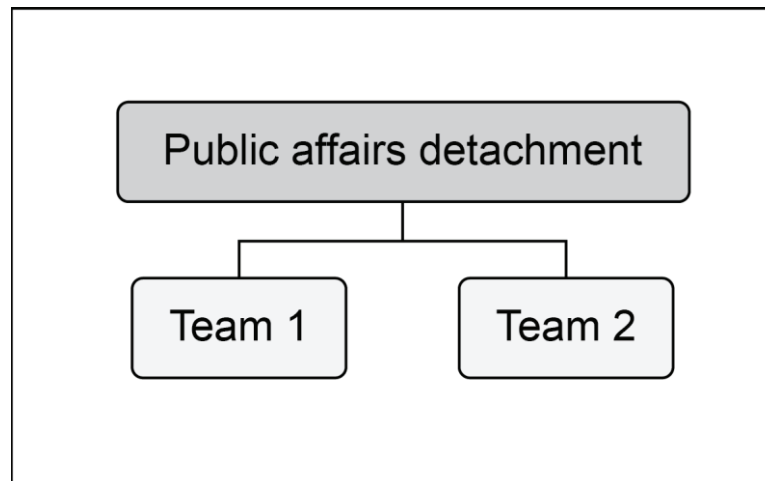


Figure 3-1. Public affairs detachment task organization

Mission

3-67. A PAD provides direct PA support to units of armored, infantry, or Stryker BCTs, a special forces group, civil affairs brigade, or headquarters and headquarters company and special troops battalion sustainment brigade.

Structure and Capabilities

3-68. PADs are led by a FA 46-qualified captain who provides command and control over the two PAD teams during home station training. This captain serves as a deputy PAO or planner for the supported command PAO during deployment. The two teams may deploy independently to support operations including stability, transition, and reconstruction operations. PADs provide assistance and advice to the supporting unit's PA office; augment command information programs; transmit command information products between higher and lower echelon headquarters; provide limited electronic audio support, video support, and news gathering; and assist in managing digital media platforms.

MOBILE PUBLIC AFFAIRS DETACHMENT

3-69. Mobile public affairs detachments (MPADs) support the PAO of an augmented unit at the division echelon or higher or as missions require. See figure 3-2 for task organization of a MPAD.

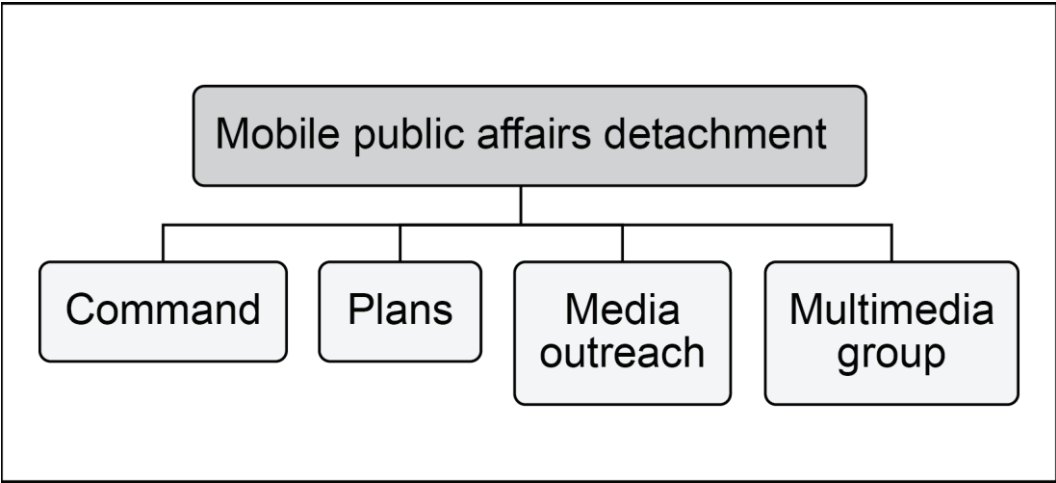


Figure 3-2. Mobile public affairs detachment task organization

Mission

3-70. A MPAD provides direct PA support through planning, coordination, execution, and supervision of expeditionary and campaign PA operations in support of theater army, joint, interagency, intergovernmental, and multinational and unified operations. On an as needed basis, MPADs augment the supported command PA staff.

Structure and Capabilities

3-71. MPADs are commanded by a FA 46-qualified major who provides command and control over the MPAD teams during home station training. This major serves as a deputy PAO or planner for the supported command PAO during deployment. A MPAD consists of a detachment headquarters section, plans section, media outreach section, and multimedia section. MPADs provide PA staff support to the mission commander including planning, analysis, synchronization, and supervision in support of the commander's information strategies and communication objectives. These PA capabilities encompass personnel and equipment to facilitate media relations, engagements, and operations, to include establishing, operating, and maintaining MOCs. Other PA support includes providing logistics support of media pools and embed programs, conducting live media interviews and briefings, and providing appropriate technologies to facilitate

international, national, and local media. MPADs acquire, produce, transmit, and distribute complete, accurate, and timely digital multimedia print and broadcast products in support of PA activities. MPADs can also conduct and evaluate PA training programs.

BROADCAST OPERATIONS DETACHMENT

3-72. A broadcast operation detachment (BOD) provides audio-visual and broadcast support at the theater level. See figure 3-3 for task organization of a BOD.

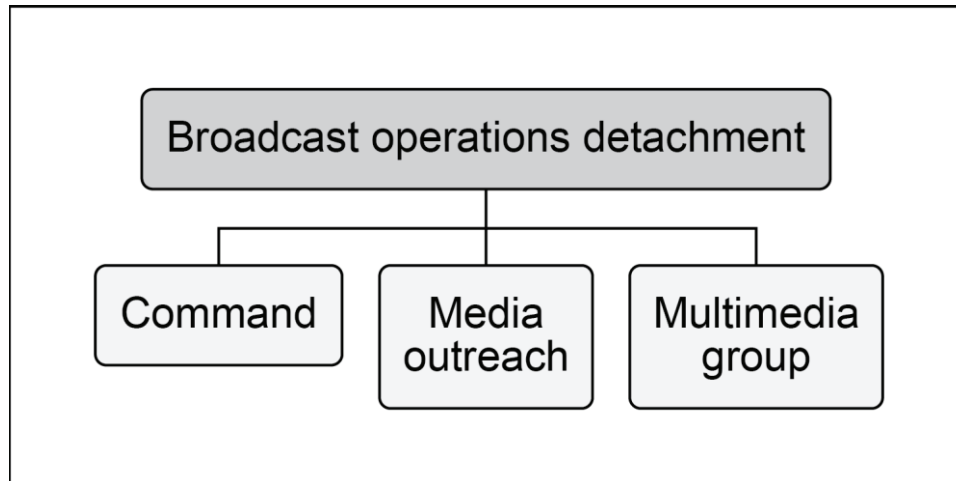


Figure 3-3. Broadcast operations detachment task organization

Mission

3-73. The BOD operates and maintains an established theater-level radio, an established television broadcast facility, and multimedia platforms to meet the senior commanders' internal and external communication objectives and information requirements.

Structure and Capabilities

3-74. BODs are commanded by a FA 46-qualified major. A BOD consists of a detachment headquarters, a multimedia team, and a maintenance team. BODs are assigned to a theater army as needed. They can support the higher echelon PAO or staff with planning and information strategy requirements. BODs can operate a 24-hour-a-day internal information, over-the-air broadcast service as well as manage and maintain broadcast facilities when coordinating with the Defense Media Activity or theater command-provided studio equipment. BODs perform digital multimedia, video, and audio electronic news gathering in the theater of operations, provide limited post-production services for audio and video news feature material supplied in unedited format by other units, and provide electronic audio and video support to the Defense Media Activity operations.

THEATER PUBLIC AFFAIRS SUPPORT ELEMENT

3-75. A theater public affairs support element (TPASE) is the most capable and tactically diverse PA unit. It provides PA support at the theater level or as a mission requires. See figure 3-4 on page 3-13 for the task organization of a TPASE.

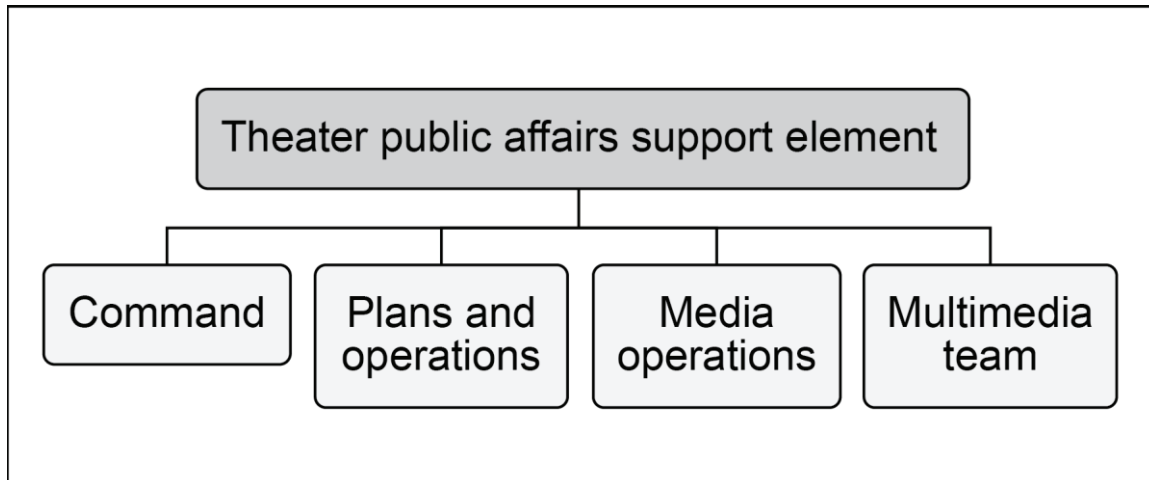


Figure 3-4. Theater public affairs support element task organization

Mission

3-76. The TPASE provides direct PA support through planning, coordination, execution, and supervision of PA operations in support of theater army, joint, interagency, intergovernmental, and multinational operations.

Structure and Capabilities

3-77. A TPASE is normally assigned at the corps, theater army, or combatant command-level to provide the organic PA staff with increased capabilities. The TPASE is commanded by a FA 46-qualified lieutenant colonel who provides control over the TPASE during home station training. This officer serves as a deputy PAO or MOC director for the supported command PAO during deployment. The TPASE is organized with a command section, media operations section, multimedia team section, and plans and operations section. This element provides advice and counsel; conducts PA planning; conducts PA training; facilitates media relations; and facilitates public communication and community engagement. Generally, the TPASE is the lead element for the gaining command to facilitate media operations in theater. The commander may task and deploy the TPASE in teams according to the mission and gaining command PA augmentation requirements.

COMBAT CAMERA

3-78. A COMCAM company is a force enabler composed of highly trained VI professionals prepared to deploy to the most austere environments at a moment's notice. Skilled in acquiring and using still and motion imagery, COMCAM teams attached to a BCT, divisions, corps, or theater army provide commanders with directed imagery capability. This capability supports operational planning, PA, IO, operations assessment as well as forensic, legal, intelligence, and other requirements during crises, contingencies, and exercises around the globe.

Mission

3-79. COMCAM forces perform unique and highly specialized missions with digital and analog VI documentation capabilities. They support armed forces in war, natural disasters, and training activities.

Structure and Capabilities

3-80. COMCAM companies are commanded by a field grade officer trained on VI management. COMCAM consists of a company headquarters, a tactical operations section, an airborne support section, and three support platoons. Army COMCAM companies provide command, control, and supervision of the operations and activities of assigned COMCAM platoons. They also serve as liaison to supported units, a joint

COMCAM team, and other Service COMCAM elements. COMCAM companies acquire still and video imagery of land, static airborne, and air assault operations and provide presentation and exploitation of visual imagery in support of operational requirements. COMCAM companies establish, operate, and maintain COMCAM facilities required to support theater-level and subordinate tactical command post headquarters. These companies have the training and equipment to operate in all weather and lighting conditions with conventional and special operations units. They maintain airborne qualified Soldiers and conduct other advanced tactical training that may include air assault, combat lifesaver, and advanced marksmanship techniques, enabling them to operate with airborne forces and SOF in areas inaccessible to media or other VI personnel.

PART TWO

Public Affairs Operations

Part two of this publication covers and discusses public affairs operations. Commanders expect public affairs leaders, Soldiers, and civilians to conduct public affairs operations. Public affairs operations encompass all the collective and individual tasks of public affairs organizations and personnel. Effective public affairs personnel understand the information discussed in this part of the publication. Part two is intended to assist public affairs personnel in executing their tasks. It is not intended to provide instructions on how to perform those tasks. Readers can find instructions on how to perform the tasks and procedures involved at the Central Army Registry (CAR) website.

Chapter 4

Public Affairs Training

4-1. Providing PA training to non-PA units is a U.S. Army public affairs core task. PA provides commanders with trained units, leaders, and individuals in support of the mission. PA Soldiers and civilians begin their training when they take their oath and enter Army service. Proper PA training enables commanders, staffs, and Army leaders to recognize, understand, and plan for the strategic, operational, and tactical impact of communications in the information environment.

4-2. Operational success depends on commanders ensuring forces receive well planned, standardized, realistic, rigorous, and performance-based training. Training requires adaptation and flexibility to ensure forces are prepared to engage adversaries using emerging and ever-changing strategies, tactics, and technology. All command echelons focus PA training on integrating PA equities into planning during the MDMP, and taking the necessary steps to synchronize and coordinate communications with other IRCs.

4-3. PA leaders train Soldiers for the range of military operations. These include low-intensity conflicts with violent extremist organizations as well as multi-domain operations designed to deter and defeat near-peer aggression in both competition and conflict. All training ensures PA personnel are ready to deploy, fight, and win. PA training follows the operations process. Commanders and PA leaders assess unit training and leader development through unit training management systems. (See Appendix H and FM 7-0 for detailed information regarding Army training.)

4-4. The presence of media representatives in the Army's operational theaters is a fact. Media interaction is more a question of when as opposed to if it happens. Conducting interviews is an important part of the PA mission and a part of public communication. Soldiers, leaders, DA Civilians, and Family members are the Army's best spokespersons. They must be prepared to interact with civilian reporters, in some cases, without direct assistance from PA personnel. Conducting media interaction training with non-PA personnel helps tell the Army story.

4-5. PA planners identify non-PA assets that could assist in executing the commander's communication strategy. Non-PA assets can directly impact communication throughout an operation and must be taken into consideration while developing training. PA conducts media engagement training for non-PA personnel to

ensure effective communication and support to the commander's information objectives. Media engagement is deliberate engagement with the media by public affairs or a unit command team. Media engagement will always involve PA presence. Organizations, units, and individuals may require media engagement training depending on the requirements of the commander's communication strategy. PA staff conducting the training reference the approved communication plan for information necessary to facilitate media engagement training such as tactics, messages, and talking points.

4-6. Effective PA sections and units conduct challenging training to prepare commanders and spokespersons to communicate the Army message. PA professionals conduct PA training ranging from familiarization training in an auditorium to focused one-on-one interview rehearsals with subject matter experts as well as general training of allies and unified action partners.

4-7. PA professionals help prepare commanders and leaders for public speaking engagements. Commanders, often through their PAOs, maintain a continuous dialogue with media representatives covering military activities. Most media representatives strive to publish accurate, truthful, balanced stories. They aim to report fairly and not to undermine, interfere, or misrepresent the military, its operations, or activities. The PAO has no editorial control over media representatives. Commanders must understand that some media representatives do not always tell the story the commander wants them to tell. Because of this, some stories may result in misunderstandings, errors, or criticisms. In these cases, commanders and PAOs may seek to push back against inaccurate news reports, but balance this against an understanding of the impact of command actions on perceptions, attitudes, and beliefs of the media. The commander formulates and delivers timely and culturally attuned messages to counter potential misperceptions. Successful media engagements start with planning and training.

MEDIA FAMILIARIZATION TRAINING

4-8. The Army has recognized the importance of non-PA Soldiers, DA Civilians, and Family members interacting with the media. PA Soldiers have an individual task to conduct media interaction training for non-PA personnel. PA Soldiers train commanders, non-PA Soldiers, DA Civilians, and Family members on properly conducting a media interview and on understanding performance measures used to measure success.

TRAINING AUDIENCE

4-9. PA professionals provide training on interaction with the media. First, they identify the training audience. When planning the training, the instructor identifies the audience. After identifying the audience, instructors seek to understand it. Understanding includes identifying the audience's level of experience and mission. An instructor might seek answers to the following questions to prepare tailored training for the group:

- Is the audience a unit? Has it deployed recently?
- What media training has audience received at this point?
- Is the audience solely junior enlisted, NCOs, officers, or is it a diverse group?
- What is the primary mission and deployment destination of the audience?

TRAINING METHOD

4-10. Following identification and understanding of the training audience, the instructor selects the training method. Selecting the training method facilitates providing effective media interaction training. Instructors consider training objectives, location, time allotted, number of participants, training materials, and training resources such as number of instructors and evaluators. Instructors have several ways to conduct media interaction training with non-PA personnel. They consider creative new methods, opportunities, and technology. See table 4-1 for possible methods that increase in difficulty in skill.

Table 4-1. Methods of training

Method	Example	Purpose
Media training briefings	A slide presentation normally conducted in a garrison or off-site training facility.	Explains the role of public affairs, available public affairs support, nature and needs of the media, and guidance for spokespersons.
Mock interviews	Information, demonstration, and coaching with a facilitated mock media interview.	Provides realistic and mission-relevant interview questions using media role players. Demonstrates the difficulty of an interview, identifies the trainee's strengths and weaknesses, and teaches how to improve where needed. Records interview training session (on camera, print, or livestream) so trainees can see from a third-person perspective how they performed. Facilitates feedback for the entire training group.
Media on the battlefield training	Field training exercises in which media role players interact with Soldiers during operations.	Supports the principle of train as we fight by providing of the most realistic training environment possible. Affords the commander an opportunity to view their Soldiers' ability to communicate with the media and assess their capability under stressful conditions.
Troop cards	Wallet-sized, laminated cards printed using standard computer-based publication design programs. Dispersed during media training events.	Gives Soldiers, Department of the Army Civilians, and Family members a portable tool to reference before a media interaction. Provides command messages, talking points, media interview tips, common questions and answer suggestions, and public affairs points of contact information.

TRAINING STRATEGY

4-11. Selecting the training strategy is necessary and determines the amount, type, and pace of training required for the training audience or individual. A training strategy may be to conduct the training using either the crawl, walk, run method or a combination method.

4-12. The crawl, walk, run method works best when commanders allotted two weeks or months for training before the exercise or deployment. The crawl level can consist of a media training briefing. The walk level might consist of mock interviews. The run level might consist of media on the battlefield training. This method provides levels of training, builds on acquired skills, incorporates evaluation time, and identifies additional training requirements. The training increases in complexity and resource requirements as the trainee develops capability. While the crawl, walk, run training strategy can often result in a higher level of proficiency, it leaves less time for additional training if evaluator has noted any deficiencies. In some cases, combining various training events into one period may be a necessity when time or days between training events are not practical.

TRAINING DEVELOPMENT

4-13. Each training method requires different information, skills, and references. Instructors and trainers carefully research, plan, and develop a program of instruction or training tasks using the latest approved policy, doctrine, tactics, techniques, and procedures. PA professionals conducting media interaction training can reference PA individual and collective tasks located on the Central Army Registry website. PA personnel ensure the training audience receives the latest PA guidance, policies, and procedures regarding media interaction. This equips the training audience with the most current themes, messages, narratives, and talking points.

4-14. Some important topics to cover in the PA training include the following:

- Role of Army PA and the PAO.
- Responsibilities, types, and characteristics of the media.
- Tactics, techniques, and procedures to communicate with the media.
- PA guidance, policy, and OPSEC to prepare for interview.
- Use of relevant messages, talking points, and effective responses to conduct the interview.
- Communication through social media networks.

Regardless of the training method, instructors and trainers ensure the audience hears and understands the covered training. Instructors and trainers remove distractions and discourage cross conversation so trainees can hear the briefings. They facilitate audience practice of the material covered. Practice allows for immediate reflection and feedback, on the spot improvements, and assessment of time required.

CONDUCTING TRAINING

4-15. Instructors and trainers properly develop, prepare, and resource training tailored to the training audience. The training then better provides increased capability for Army PA to tell the Army story to international and national publics.

4-16. PA trainers answer questions, provide examples, and demonstrate what right looks like. Knowledge of references and resources supports the credibility of the training professional. PA professionals require patience and must remember that many personnel in any given training audience may have never received any media interaction training or had any experience speaking in public. This knowledge requires the trainer not just to instruct, but also to coach, mentor, and encourage.

4-17. Training events always require feedback upon completion. PA trainers seek improvement through queries from the audience and leaders receiving the training. Questions regarding relevance, clarity, and presentation method of topics, examples, and exercises are important to answer. Assessment of the training event helps ensure proper use and planning of time at training events. Training performed too quickly or that runs unnecessarily long can demotivate a training audience or diminish the effectiveness of the training. Instructors and trainers evaluate feedback to determine what portions to keep, to refine, to add, or to eliminate.

TRAINING SPOKESPERSONS

4-18. Media interaction training often consists of preparing a specific spokesperson to address the media or conduct an interview with a news media representative. The spokesperson requires personal media training and attention to be prepared to deliver the most accurate and timely information to the public. An Army spokesperson represents the Army, their unit or organization, profession, and even the United States. PA staff carefully plan and consider the preparation of spokespersons to ensure the information provided on the record is correct, lawful, and represents Army Values. The task of preparing a spokesperson may come with very short notice or as part of a communication plan. Once determined it is appropriate to conduct an interview, a commander needs to identify an appropriate spokesperson.

4-19. PA staff facilitates and supports the spokesperson and media interaction. The PA staff do not interfere with the media interaction. A media interaction is the Army's chance to tell the story accurately and effectively. Support to the spokesperson begins with the initial query and ends with assessment and evaluation of the media interaction. PA leaders provide positive support to the spokesperson, even when an event occurs that interrupts the process. Both the PAO and spokesperson remain calm and in control. Expect the spokesperson to have some anxiety regarding the media interaction. Through proper planning and preparation, the media interaction can achieve communication objectives and inform key publics.

SELECTING A SPOKESPERSON

4-20. Speaking to the public through the media requires commanders to select representatives who are best suited for the role of a spokesperson and trainer for preparing a spokesperson. Commanders are spokespersons for their command, but other individuals may be required to speak on various topics or areas of expertise. The commander, staff, and PA leader work together to determine the right person to be a

spokesperson. PA leaders are the most informed regarding requirements for successful media interactions and the spokesperson.

4-21. PA leaders ensure that individuals selected have the necessary training, skills, and experience to prepare spokespersons ranging from Army Family members to the most senior officers, NCOs, and civilians employees. Consideration of existing professional relationships, appropriate rank, interview subject matter, and abilities are some factors necessary to determine the right spokesperson.

4-22. Spokespersons sometimes need to have in-depth knowledge of a particular topic, which requires identification of a subject matter expert (SME) in the command. Public perspective may lead to the appropriate spokesperson being someone who either is actively involved in the issue or has studied it at length. See table 4-2 for selecting a SME once PA personnel identify the focus of the engagement.

Table 4-2. Spokesperson selection

<i>Focus Type</i>	<i>Information</i>	<i>Spokesperson</i>
Strategic focus	Issues that require a big-picture focus on a topic.	Commanders or senior officials who can discuss the issue at that level.
Technical or tactical focus	Issues that require a more narrow focus on a topic.	People closest to the topic, such as the ones doing the actual work and have the resident expertise on the topic.
Human interest	Any great news or feature story has human interest and emotion at its core.	The men and women in uniform and their families.

4-23. PA professionals help determine the narrowed focus, potential SME candidates, and an understanding of the SME topics. Then they help commanders identify the most effective spokesperson for the media interview or engagement. The following characteristics may help identify the best SME:

- Has the appropriate level of knowledge regarding the topic.
- Understands overall objectives and commander's communication strategy.
- Possesses the ability to tell the story within context.
- Holds confidence of leadership.
- Desires to do the interview.
- Is an effective presenter.

4-24. Effective preparation of a spokesperson requires a PA professional's respectful candor and expertise, especially during assessing and evaluating the spokesperson's strengths and weaknesses through the training and preparation session. Failure to identify a spokesperson's deficiencies during a personal training and preparation session may lead to substandard performance by that spokesperson during a real-world media engagement. A poorly advised spokesperson could compromise the credibility of the Army and the individuals involved.

4-25. Effective crisis communication always requires a competent spokesperson trained and ready when a crisis happens. Because of this, commanders designate the command spokesperson well before any sort of crisis develops.

SPOKESPERSON PREPARATION

4-26. Preparing a command spokesperson for a successful media engagement requires several steps. The PAO determines the experience level of the selected spokesperson to determine the needed preparation.

4-27. PA leaders present relevant information, cover necessary details regarding the media interaction, and answer questions or concerns the spokesperson may have. A PA leader can use a message map as a guide for discussion. (See Appendix G for message maps.) A message map helps leverage key messages and talking points while tying in facts, stories, and context. PA personnel explain answer why a recommended effective response to a question is most effective and appropriate. See table 4-3 on page 4-6 for considerations PA personnel apply during spokesperson preparation.

Table 4-3. Considerations for spokesperson preparation

Consideration	Reason
Identify communication objectives to accomplish with interview	The commander desires to communicate to key audiences and send key themes and messages through the media. Think of this in terms of the information desired in an article resulting from the interview. Understanding the communication objectives helps the spokesperson craft and articulate appropriate responses during an interview.
Provide information regarding the news outlet and the news media representative to the spokesperson	Providing baseline information helps the spokesperson break the ice during initial meeting. A news organization synopsis, the reporter's professional biography, and the reporter's recent news pieces usually suffice. This information also helps the spokesperson to anticipate possible questions that the media representative will ask. Supplying this information at least one day prior to the preparation session gives the spokesperson more time to synthesize it.
Review the media kit	The spokesperson needs knowledge of and copies of materials that the media representative received. A media kit provides the reporter information and facts about the unit, relevant topics, and spokesperson, all of which the spokesperson should expect questions on during the actual interview. (See paragraph 6-9 for more on media kits.)
Provide approved talking points and messages to the spokesperson	The spokesperson requires effective responses and response techniques to answer anticipated questions using approved messages and talking points. The spokesperson must fully understand the talking points and messages.
Review the Do's and Don'ts during an interview	The spokesperson reviews security, accuracy, policy, and propriety topics to help provide the necessary response without compromising operations security, misinforming, speculating, violating established policies, or speaking on inappropriate matters.
Complete a message map	Commanders and their designated spokespeople use message mapping to help connect with audiences on key topics. These maps use a variety of approved, relevant, command-focused messages.
Ensure the spokesperson understands the ground rules	The spokesperson understands the ground rules that clarify the left and right limits of the media representative or media organization during the interview or engagement. The spokesperson recognizes and reacts accordingly when the media or the media representative violates any ground rules. The PAO present during the interview normally interjects on behalf of the spokesperson to keep the interview on course.
Provide spokesperson an opportunity to rehearse	Rehearsal helps the spokesperson gain a higher level of confidence. Rehearsal can reveal unforeseen problems and issues regardless of the topic, type of media engagement, and spokesperson's experience. A technique such as role-playing effectively provides rehearsals that help identify issues, mispronunciations, body language, eye contact, and technical difficulties to correct before the media interaction.
Provide feedback to the spokesperson.	The feedback should be in the form of an after action review. Pre-interview and post-interview feedback is essential in assessing the effectiveness of the training and the spokesperson's performance. This feedback should be candid and professional.

4-28. Appendix F contains various media training product templates for use in unit media training. Appendix G contains message mapping techniques and media facilitation guidelines for preparing command spokespeople or SMEs for media engagements.

MEDIA ENGAGEMENT TRAINING

4-29. Effective media engagement training encompasses the entire media engagement process of planning, preparation, and evaluation. The training facilitates the commander and PA staff in identifying any actual and potential issues before an actual engagement occurs.

4-30. PA staffs ensure spokespersons are equipped well before media engagements with proper training and pre-interview preparation. Expecting a spokesperson to execute a media interview well with little or no preparation is unreasonable. See table 4-4 for factors to consider for media engagement training.

Table 4-4. Considerations for media engagement training

Factor	Reason
Date, time, and location	Plan training well in advance of any expected media engagement. Conduct the pre-interview in the exact or similar location where the interview will occur. This ensures the environment is suitable for the engagement and gives the spokesperson time to get accustomed to the surroundings.
Media interview type	Tailor media engagements for print media, television or film interviews, live television interviews (livestreaming interviews), or radio interviews. Anticipate and plan for large media engagements to include a combination of interview types.
Preparation	Gather facts, review public affairs guidance, collect background information, and develop a media kit with key information related to the interview subject matter.

SOCIAL MEDIA TRAINING

4-31. The use of social media has its inherent risks; therefore, it is important for commanders to understand these risks as well as the power and benefits associated with using social media platforms. Effective social media training reinforces a climate where members of the Army including Soldiers, DA Civilians, contractors, and family members understand that online misconduct is inconsistent with Army Values. This training emphasizes preventing, reporting, and addressing online-related incidents at the lowest possible level. Social media training is one tactic to mitigate the risks of social media use.

4-32. PA guidance, policies, and training resources for social media training occurs in all three training domains. PA professionals and unit leaders can reference the Army Social Media website (<https://www.army.mil/socialmedia/>) for information regarding policies and guidance regarding the proper use of social media as well as education and training resources. It also provides content on social media best practices and up to date trends.

UNIT PUBLIC AFFAIRS REPRESENTATIVE TRAINING

4-33. UPARs represent their units for PA functions. UPAR duty provides additional developmental opportunities and training to motivated individuals desiring to tell the story of their unit, organization, and the Army. UPAR selection and training increases the higher echelon PA leader's capability to communicate for the commander. UPAR products are subject to normal editing and PA release procedures. UPARs must receive training outlining their required PA duties and responsibilities.

4-34. UPARs gain and develop basic PA skills through traditional training methods and may gain additional skills from working with PA professionals in their units and organizations. The course prepares enlisted Soldiers and officers with the training required to serve as a UPAR. At a minimum, UPARs receive training on the following:

- The official release authority.
- Basic news writing (5W's and How).
- Basic photography.
- Media facilitation:
 - Monitoring and facilitating media embeds.
 - Coordinating media engagements through a higher echelon PA office.

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Chapter 5

Public Affairs Planning

PUBLIC AFFAIRS PLANNING IN THE OPERATIONS PROCESS

5-1. PA planners focus on communication-related activities that occur in the information environment. Planning is a major activity of command and control. PA is involved in planning, providing critical input with G-2, MISO, and IO offices, to ensure mutual support and consideration that may be provided to the commander's critical information requirements (CCIRs) for the commander's approval. Small PA sections, such as the brigade, require planning support by the higher headquarters or public affairs unit augmentation. PA staffs are actively integrated in each step of the operations process.

5-2. PA leaders must understand that while planning may start as an iteration of the operations process, it continues upon completion of the initial order and as leaders revise the plan based on changing circumstances. PA staffs remain involved in planning from the beginning. This includes participation in the targeting process. PA leaders and staff must observe the broad spectrum of PA connections. PA terrain is extensive and should be involved in planning.

5-3. PA operations require continuous and collaborative planning. PA planning is followed by the preparing, executing, and assessing activities. Developing a synchronized, cohesive, and comprehensive PA plan is vital in implementing the commander's communication strategy. The communication synchronization approach fulfills adaptive planning and execution requirements and describes how the commander and staff will coordinate and synchronize themes, messages, images, operations, and actions to the lowest level to support joint force commander objectives. (See JDN 2-13.) PA planners articulate and synchronize the plan throughout the MDMP. The PA plan provides a detailed overview of PA activities and associated support requirements from across the staff and subordinate units. PA planners incorporate VI capabilities, including COMCAM, during planning activities. See JP 3-61 for more information on VI.

5-4. PA leaders employ a mix of three methodologies for planning:

- Troop leading procedures.
- Army design methodology.
- Military decision-making process.

See discussions of planning and the operations process in ADP 5-0.

PRINCIPLES OF THE OPERATIONS PROCESS

5-5. PA professionals must understand the principles of the operations process:

- Drive the operations process.
- Build and maintain situational understanding.
- Apply critical and creative thinking.

COMMANDER DRIVEN

5-6. Commanders drive the operations process through understanding, visualizing, describing, directing, leading, and assessing operations. The *commander's visualization* is the mental process of developing situational understanding, determining a desired end state, and envisioning an operational approach by which the force will achieve that end state (ADP 6-0).

5-7. Communication of the commander's visualization across the staff facilitates shared understanding and purpose and aids course of action development during planning. Commanders express their visualization through the following:

- Commander's intent.
- Commander's planning guidance.
- CCIRs.
- Essential elements of friendly information.

5-8. PA leaders must understand the commander's intent. Chapter 2 explains that the PA leader must have unfettered and timely access to the commander. It is through this access that Soldiers gain the commander's intent directly from the commander. By receiving and fully understanding the commander's intent, PA staffs can develop PA courses of action and take appropriate initiative when unforeseen opportunities arise.

5-9. The commander's planning guidance broadly describes when, where, and how the commander intends to employ combat power to accomplish the mission within the higher commander's intent. PA leaders and staffs use this planning guidance to develop flexible and effective options. PA leaders and staffs must also provide concise and accurate input to the commander to help modify plans throughout the planning process.

5-10. Identification of CCIRs focus information collection on the relevant information required to make critical decisions throughout the conduct of operations. The two components of CCIRs are friendly force information requirements and priority intelligence requirements. PA leaders play a critical role in identifying CCIRs in the information environment. PA leaders play a critical role in identifying CCIRs in the information environment, as they are trained to recognize OPSEC. PA leaders continuously assess information environments for elements that pertain to CCIRs. The PA staff submit CCIRs to the commander during the staff planning process. When approved, the commander dedicates assets to collecting the information. PA CCIRs should identify and support assessments on items in the information environment that will directly aid the commanders' understanding of the impact of tactical and operational activities on the mission objectives. CCIRs can include physical activities of friends, allies, or opposition forces as well as social media activities or opposition activities to influence publics against the commander's desired outcomes.

5-11. Essential elements of friendly information identify those elements of friendly force information that, if compromised, can jeopardize mission success. PA planning incorporates constant awareness of essential elements of friendly information in conjunction with communication planning throughout the execution of the commander's communication strategy.

SITUATIONAL UNDERSTANDING

5-12. Situational understanding is the product of applying analysis and judgment to relevant information to determine the relationships among the operational and mission variables to facilitate decision making. Throughout the operations process, PA staffs share their understanding of their particular situation and provide feedback to the higher headquarters. Several tools assist PA leaders in building situational understanding and creating a shared understanding across the command and force:

- Operational and mission variables.
- Running estimates.
- Intelligence.
- Collaboration.
- Liaison.

CRITICAL AND CREATIVE THINKING

5-13. PA planners apply critical and creative thinking throughout the operations process. This process assists in situational understanding, decision making, and directing action. Critical thinking helps PA leaders identify causes of problems, arrive at justifiable conclusions, and make good judgements. Creative thinking involves creating something new or original. Creative thinking leads to new insights, perspectives, approaches, and new ways of understanding problems and conceiving ways to solve them. (See ATP 5-0.1 for creative thinking tools and techniques.)

MILITARY DECISION-MAKING PROCESS

5-14. PA participates in all steps of the MDMP. PA planners work with the staff during mission analysis to help commanders understand the situation and develop their commander's visualization. During steps 3 and 5 of the MDMP, the PA staff provides recommendations to support the commander in selecting a course of action. After the commander makes a decision, the staff prepares the operation plan or order that reflects the commander's intent, coordinating all necessary details.

5-15. The PA staff contributes products and input throughout the MDMP. Unit and organizational planning standard operating procedures (SOPs) dictate specific requirements, templates, and products. Generally, PA planners prepare the following products as part of the MDMP and staff briefing:

- Appendix 1 (Public Affairs Running Estimate) to Annex J (Public Affairs) of the operation order.
- Commander's communication strategy.
- PA input into mission analysis.
- Proposed PA guidance.
- Proposed themes, messages, narratives, and talking points.
- Information environment assessment.
- Communication plan.
- PA input to paragraph 3 of the operation order.
- Annex J (Public Affairs) of the operation order.

5-16. The MDMP consists of a series of steps that have various inputs, a method (step) to conduct, and outputs, that lead to an increased understanding of the situation and facilitate the next step. Planners generally perform these steps sequentially; however, they may revisit several steps as they learn more about the situation before producing the plan or order. ADP 5-0 provides a detailed explanation and diagram of the seven MDMP steps, key inputs, and key outputs.

5-17. PA leaders and staffs must articulate and synchronize PA planning within the MDMP. Commanders do not develop separate communication plans. Instead, commanders develop plans with communication built in from the beginning.

STEP 1: RECEIPT OF MISSION

5-18. During the receipt of mission step of the MDMP, PA planners seek to ascertain higher headquarters PA guidance, determine the commander's intent, gather necessary tools and information required to advance planning, and begin to organize initial information to foster effective planning coordination and collaboration across the staff.

Public Affairs Key Inputs

5-19. Key PA planning inputs during this step include higher headquarters orders, PA guidance, and directed PA posture (if applicable). PA planners should also accumulate and make frequent reference to Army and joint PA doctrine, unit planning SOPs, and any other existing information relevant to the mission. Such information can include existing information environment or media assessments.

Public Affairs Key Outputs

5-20. Key PA outputs for step 1 of the MDMP include development of the initial PA running estimate and the proposed commander's communication strategy. (See paragraph 5-26 for the commander's communication strategy in step 2 of the MDMP.)

Public Affairs Running Estimate

5-21. The PA running estimate is a planning product that captures factors capable of impacting the mission. PA staff use it to comprehensively capture and present section-specific information to the commander and staff with limited time available. As a continuously evolving tool and product, the PA running estimate can differ in form and information depending on the step of the MDMP in which it is being used.

5-22. PA planners develop an initial PA running estimate early in the MDMP. As soon as possible after the receipt of a mission or guidance from a higher headquarters, PA planners seek out specifics. They determine the facts, assumptions, and constraints that may affect possible courses of action (COAs). They also help to determine any essential, specified, or implied tasks in step 2 of the MDMP specific to PA delivered in the higher headquarters orders or guidance.

5-23. PA running estimates build on initial running estimates as planning continues or once an operation commences or develops. As PA planners receive more information during mission analysis and subsequent steps of the MDMP, they incorporate it into their running estimate. PA running estimates continuously capture and present both PA-related information and planning factors as well as outline proposed PA actions capable of supporting the commander's intent.

5-24. As planning finalizes and operations commence, PA running estimates evolve. These estimates include a PA assessment intended to provide the commander and staff with an overall snapshot of the information environment. PA running estimates also include proposed and ongoing PA actions and their intended or observed effect on an overall operational area.

5-25. PA running estimates and assessments take many different forms, but present much of the same information. Unit planning SOPs should locally formalize expectations and requirements for planning products and their associated submission timelines. (See Appendix B for PA running estimate templates.)

Commander's Communication Strategy

5-26. The commander's communication strategy is essentially the commander's intent for PA. Initially PA staff develop the commander's communication strategy during the receipt of mission and mission analysis steps of the MDMP. These planners brief the strategy for approval during the mission analysis briefing.

STEP 2: MISSION ANALYSIS

5-27. During the mission analysis step of the MDMP, PA planners continue to receive and analyze higher headquarters orders and updated PA guidance. Information is organized within the PA running estimate and is capable of being shared across the staff to facilitate planning.

Public Affairs Key Inputs

5-28. Key PA planning inputs during this step continue to include higher headquarters orders and PA guidance. The mission analysis step of the MDMP tends to yield a large amount of new information about the operational area, environment, and enemy. PA planners should seek out existing information environment assessments or those assessments being updated at higher headquarters echelons or within parallel staff sections (such as intelligence and IO). PA planners work with other staff sections to both ascertain and provide available information of value for respective planning initiatives.

Public Affairs Key Outputs

5-29. Key PA outputs include an updated PA running estimate and the proposed commander's intent and commander's communication strategy. Additionally, PA planners develop recommended themes, messages, narratives, and talking points supporting the commander's communication strategy. PA staff present proposed outputs for approval at the mission analysis briefing.

STEP 3: COA DEVELOPMENT

5-30. During COA development, PA planners work with the staff to help develop proposed COAs capable of meeting the commander's intent. As different COAs begin to emerge, PA planners determine how to align and employ PA assets and capabilities within a specific COA to best support the commander's communication strategy.

5-31. Throughout COA development, the commander and staff depend upon the PA planner to help answer:

- What are the PA assets and capabilities available or needed to support this COA?
- How should available PA assets be used to support accomplishment of this COA's key tasks?

- What is the proposed task-organization and associated support requirements?
- What are the risks to the commander's communication strategy associated with this COA?
- What opportunities present themselves within the proposed COA?

Public Affairs Key Inputs

5-32. Key PA planning inputs during this step include PA running estimates and updated information environment assessments.

Public Affairs Key Outputs

5-33. Key PA outputs include a proposed concept of PA support capable of supporting the COAs that the staff and commander consider as well as an updated PA running estimate. Proposed concepts of support for PA often identify associated tasks to units and staff to support PA actions proposed in COAs. Staff need to identify and highlight these proposed tasks as early as possible in both the PA running estimate and orders to avoid surprising the staff and subordinate units.

5-34. The concept of PA support identifies how PA assets will align and operate to support the commander's communication strategy in a proposed COA. Typically, PA staff present COAs on a single page slide or document. The staff includes important and relevant information such as—

- PA assets available and their proposed task organization.
- Locations of PA assets, identified media, and key communications nodes and infrastructure.
- Key tasks supporting the commander's communication strategy.
- Identified communications risks or opportunities.

5-35. Concepts of PA support focus around a common operational picture (COP) with those of other staff sections. Frequently a map diagram contains important graphic control measures. COPs provide a single display of relevant information within a commander's area of interest and are based on common data and information shared by more than one commander. PA assets and augmentation must be annotated and incorporated into the unit COP for commander awareness and planning. Retasking is then required to support new mission sets.

5-36. Formats and methods vary regarding the presentation of proposed concepts of support for PA. Unit planning SOPs should locally formalize content, format, submission timelines, and briefing requirements for PA planning products. No single format is required when presenting proposed concepts, refer to higher headquarters PA units for a template.

STEP 4: COA ANALYSIS

5-37. During COA analysis, PA planners participate in war gaming and other analysis aimed at identifying difficulties or coordination problems associated with various proposed COAs and what effect they may have on the overall operation. In identifying and considering the possible effects of a proposed commander's communication strategy within a specific COA, PA planners seek out all available sources of information and historical assessment.

5-38. Throughout step 4's COA analysis, the commander and staff depend upon the PA planner to help answer:

- How will identified key publics perceive the COA's proposed actions?
- How will critical or adversarial media spin the results of the COA's proposed actions?
- What overall impact will the COA's proposed actions have on the information environment?
- What opportunities could emerge as a result of the proposed COA?
- What are the residual risks associated with the proposed COA?

Public Affairs Key Inputs

5-39. Key PA planning inputs during this step include the proposed concept of PA support for all COAs being considered as well as an updated PA running estimate. During COA analysis PA planners gather and analyze as much information about the current information environment as possible, to include on-ground media elements and target audience in the operational area.

Public Affairs Key Outputs

5-40. Key PA outputs include refined concept of PA support that reflect and incorporate what was learned during war gaming and analysis. PA planners also leave COA analysis with criteria they will use to assess the effectiveness of the commander's communication strategy. The last output PA planners have is an updated PA running estimate.

STEP 5: COA COMPARISON

5-41. During COA comparison, PA planners work with the staff to evaluate proposed COAs independently of each other and against set evaluation criteria approved by the commander. Step 5 aims to identify the strengths and weaknesses of proposed COAs, weight them accordingly, and recommend a sole COA most likely to accomplish the commander's intent.

5-42. Throughout the COA comparison, the commander and staff depend upon the PA planner to help answer:

- Which proposed COA best facilitates the commander's communication strategy?
- What are the assessment criteria used to measure the effectiveness of the commander's communication strategy?

Public Affairs Key Inputs

5-43. Key PA planning inputs during this step include a refined concept of PA support for each COA under consideration. Another input for step 5 is an updated PA running estimate. Lastly, PA planners clearly define assessment criteria for each COA's ability to facilitate the commander's communication strategy.

Public Affairs Key Outputs

5-44. Key PA outputs for COA comparison include a recommended concept of PA support that aligns with the staff's recommended COA. Additionally, PA planners produce an updated PA running estimate focusing on the recommended COA and its associated concept of PA support.

STEP 6: COA APPROVAL

5-45. At the COA approval step of the MDMP, the commander reviews the staff's evaluations of proposed COAs, the proposed COA, and ultimately selects and approves a COA. During this step, PA planners advise the commander of the proposed concept of PA support in each COA and their methods of assessing each COA's ability to facilitate the commander's communication strategy.

5-46. Throughout this step, the commander and staff depend upon the PA planner to help answer the following:

- What are the advantages and disadvantages of each COA at implementing the commander's communication strategy?
- Which proposed COA best facilitates the commander's communication strategy?
- What is the proposed concept of PA support for the recommended COA?

Public Affairs Key Inputs

5-47. Key PA planning inputs during this step include refined concepts of PA support for each COA under consideration as well as an updated PA running estimate. The PA planner stands prepared to present in detail the concept of PA support associated with the staff's recommended COA to the commander.

Public Affairs Key Outputs

5-48. Key PA outputs following COA approval include the approved concept of PA support that aligns with the commander's selected COA. An updated PA running estimate is produced capturing information intended as Appendix 1 (Public Affairs Running Estimate) to Annex J (Public Affairs) in the upcoming operation order. Lastly, the PA key outputs include a refined commander's communication strategy.

STEP 7: ORDERS PRODUCTION, DISSEMINATION, AND TRANSITION

5-49. During the final step of the MDMP, the staff prepares the order reflecting and directing implementation of the commander's selected COA. During this step, PA planners write the plan for implementing the concept of PA support aligned with the selected COA, ensuring inputs are included in the base operation order. Unit PAO ensures vertical and horizontal PAO coordination and sharing with higher, lower, left, and right of supporting and supported PA units. Often, this is done outside the operations process.

Public Affairs Key Inputs

5-50. Key PA planning inputs during this step include the approved concept of PA support and an updated PA running estimate.

Public Affairs Key Outputs

5-51. Primary PA outputs include Annex J (Public Affairs) and both associated appendices. Unit planning SOPs dictate required PA appendices, either Appendix 1, Public Affairs Running Estimate, or Appendix 2, Public Affairs Guidance. Frequent inclusions to these appendices are public affairs guidance (PAG); proposed public affairs guidance (PPAG); themes, messages, narratives, and talking points; and individual Soldier media cards intended for large-scale reproduction and distribution.

5-52. PA planners also develop a detailed communication strategy assessment. Annex J (Public Affairs) and the operation order without the annex do not require the communication strategy assessment. However, if input from staff sections or subordinate units is required to conduct an accurate assessment, PA planners must voice these requirements during orders production. Assessment plans include both measures of performance and measures of effectiveness relating to implementation of the commander's communication strategy.

COORDINATION AND SYNCHRONIZATION

5-53. The PAO is the primary coordinator of public information and often has responsibility to lead synchronization efforts with IRCs. Throughout planning, staffs meet and conduct mission analysis, develop or update running estimates, provide input to the planning process, and develop respective sections of the operation plan or order. PA planning requires coordination and synchronization of public information and events. PA staff integrate public communication into operational planning while coordinating and synchronizing communication efforts with other IRCs such as IO, MISO, and civil affairs as part of the IO working group. PA and IO have effects that overlap in the IO working group, which require coordination and synchronization with IRCs. Lines of effort relationships always require coordination and synchronization during planning and execution.

5-54. PA staff remain aware of communication implications during operations. Communication occurs with actions, words, and images while Soldiers execute an operation. During planning and execution, PA personnel consider the impact that actions, words, and images have on stakeholders. PA personnel also identify and plan for legal and operational risks. PA staff endeavor to ensure information and communication is consistent and credible.

5-55. PA staff coordinates with logistics and communications staff to ensure resources are available for PA support during operations. PA staff include coordination and support requirements between PA activities at higher and lower level headquarters in planning. This staff considers the necessary support requirements throughout the organization, including those without organic PA assets. PA and VI coordination and synchronization during the planning process helps to identify VI requirements. (Reference JP 3-61 for more information on VI.)

5-56. Coordination of PA tasks with staff sections and subordinate units is essential. PA personnel coordinate directly when possible. Proper coordination de-conflicts staff efforts and identifies the PA force requirements for the operation. A properly coordinated plan provides the commander and staff a comprehensive understanding of how PA supports operations.

THE ARMY COMMUNICATION SYNCHRONIZATION PROCESS

5-57. The Army communication synchronization is a process to coordinate and synchronize narratives, themes, messages, images, operations, and actions to ensure their integrity and consistency to the lowest tactical level across all relevant communication activities. PAOs conduct and normally lead the Army communication synchronization process. PAOs can adapt this process to meet the needs and systems of the Army while maintaining the inherently joint and interagency capability of CCS. Major organizations may dedicate military PAOs to assist their leaders by preparing talking points to align with key messages (JDN 2-13).

Plan

5-58. During planning, the PAO accounts for guidance from higher headquarters including the OCPA's current planning guidance. In support of the joint planning process or the MDMP, the PAO localizes themes and messages and ensures PA operations nest in the commander's intent. As needed, the PAO integrates these themes and messages with the unit targeting cycle to synchronize with nonlethal effects and IRCs.

5-59. The PAO integrates PA tasks with unit missions. Because units often establish battle rhythm and other recurring events at echelon, the PAO actively integrates PA tasks with higher headquarters PA, community engagement, and information synchronization as necessary. Common events include regularly scheduled PA meetings at the division and corps levels. PAOs often integrate installation PA events with events at other echelons, but events may be separate.

5-60. The PAO oversees a UPAR program in accordance with AR 360-1 and establishes procedures to synchronize the UPAR's efforts with the commander's intent. The PAO develops specific synchronization procedures.

Prepare

5-61. During preparation, the PAO develops command information products, conducts rehearsals for PA operations, prepares SMEs to speak with the media, and otherwise conducts those activities that enable successful PA operations. Common rehearsals include media facilitations, media interviews, and other types of PA training that enables personnel in the unit to speak with members of the media and the American public. Common communication synchronization requirements during planning include vetting command information with SMEs, informing and refining media engagement plans with higher headquarters PA staffs and commands, and coordinating with members of the media and public for administrative and scheduling requirements.

5-62. The PAO continues to coordinate IRCs with key staff members to synchronize themes, messages, narratives, and talking points throughout the preparation. In a joint environment, the PAO also participates in multi-Service coordination. In some situations, other government agencies may have authority over information-related operations. Recognizing that authorities differ based on areas of operations and intended audiences, the PAO actively seeks and includes representatives whose participation aids the communication synchronization process.

Execute

5-63. During execution of a plan, the PAO provides current assessments across echelons to assist in synchronizing and deconflicting IRCs (FM 6-0 and FM 3-90-2). Recognizing that public narratives are not directly controllable, the PAO seeks to constantly refine themes and messages to ensure they stay relevant and effective in shaping narratives and keeping identified publics informed. The PAO additionally identifies emergent misinformation and disinformation to synchronize other IRCs and to develop awareness of how this information affects current narratives. (See Appendix A for countering misinformation and disinformation.) The PAO may recommend addressing misinformation or disinformation via counter-

messaging. Release authority is a necessary and critical component to the capability to address misinformation and disinformation responsibly and rapidly. Unambiguous release authority is a necessary and critical component to the capability to address misinformation and disinformation responsibly and rapidly.

Assess

5-64. Assessments are an ongoing process. Commanders use assessment to integrate relevant, reliable feedback into planning and execution, thus supporting their decision making regarding plan development, adaptation, and refinement, as well as adjustment of operations during execution. Assessment provides information about the current state of an operational environment, the progress of an operation, and recommendations to mitigate or overcome discrepancies between actual and predicted progress. It also reveals how specific capabilities, such as IRCs, contribute to this progress. (See JP 5-0 for details on assessment.)

5-65. In support of communication synchronization, the PAO uses public relations research tactics, techniques, and procedures to inform key staff members. Common examples of assessments in the communication synchronization process are media content analysis, digital communication and social media metrics, key performance indicators, and estimation of the total exposure of identified publics to command messaging. Ultimately, PAOs seek to confirm or deny that identified publics have been successfully informed and have retained command messaging. When shared, these metrics assist PA staffs at multiple levels of command.

ARMY COMMUNICATION SYNCHRONIZATION FUNCTIONS

5-66. Specific communication synchronization events differ by echelon. PAOs adapt to whichever systems and processes staffs implement at their respective units. However, Army communication synchronization events fit broadly in two categories: integrating functions and coordinating functions.

Integrating Functions

5-67. Integrating functions, such as commander communication synchronization working groups, are activities that grant approval for planning, or seeking to modify, guidance already approved based on new information or intent. PAOs propose themes, messages, narratives, and talking points, for command guidance and approval. PAOs additionally update the chain of command on the progress of current PA objectives. During integrating functions, PAOs seek to gain or confirm command approval in the same manner commanders seek approval for training calendars.

5-68. Generally, PAOs lead communication-focused integrating functions and serve as participants, supporters, or principal briefers on other integrated functions. Common integrating functions are XO or chief of staff briefings, decision briefings, training meetings, and battle update briefings.

Coordinating Functions

5-69. Coordinating functions are those activities that Soldiers use to develop and coordinate activities to achieve objectives. As with integrating functions, PAOs often lead communication-focused coordinating functions. For example, a PAO may lead an operational planning team in support of an upcoming major media facilitation, or may coordinate with PA staffs at different installations and commands to ensure command information is accurate. Coordinating functions also serve the important purpose of synchronizing PA staffs across echelons.

5-70. PAOs execute coordinating functions after the commander has approved communication objectives, or before the commander has approved communication objectives in a pre-decisional capacity. For example, a PAO may coordinate with other staff sections while developing COAs to ensure the COAs are feasible, suitable, distinguishable, acceptable, and complete.

5-71. Common coordinating events can reoccur regularly or just one time. Regularly scheduled events can include UPAR meetings, monthly BCT or division PA meetings, staff synchronization meetings, and email

reports. One-time events can include content operational planning teams, direct coordination with SMEs, conference calls with geographically separated members of PA staffs, and installation or corps PA meetings.

COMMUNICATION PLANNING

5-72. Communication planning is a systematic process to develop and deliver intended messages that target audiences receive and understand. It involves selecting the audience and determining an appropriate channel to reach the audience. Communication planning is driven by the commander's focus on achieving communication objectives. Communication planning is continuous and occurs not only during deployed operations but also during training events and at home station. These objectives assist by giving focus and direction to those developing strategies and tactics, provide guidance and motivation to those implementing the program, and spell out criteria for monitoring progress and assessing impact.

5-73. Communication planning uses a four-step process—research, planning, implementation, and evaluation—commonly referred to as RPIE. The PA planner examines a problem or issue and analyzes available and necessary resources to execute the plan in support of the commander's communication objective. Through research, the PA planner thoroughly examines the nuances behind a particular problem or issue, identifies affected publics and stakeholders, and accounts for the time required to complete the plan in time for effective implementation. Communication planning that minimizes data collection and analysis may result in lackluster receipt or delivery of intended messages. During the assessment and evaluation of the communication plan's execution, planners ensure receipt and delivery meet the intent. Implementation of the plan is execution of the operations in the communications plan, or, as opportunities arise to enact the commander's communication strategy.

5-74. The PA staff assists the commander in communicating information and messages about the force and operations to internal and external audiences. The commander expresses communication objectives in terms of desired effects. PA staffs develop communication plans that result in clearly specified, meaningful communication objectives that support the commander's communication strategy and contribute to mission success.

5-75. During planning, PA planners further define communication objectives. They clarify execution of the commander's communication strategy supported by PA core tasks to achieve those objectives. PA staff receive, collect, analyze, and interpret data; identify and analyze publics; and develop tailored messaging designed for effective communication.

5-76. This planning process is ongoing and requires the PA staff to evaluate continually the effectiveness of the communication plan and overall communication efforts. Evaluation involves quantitative and qualitative analysis of the information environment and effectiveness of the execution of the plans and PA operations.

5-77. Communication planning is also necessary in times of crisis. Successful commanders anticipate and plan for crises ahead of time. PAOs assist in this planning. They advise the commander on issues, crises, or emergency communication as part of PAO responsibilities.

5-78. Communication planning results in a communication plan. See Appendix E for detailed guidance on communication plan. PA staff design a communication plan within the bounds of legal authority. The plan aims to impact the knowledge, attitude, and behavior of specific audiences. Commanders can use a communication plan to—

- Raise morale, build understanding, dispel rumors, affect attitudes, or change behavior. Commanders may want to encourage publics to think, act, or feel a certain way (for example to stop smoking). This encouragement can involve appealing to feelings, self-interest, or a person's imagination.
- Prevent behaviors detrimental to the force such as intoxicated driving, abuse, or harassment. In instances such as these, PAOs develop communications focused on reinforcing the positive characteristics of a values-based organization.
- Prevent misunderstandings. Even a small misunderstanding can create large problems for an organization. PAOs can ensure good communication by putting themselves in the publics' position, paying attention to their needs, and getting to know them.

- Protect the higher command from misinformation, disinformation, and adversarial propaganda.
- Present a point of view. Often, PAOs only need to do this to influence a behavior.

CRISIS COMMUNICATION

5-79. In the event of a crisis, PA staff ensures a communication plan exists to mitigate the problem. For PA, a crisis is an event that affects an organization's long-term sustainability and reputation. It has the potential to create significantly negative media coverage. An issue is an internal or external factor with potential, at times seriously, to damage an organization's reputation if not managed well. Issues often gradually build and can become crises if not properly mitigated. A crisis communication strategy aims to establish and maintain the commander's credibility while dealing with the crisis responsibly, compassionately, transparently, and as swiftly as possible. An effective communication plan during crises will not always guarantee a positive outcome. However, communicating during crises is absolutely essential for the commander to attain the best achievable outcome. A crisis is not an opportunity to message.

CRISIS MANAGEMENT PRINCIPLES

5-80. Effective crisis management involves crisis communication. Crises can happen, and issues can develop while deployed or at home station. PA staffs must be prepared to act accordingly. Every member of the PA staff understands and implements the eleven principles of crisis management. These staff members develop an understanding of the role that PA has in managing crises.

Anticipate Possible Crises within the Command

5-81. A staff also war-games potential crises. When at home station, PA staffs identify the possible internal and external agencies involved in a crisis. The staffs rehearse all statements for the media as well as internal and external audiences. Such war-gaming is essential for crisis preparation.

5-82. PA staffs should identify the most likely crises both within the command and external in accordance with the commander's communication synchronization. Staff should prepare battle drills and responses from the PA perspective to support the commander's overall goals. Building a relationship before a crisis occurs facilitates solving the problem more easily. PA staffs work with key publics and third-party allies by building ongoing relationships, such as off-post neighbors, elected officials, business leaders, and community emergency response crews. Before a crisis occurs, PA staffs also may educate key stakeholders on potential issues to mitigate the effects of that crisis. These stakeholders might include external agencies such as FEMA, the Federal Bureau of Investigation, the Environmental Protection Agency, as well as local and regional contacts from the police, hospitals, or county.

Be Part of the Internal Response Task Force

5-83. As part of crisis management, PAOs prepare and rehearse SOPs within the internal task force. As part of this force, PAOs establish a crisis action team. The internal response force is a cross-functional team that advises the command in immediate response to an event or crisis. This team ensures coordination and synchronization of communication capabilities among all sections involved, to include the commander and relevant section leaders. PAOs also write SOPs to ensure timeliness and accuracy of any necessary actions. PAOs gather information only from highly reliable sources to get and give key facts. Efficient PAOs coordinate with the necessary offices and provide as many facts as possible, as early as possible, as long as necessary. They avoid conjecturing or using unconfirmed reports. PAOs base their reports and briefings solely on facts.

Know Target Publics

5-84. As part of crisis management, PAOs know their target publics. When a crisis arises, these are often the key communication stakeholders PAOs need to inform quickly and to the fullest extent possible. PAOs identify these groups and individuals well before a crisis. Part of crisis anticipation involves knowing how to reach these groups and individuals. PAOs identify and record such information while developing the crisis-focused communication plan. Additionally, PAOs include knowing their internal audience during a crisis. They

answer the relevant question: What do Soldiers, their Families, and stakeholders connected to the affected organization need to know during both issue reveal and once the issue becomes a crisis?

Identify the Central Spokesperson

5-85. PAOs identify the central spokesperson before a crisis occurs. A crisis requires a spokesperson who is at or near the appropriate level of command, or is the most knowledgeable (such as the SME). The public and audience often want to hear from the commander. Ideally, the commander responsible for the organization handling the crisis is articulate and receives specific media training to handle high-pressure situations. PAOs ensure whomever speaks for the organization fully understands the commander's intent themes, messages, narratives, and talking points, outlined in the approved PAG or the PPAG.

Work with Media

5-86. During crisis management, PAOs work with media and encourage them to cooperate. As a crisis develops, media attention can cause a situation to significantly impact the organization or command more than anticipated. During a crisis, PA staff remain open and accessible to the media. The media often requests information about an ongoing crisis or situation. To prevent the media or other stakeholders from developing their own narrative in the absence of facts, PAOs apply the DOD principles of information. PAOs ensure they deliver accurate information approved for release frequently and as often as possible. (See DODD 5122.05 for the DOD principles of information.)

Maintain Appearance and Tone

5-87. PAOs maintain their physical appearance and the tone they convey. Information needs of key publics change as a crisis unfolds. When PAOs understand the audience, or key publics, they better package that releasable information to ensure they deliver the right message. Depending on the situation, PAOs and command spokespeople consider applying the following tactics, tones, or messaging when delivering information:

- Practice sympathy, empathy, care, and concern.
- Commit to doing everything possible for those affected by a crisis.
- Investigate to determine the cause.
- Desire to avoid any other, or further, damage.
- Desire to ensure publics that the Army is doing everything possible to prevent a reoccurrence.
- Determine what the commander can do to avoid similar situations in the future.
- Establish hotlines for concerned citizens.
- Make information available or post it on digital media platforms at regular intervals.

Mind the Emotions and Intellect Pendulum as a Crisis Unfolds

5-88. During crisis management, PAOs address the emotions and swinging intellect as a crisis unfolds. PAOs recognize there is a time for cold, scientific facts and circumstances where publics will not hear these facts. Generally, groups of professionals can discuss issues. However, audiences in public hearings or in demonstrations tend to give in to emotions and away from facts. A commander who addresses a crisis as soon as it begins to develop often has a greater opportunity to win with intellectual arguments; that commander has more alternatives for action during the crisis.

Command the Information

5-89. The ninth crisis management principle is command the information. Sometimes a crisis unfold in unexpected ways. PAOs stay ahead of the story by maintaining follow-on press releases, statements, and ensuring responders or support network officials are available for escorted media interviews. Commanding the information involves being perceived as having nothing to hide. PAOs avoid giving publics a reason to

speculate on causes or disclosing specifics that may be part of an administrative, criminal, or safety investigation. Additionally, PAOs command the information by—

- Understanding the media’s interests.
- Staying tight organizationally, but loose tactically.
- Remaining flexible.
- Continuously re-examining options.

Develop Third-Party Allies and Alliances

5-90. During crisis management, PAOs develop third-party allies and alliances. An outside agency’s favorable perception carries more support with all publics. To manage the crisis, PAOs develop relationships with elected officials, emergency response planning councils, and assistance agencies like the local Red Cross, civilian law enforcement, and chambers of commerce well before the crisis.

Constantly Evaluate Messages and Their Feedback

5-91. The last principle involves evaluating sent messages and received feedback. PAOs keep lines of communication open after the crisis. Internally, they review what the crisis taught the commander about the effectiveness of the commander’s crisis management. Externally, PAOs have a plan to reestablish the commander’s good will with affected publics. Opinion research can tell PAOs how well the unit weathered a crisis and point the way for communication between the crises. PAOs evaluate sent messages and received feedback by—

- Watching the situation on an hourly or daily basis to include monitoring media constantly throughout the crisis.
- Maintaining contact with allies, publics, and stakeholders.
- Using surveys, personal and public meetings, or focus groups to gauge information needs and perceptions. PAOs always seek proper authorities for conducting the aforementioned tactics.

PROPOSED PUBLIC AFFAIRS GUIDANCE

5-92. *Public affairs guidance* is constraints and restraints established by proper authority regarding public communication activities (JP 3-61). It begins with the development of PPAG that recommends mission-specific guidance to support public discussion. PAG normally includes approved messages, talking points, and anticipated questions and answers used for preparing Soldiers for media engagements. PA personnel use this formal tool to shape and guide the Army’s public position on issues in response to questions (actual and anticipated) from the media.

5-93. PA personnel develop PPAG in time to coordinate and publish initial PAG with an order or before deployment if necessary. Coordinated PAG helps ensure those involved have unified voice and provides clear guidance on the authorization to release information to the media regarding the topic or issue. PAG is an internal document—Appendix 2 (Public Affairs Guidance) to Annex J (Public Affairs) of the operation order. This internal document assists leaders in units and organizations when discussing an upcoming deployment, exercise, or operation during interactions with the media and the public.

PROPOSED PUBLIC AFFAIRS GUIDANCE PREPARATION

5-94. Commanders are responsible for developing and submitting PPAG through higher headquarters for approval at the appropriate level for designated military training exercises, multinational activities, contingencies, and events that could attract U.S. national and international media interest, as determined by the first general officer in the chain of command. A PAO higher headquarters can direct for development to PPAG, or developed independent of guidance for a known exercise or event and pushed higher for approval.

5-95. PPAG development includes PAOs researching the recommended PA posture, background on the subject, contingency statements, messages, talking points, anticipated media questions and answers, community engagement guidance, and details governing the release of information and imagery to the public. PAOs can also research the timing, location, means, and other details governing the release of information

to the public for the PPAG. PAOs write PAG to conform to operations security and privacy requirements. (See appendix B and DODI 5405.03 for detailed PPAG information.)

PROPOSED PUBLIC AFFAIRS GUIDANCE COORDINATION

5-96. DOD policy requires that the Office of the Assistant to the Secretary of Defense for Public Affairs (ATSD [PA]) receives PPAG from combatant commands and others, as required, for all major operations. Upon receipt of the order, the commander, through the PAO, requests PAG from higher headquarters. PAG may be included in alert orders or operation orders. Commanders of major units direct their PAOs to prepare PPAG to forward the proposal through major commands and combatant command PA channels to the ATSD (PA). Commanders of combatant commands ensure that the staff coordinated the PPAG with appropriate organizations (such as embassies, country teams, host nation, governments, and subordinate commands) in the theater of operations whenever possible.

PUBLIC AFFAIRS ANNEX J

5-97. Based on information developed during the planning process and reflected in the PA running estimate, PA planners develop a concept of PA support to operations. This plan reinforces the strategic goals and operational objectives and provides the commander's intent for PA activities to inform identified key publics. During the orders production step of the MDMP, PA planners ensure that information critical to mission accomplishment and the commander's intent for PA is captured in the text of the base operation order. PA planners present the complete plan in Annex J (Public Affairs) in the operation order. Annex J must address all the PA related transportation, communications, billeting, equipment, and personnel resources required to support the plan. See appendix C for fundamental considerations, formats, and instructions for Annex J (Public Affairs) of the operation order.

5-98. Annex J (Public Affairs) of the operation order varies depending on the echelon and plan. It accounts for local requirements and limitations with these variations. Annex J (Public Affairs) must include the following key tasks, regardless of the supported operation:

- Coordinate frequently with operations, intelligence, legal, and foreign policy advisor staff to ensure the PAO has the latest information.
- Cover release authority for information and timing of information release.
- Include detailed procedures for all supporting commands for handling or forwarding information regarding queries, responses, interviews, and proposed news releases for clearance.
- Provide guidelines for release of imagery, which may include imagery taken by Soldiers on the battlefield, as well as guidelines for use of digital media, to include release authority for communication products.
- Include contact information to ensure subordinate units know who the release authority is and how to contact them.

5-99. Annex J (Public Affairs) dictates a unit's OPSEC review process before releasing information into the public domain as required by AR 530-1. Following this annex protects both Soldiers and commanders from unnecessary OPSEC violations. The annex directs PA personnel check the sources of information to ensure OPSEC violations do not occur during the newsgathering process. It also directs PA personnel to check for OPSEC violations when staff suspect a potential violation. The annex directs PA staff to protect information identified as too sensitive to be made public.

5-100. Annex J (Public Affairs) dictates that PA staff ensure units follow proper OPSEC measures when sending products concerning military facilities to media news organizations. If PA staff discover OPSEC violations, PAOs first request the media representative remove the sensitive information. If the media representative refuses, the PAO transmits the story or release over secure channels to the ATSD (PA) for handling. If PA staffs find violations after a news organization has published or broadcast a story, they report the violation to the accrediting command.

Chapter 6

Media Facilitation

MEDIA FACILITATION PROCESS

6-1. Media facilitation is the process of planning, preparing, executing, and assessing a media engagement. It occurs in tactical and home-station environments. Media facilitation provides assistance to civilian and military news media personnel, to include media embeds, to cover Army operations safely and effectively while speaking to Army leaders, Soldiers, and civilians. PA personnel must adhere to the DOD principles of information throughout the process. PA personnel must have access to information centers, operations centers, and adequate facilities to assist the media properly in receiving and telling the Army story.

6-2. Most media representatives strive to publish accurate, truthful, balanced stories without undermining, interfering, or misrepresenting the military, its operations, or activities. However, some stories may result in misunderstandings, errors, or criticisms. Commanders formulate and deliver accurate, timely, and culturally attuned messages to counter potential misperceptions and misunderstandings. When it comes to media facilitation, commanders also understand the impact of their actions on the publics' perceptions, attitudes, and beliefs of the media.

6-3. As a core task, media facilitation is integral to the success of the PA mission. Media facilitation enables PA personnel to identify requirements for a planned and unplanned media engagement or media event. Annex J (Public Affairs) in the operation order describes the plan for media facilitation. PA planners ensure Annex J (Public Affairs) captures detailed processes, procedures, and support requirements for traditional, nontraditional, and digital news media methods. As the information environment changes rapidly, PA staff stay prepared to support emerging technology needs and increased nontraditional media interests in Army operations and activities.

6-4. Media facilitation includes tasks such as the following:

- Assisting media representatives to enter an area of operations legally and safely.
- Registering and credentialing media representatives.
- Ensuring media representatives and SMEs understand ground rules for coverage.
- Helping the media representatives understand security policies and constraints that require their compliance if they wish to continue Army coverage.
- Arranging interviews and briefings.
- Coordinating unit visits and escorts.
- Assisting media representatives with transportation, messing, billeting, communication support, safety, and equipment.

MEDIA ENGAGEMENTS

6-5. A media engagement is a specified instance of media interaction between a spokesperson and a member of the media. PA staff can prepare an individual media engagement or a large-scale media event. Media engagements may be planned or unplanned and may include interviews, briefings, or press conferences. PAOs identify an approved spokesperson (such as an SME or the unit commander) to conduct the media engagement and provide media representatives with key information that specifically corresponds with their area of expertise.

6-6. Media engagements require the PA staff to plan for the event and coordinate with the media organization or representatives and all individuals involved. PAOs typically receive, discuss, and negotiate important information from the time that they receive the media query. Coordinating media engagement requests with higher headquarters PA staff may be necessary depending on the nature of the query. For

example, if the request is a national media query or has the potential to influence Service-level discussions, then the PA staff need to notify the higher headquarters PAOs. These PAOs often have insight on higher-level discussions and can provide sound PAG.

MEDIA ACCESS

6-7. When in an active PA posture, PA professionals take a proactive approach to media facilitation. They ensure media representatives have access to leadership and relevant information. PA staff coordinates access for media representatives while ensuring coverage does not disrupt or negatively affect operations.

6-8. Media embeds are media representatives embedded to provide coverage that helps Soldiers and the public have a complete understanding of an operation. PAOs and commanders understand that media embeds may report on an operation during this time. Commanders may have the media embed accompany them during their travels to units or to events in the area of operations. Embedding media in tactical level units, or with commanders, requires PAOs to provide media interaction training to the unit.

MEDIA KITS

6-9. PA staffs prepare and assemble media kits. Media kits are essential to proper media facilitation. When building a media kit, PA staffs ensure that they maintain OPSEC by removing any sensitive information. A media kit may contain the following items:

- A schedule of events, to include contingency arrangements.
- Strip maps, key routes, sites.
- Unit fact sheets, such as unit history or other unit specific information.
- Biographies of key personalities or keynote speakers.
- Copies of final approved keynote speeches (if possible).
- Relevant press releases, media advisories, or special events calendars.
- Relevant photos with captions.
- A video release list, containing hyperlinks or uniform resource locaters (commonly called URLs) to relevant video releases.
- Frequently asked questions.
- Army 101 information (such as command and organizational structure, rank structure, and other structures).
- PA points of contact.

6-10. While media kits are essential to media facilitation, they are also essential to spokesperson preparation. A media kit can assist a commander or designated spokesperson to prepare for an upcoming media engagement. Making sure to include responses-to-queries (RTQs) can provide the spokesperson with released information and assists in preventing inconsistent comments. Complete media kits include media representative background information, anticipated media questions, relevant key command messages and talking points, and fact sheets to help the spokesperson answer the media representative's questions. While unanticipated questions may arise, the information contained in the media kit will assist commanders or designated spokespersons develop their answers for the media engagement.

COORDINATION AND SUPPORT REQUIREMENTS

6-11. PA leaders and staffs ensure proper coordination and support from the start of planning and throughout an operation. PA staffs identify facilities capable of assisting the media in telling the Army story. PA planners identify these requirements in the PA running estimate and in Annex J (Public Affairs) in the operation order. PA staffs ensure that they identify the right Army personnel and equipment for media facilitation during planning. (For more on coordination and planning, see chapter 5.)

6-12. PA staffs make every effort to provide access, transportation, and communication capabilities to media representatives. Throughout the planning process and an operation, PA planners identify existing and projected media representatives along with their capabilities and requirements. These include information acquisition means, satellite communication capabilities, transportation needs, and language translation. PA

planners also provide an estimate of the logistics support required for embedded media such as billeting, food, security, and personal protective equipment. Transportation of media representatives must follow procedures and guidelines outlined in the operation order and DODI 5122.08.

6-13. Media escort personnel are facilitators appointed to help the news media representatives obtain accurate coverage of an operation or event. Escorts assist media representatives for the duration of their time with the unit, to include movement around the area of operations. While PA-trained personnel are the preferred escorts, they are not always available. An appointed escort receives training on interaction with media representatives, their information needs, and knowledgeable about the unit, mission, and area. Media escorts will not interfere in the reporting process unless they suspect OPSEC or ground rule violations. Ground rules clarify the left and right limits that media representatives or media organizations have during an interview or engagement. If an OPSEC or ground rule violation occurs, the media escort immediately executes the rules of media engagement prescribed by the PAO and contacts the PAO for additional guidance.

MEDIA OPERATIONS CENTER

6-14. The *media operations center* is a facility established by the commander to serve as the focal point for the interface between the military and the media during the conduct of military operations (JP 3-61). The MOC is the primary information center for media representatives. It provides commanders and PA staffs an unclassified venue to discuss operations with the media and provides journalists a place to obtain information quickly and efficiently.

6-15. PA planning answers the following when considering the establishment of a MOC:

- Does the operation require a MOC?
- Is augmentation required for MOC establishment and staffing?
- What is the MOC operational battle rhythm?
- What does the planning for a hasty MOC require?

6-16. A MOC provides the commander with PA personnel prepared to quickly provide RTQs and fulfill media facilitation requirements. The MOC provides the following benefits and functions:

- A single point of contact and information source for media within the theater.
- Briefings and enforcement of media guidelines and ground rules.
- Primary information release authority for the senior PAO.
- Coordination of news media coverage with various echelons.
- Coordination with unified action partners for each Service, agency, or country.
- Identification and communication of host nation's culturally sensitive topics to personnel in theater.
- Preparation for conducting press briefings and news conferences.
- Registration, sustainment, and movement of news media personnel.

6-17. As fully independent units, a TPASE and MPAD are currently organized, trained, and prepared to fulfill the requirement for MOC establishment and staffing. These units are designed specifically to serve as MOCs at theater, corps, or division echelons.

6-18. In most cases, MOC staffing requires augmentation either by individual PA-trained personnel or by Army PA units. Commanders can combine MPADs to form media sub-centers in forward battle areas. PA leaders may call on PA personnel from nondeployed commands and installation PA sections to augment MOC staff; however, PA leaders need to coordinate requests for individual augmentation through operational channels. PA leaders can augment with Reserve and Guard unit personnel on a voluntary basis.

MEDIA OPERATIONS CENTER ORGANIZATION

6-19. MOCs support the operational commander and are subordinate to the commander's PAO. PA Soldiers serve in all sections of the MOC. The commander coordinates with the PAO and staff to determine the MOC organization and staffing. Traditionally, a MOC has two distinct sections: a headquarters section and a media operations section.

6-20. The headquarters section includes the MOC's director, deputy director, NCO in charge, and select support staff. The MOC director and deputy work closely with and answer to the command PAO. The NCO in charge and support staff is normally task-organized to support tailored forward-deployed MOC teams or sub-MOCs. This task organization provides administrative support; coordinates lease and purchase contracting; sets up, operates, and maintains the unit's equipment; and conducts day-to-day operations of the MOC. The headquarters section is responsible for MOC communications, supply operations, vehicle maintenance, security, and other support functions as required.

6-21. The media operations section includes the PA Soldiers. The Soldiers are normally organized to support planning cells, a media facilitation section, and regional and local non-English speaking media. This organization is also responsible for media transportation, registration, badging and facilitation, as well as coordinating briefing area set-up, responses to query, and assisting in media content analysis.

6-22. When the commander establishes a MOC, PA staff adapt the organization of the MOC to the operational requirements. Commanders can also design the MOC to include a plans and operations (future and current operations) section, a media support and engagement section, command information section, monitoring and assessment section, and digital media section.

MEDIA OPERATIONS CENTER OPERATIONS

6-23. Army commanders know they will encounter media in any major operation. They typically deploy a PA unit as one of the first elements to establish the MOC. This is in anticipation of media facilitation requirements based on the following assumptions:

- Media representatives will arrive in an area of operations at the start of, and in most cases, before an operation begins without access to official information.
- Misinformation and disinformation is prevalent during operations when an established area of operations lacks an official source of military information.
- Current technologies aid in the proliferation of independent media across the area of operations, which requires a robust capability to analyze and assess the information environment.
- Media interest in noncombat operations will peak at the outset but may taper off over time. During a high-intensity conflict, media interest will remain high.

6-24. During joint operations, MOCs support and answer to the senior commander on a 24-hour basis. The unified commander usually establishes MOCs to support the news media in an area of operations. To achieve an initial operating capability, a MOC performs the following:

- Establish a "hasty media center" as the initial focal point for the news media until additional media support arrive.
- Establish communication with higher headquarters and other PA assets in theater.
- Begin to establish command structure and lines of authority.
- Request information release authority in the theater of operations.
- Begin coordinating with appropriate authority for leasing and purchasing contracts when necessary.
- Contact and begin to register news media personnel in the area.
- Begin RTQ from accredited media representatives.
- Provide media support with coordinated media access to subordinate units and with media escort as resources permit. Assist or conduct briefings and conferences.
- Coordinate media contact with units or individuals to include SME interviews.
- Prepare media kits; provide news releases, fact sheets, copies of transcripts for briefings and conferences, and copies of archived products.
- When other means are not available, help coordinate transportation (to and from interview sources), transmission of media products, and food and billeting.
- Provide limited media escort capabilities in the area. Units pre-establish standard operating procedures for MOCs for each theater of operation and for media operations in that theater.

A MOC will achieve full operational capability when it can conduct 24-hour continuous operations at full staffing with all sections and conduct all command-required functions for an indefinite period.

Accreditation versus Registration

6-25. Operations in the MOC entail accreditation and registration. Accreditation is the verification and validation that a person represents a legitimate commercial news organization (both U.S. and foreign). This means that accrediting governments or military organizations physically verify an applicant's affiliation with a specific news organization. When overseas, the host-nation government generally decides to accredit a news media organization in coordination with the combined or unified commander.

6-26. When the host nation does not require accreditation, the combined or unified commander has responsibility for this determination. Accreditation is normally performed at corps level or higher and in line with directives from Office of the ATSD (PA). (See DA Form 7674 [*Media Accreditation/Embed Application*] for more on accreditation.)

6-27. Media registration is part of the system that identifies and tracks media organizations movements and their locations in the area of operations. The information gained by registering media helps staffs in planning and conducting media logistics support and transportation, and in preparing subordinate commands for media encounters. It also helps commanders seeking to engage media regarding newsworthy events. A completed registration records correspondent names, agencies, contact information, and other relevant data. It also identifies which news media representatives or agencies have asked for military assistance and access, and which have agreed to the commander's media ground rules.

6-28. Registration procedure requires—

- The media representative to—
 - Complete the registration form.
 - Accept the media ground rules to include the hold harmless agreement and reimbursement agreement (see Appendix F for sample agreements). Both agreements will require a legal review prior to implementation.
- PA personnel to—
 - Gain a legal review of the hold harmless agreement and reimbursement agreement.
 - Provide a copy of the documentation to the media representative.
 - Verify the media representatives have required gear to accomplish their mission. Be prepared to issue personal protection gear if required using a DA Form 2062 (*Hand Receipt*).
 - Attach both agreements to the registration form and file form in the media reception log.

Media Access and Support

6-29. MOC operations ensure media access and support. Army and media representatives who have a vested interest in military activities maintain a continuous dialogue. Open and independent reporting is the principal means to cover military events. Such reporting facilitates media representatives' understanding of military events and occurrences so their coverage is accurate and timely. PA personnel normally do not interfere with media reporting unless they suspect OPSEC, command guidance, or ground rules violations.

6-30. Consistent with operational conditions, commanders support PA personnel with facilities to ensure the timely, secure, and compatible transmission of media information products. When Army support is unavailable, the media transmit their information products using their own resources.

Media Credentials

6-31. The third support that MOC operations provides is credentialing media representatives. Credentialing is a specific type of accreditation that grants journalists more access to otherwise restricted areas. Credentialing a media representative involves vetting the representative as a legitimate journalist as well as the journalist agreeing to abide to ground rules. Commanders used media credentialing to allow legitimate media access to cover military activities in the United States and in deployed operations. Units do not afford media representatives without credentials the same access as credentialed media representatives.

Commanders ensure all media representatives on their installation or in their operational area understand and have access to all information required for proper credentialing. When units encounter non-credentialed media, commanders and PAOs encourage these media representatives to register at the appropriate MOC.

6-32. The PAO or MOC director at the appropriate echelon establishes media credentialing guidelines (normally corps and above). Credentialing ensures Soldiers recognize and treat media representatives as legitimate journalists accordingly under the law of war. During joint operations, the joint force registers embedded media who then carry those identifying credentials, as appropriate, as well as Geneva Convention cards. Commanders do not provide information to non-credentialed and unregistered media representatives without guidance from the PAO or the MOC director.

6-33. Journalists seeking credentials to cover military activities must agree to ground rules tailored to the specific event or operation established by the approving commander, PAO, or MOC director. Violations of ground rules can result in suspension of credentials. During operations, the decision to suspend credentials or expel a reporter is made only with the approval of the joint force or combatant commander. In garrison or home station, the authority to suspend or expel a reporter rests with the installation senior mission commander. All journalists, registered or not, are expected to abide by established media ground rules.

6-34. The MOC staff provides credentialed media with badges that distinguish them from other civilians in the area, clearly identifies off-limits areas, and provides escorts as needed. When badging a media representative, the MOC personnel issue the media badge and log it in by control number. At a minimum, the credentialed media badge includes the following information, indicating the media has been accredited by the MOC:

- Photo of named person.
- Name of person badged.
- Issue date and expiration date.
- Agency issuing badge.
- Name of issuing authority.
- Control number.
- Signature block of approval authority.

Ground Rules

6-35. Operations in the MOC establish ground rules for media organizations and their representatives. Ground rules protect the media and Soldiers from the release of information that could threaten their security or safety. These rules are not intended to prevent the release of derogatory, embarrassing, negative, or uncomplimentary information. Ground rules align the media's interest to report on military operations in a timely manner with security and safety concerns. Media ground rules also include requirements that protect the health and welfare of the media. These rules identify places the media can go, off-limits areas, places the media can or cannot photograph, and procedures for requesting interviews.

6-36. Media ground rules include information on the process for the release of information, safety or access procedures, access to the internet if not commercially available, and constraints or limitations regarding interviews, such as the amount of time available and topics for the interview. Ground rules also include the process for unintended exposure or release of classified information. (See JP 3-61 for more information on ground rules.) The MOC provides ground rules to the media as soon as possible during the credentialing process.

6-37. In multinational operations, appropriate multinational command and staff channels develop and implement responsibilities for establishing media ground rules, credentialing media, and, if necessary, expulsion of media.

Media Pools

6-38. MOC operations monitor media pools. A media pool is a limited number of news media selected to provide content to multiple news organizations during specified activities or operations. Media pools are not the standard for reporting Army operations but can be implemented when conditions warrant or constraints exist. Pools should be as large as possible and be disbanded at the earliest opportunity—ideally within 24 to

36 hours of the conclusion of the operation. Commanders who knowingly create a media pool place additional support requirements on the organization. (See JP 3-61 for more information on media pools.)

6-39. The arrival of early-access pools does not cancel independent coverage for media representatives already in the area. Even under conditions of open coverage, media pools may be appropriate where seating is limited, at remote locations, or on ships. In such circumstances, PA planners specify what mediums—such as print, broadcast, and others—form the pool to ensure adequate scope and distribution of coverage. Media representatives determine who fills the spaces in the pool. Media pool selection includes designation of a team leader. This team leader ensures that members of the media pool meet their obligation to share information. Army PA personnel do not get involved in settling internal disputes of the media pool.

6-40. The military is responsible for transporting media pools when operationally necessary or under conditions of constrained access to an event. To ensure complete coverage of an event, commanders provide dedicated transportation if able. When commanders decide media pools are necessary, PA planning includes reimbursement from the media depending on location and availability of commercial transportation.

Media Query

6-41. MOC operations oversee answering media queries. Media queries are a request for information from the media. Upon receiving a query, PA personnel record the query, maintain query-tracking systems, and ensure they answer all questions as quickly as possible, being careful to not commit to a specific timeframe.

6-42. PA personnel only answer questions with information that is accurate and cleared for public release. (See appendix F for Privacy Act considerations.) PA staff need to scrub all RTQs free of jargon as well include explanations of any military terms.

6-43. Before PA staff release any information, the release authority must approve it. In the case of accidents, PA staffs customarily respond that the accident remains under investigation and they cannot release names. In the case of a death of a Service member, they cannot release names until 24 hours after the next of kin are notified. PA staff do not release conditions of patients. Patients' conditions are released from hospitals and may be categorized as treated and released, stable, serious or critical. (See AR 360-1 for nonreleasable information.)

6-44. A RTQ is recommended when there is a desire not to take action to generate media or public interest beyond responding to media queries. On occasion, the public affairs posture is RTQ until a certain point in the planning and execution of an operation, exercise, or event. At that time, the RTQ posture may change to active. On other occasions, the public affairs posture will remain passive for the duration or until completion of the military operation, exercise, or event.

Media Embed

6-45. Lastly, MOC operations oversee and track media embeds. Embedded media is the Army's most widely used method of civilian media coverage to tell the Army story due to the proximity to the Soldiers and the mission. Through embedded media, commanders can counter misinformation and disinformation by allowing the media access to actual events enabling their ability for to report on a firsthand account. The embedded media program aims to provide as much transparency as possible of military operations to keep the public informed. To achieve this, units strive to embed media representatives at the lowest level possible.

6-46. Once the higher headquarters clears a media representative for embedding, PA personnel begin the reception procedures as follows:

- Receive and credential all media personnel in accordance with higher headquarters and combatant command policies.
- Provide an operational overview or background information to include a media kit or approved releasable briefings that can be shared while maintaining OPSEC.
- Ensure media representatives have proper field gear and protective gear prior to hand-off to subordinate unit.
- Plan and coordinate a commander interview or greeting (if possible) before hand-off to subordinate units.
- Coordinate with respective UPAR and media escort for media hand-over.

- Provide daily media situation reports to higher PA headquarters. Upon conclusion of the media embed, provide a media after action review to the next higher level PAO.

6-47. PA personnel use the following items to construct an after action review:

- A PA log that the PAO has used to record a chronological list of actions of all PA assets used in the process.
- Audio or visual documentation of the media's interaction such as interviews or broadcast products.
- All products produced by the media representative to include newspaper articles, magazine articles, and social media posts.
- Documentation of issues encountered and lessons learned.

6-48. Embed termination occurs when the embedded media representatives indicate their intentions to end their stay with the unit. Hosting command PAOs, or UPARs, coordinate with the higher echelon PAO to transport the embedded media representative out of the area of responsibility. The credentialing organization debriefs all media departing theater on OPSEC considerations.

Chapter 7

Public Communication

PUBLIC COMMUNICATION OVERVIEW

7-1. PA is inherent in all military activities. As a key enabler, PA manages and delivers public information through public communication. In Army PA, public communication is the communication between the Army and international, national, and local publics. Through CCS, PA personnel develop plans, themes, and messages to inform audiences, deter competitors, and defeat adversaries.

7-2. Public communication is the receipt and exchange of ideas and opinions that contribute to shaping public understanding of, and discourse with the Army. The U.S. military has an obligation to communicate with its members and the U.S. public; it is in the national interest for the U.S. military to communicate with international publics. The proactive release of accurate information to domestic and international audiences puts joint operations in context, facilitates informed perceptions about military operations, undermines adversarial propaganda, and helps achieve national, strategic, and operational objectives. Effective public communication fosters a culture of engagement in which Soldiers and leaders confidently and comfortably engage various publics.

PUBLIC COMMUNICATION OBJECTIVES

7-3. Public communication includes the release of official information through news releases, public service announcements, media engagements, town halls, senior Soldier and leader engagements, and social networks. Public communication enables the commander in their obligation to keep the American people and the Army informed while deterring competitors and defeating adversaries. Public communication objectives are:

- Increase public awareness of the Army's mission, policies, and programs.
- Foster good relations with the communities the Army interacts with at home and abroad.
- Maintain the Army's reputation as a respected professional organization responsible for national security.
- Support the Army's recruiting and personnel procurement mission.
- Use information to deter competitors and defeat adversaries.

7-4. An active approach to public communication requires specific objectives, courses of action, and the identification of potential obstacles. Public communication engagements are impacted by media coverage, which heighten media facilitation efforts and communication strategies.

AUDIENCES, STAKEHOLDERS, AND KEY PUBLICS

7-5. Effective public communication requires that PA professionals properly identify the intended recipients of PA themes, messages, narratives, and talking points, while distinguishing among audiences, stakeholders, and key publics. An audience is a broad, roughly defined group based on common characteristics. It defines a population that contains relevant stakeholders. Generally, military communications to audiences are broad in scope, often indirect, and without feedback. Examples of audiences can include the following:

- The American people.
- DOD military, civilians, contractors, and family members.
- Partner nations and allied forces.
- International, host-nation, and local communities as well as adversaries.

7-6. PA planners assess the need to communicate with stakeholders based on the extent to which an operation or action may affect them. A *stakeholder* is an individual or group that is directly impacted by military operations, actions, and/or outcomes, and whose interests positively or negatively motivate them toward action (JP 3-61). A stakeholder's actions or decisions can also have an impact on military operations. Examples of stakeholders can include individuals in government, NGOs, or individuals that live outside a military base.

7-7. A stakeholder who communicates more actively with the military is a type of public. The more actively publics engage, the more PA staff prioritize public communication with them. A key public only arises out of the PA planning process. PAOs narrow down this segmented group that the Army deems it important to inform. Key publics do not form the basis of a communication approach, but rather serve as the beginning of the planning process for determining stakeholders and assessing key publics. A military force can tailor its communication to a key public. See figure 7-1 for examples of key publics.

Federal <ul style="list-style-type: none"> • Congressional representatives • Administrative assistants of Congressional Representatives and Senators • Environmental Protection Agency • FEMA • Others in charge of disaster relief State <ul style="list-style-type: none"> • Legislators/regulators • Governor • Chief aides • State environmental agency • Other appropriate state agencies Local <ul style="list-style-type: none"> • Local officials • Mayor • City manager • City council • County commissioners • Community advisory panels • Other key community leaders • Institutions (schools, hospitals) 	Internal Publics <ul style="list-style-type: none"> • Employees • On-post residents • Tenant units • Union officials • Family members • Retirees • Contractors Emergency Responders <ul style="list-style-type: none"> • Local emergency responders • Police, fire, first aid • Local emergency planning committee members • Local medical personnel • State police • Federal, state, and county hazardous materials and accident teams Media <ul style="list-style-type: none"> • Editor and publisher of newspaper • Reporter or stringer • Station manager or news director of television and radio stations • Trade publications 	Business Organizations <ul style="list-style-type: none"> • Chamber of Commerce • National and county alliance of business • Business roundtable • Professional and trade organizations Public interest groups <ul style="list-style-type: none"> • Community activists • Public interest research groups • Environmental organizations (for example, Greenpeace and Sierra Club) Civic/Service Organizations <ul style="list-style-type: none"> • Red Cross • Rotary • Local chapters of Kiwanis, Lions, League of Women Voters • Religious-based social service agencies • Little league, soccer associations Philanthropy <ul style="list-style-type: none"> • United Way • Community Foundations
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Figure 7-1. Examples of key publics

7-8. PA planners identify organizational stakeholders to help determine particular key publics among a list of possible audiences. PA planners may identify many different key publics depending upon the particular PA objective, campaign, or initiative. For example, PA planners may identify local citizens as a possible audience to communicate information to about an upcoming large-scale deployment of Soldiers at an installation. Because of the potential economic impact of the deployment to the local community, PA planners identify local business owners as a key public.

7-9. Developed lists of key publics and issues stakeholders—individuals with vested interest—keep PA staff informed and updated about military activities. Efficient PA staff periodically update these lists. PA staffs prepare these community-based lists locally and keep them up to date. Conducting an assessment of key publics and stakeholders helps to develop the following:

- A more comprehensive crisis communication strategy.
- An assessment of the key publics' needs.
- An evaluation of the relationships between an organization and the key publics.

7-10. This assessment helps professional communicators develop outreach initiatives and determine the community's information needs. It is important, especially in a crisis, that PAOs prioritize affected publics.

This makes their job of communicating more manageable and makes the best use of time. PA staffs establish a tool, technique, or procedure to reach every segment of their identified publics.

7-11. The relationship between commanders and different audiences is integral to PA. Commanders build and sustain positive relationships with key publics. Management of public communication programs is a PA function. Outside the United States, public communication is often a coordinated effort with other IRCs. Regardless of location, public communication strategies help civic leaders and local populations understand the activities of nearby installations and units. The type of audience determines the information that commanders share.

INTERNAL AUDIENCE

7-12. Service members, contractors, DA Civilians, and their Families compose an internal audience. Commanders use command information programs as the primary means to communicate their internal audience. Service members of the internal audience include Regular Army, Army National Guard/Army National Guard of the United States, and United States Army Reserve, retirees and veterans. Commanders share information with OPSEC parameters and recognize that an informed force is a more ready, reliable, and resilient force.

DOMESTIC AUDIENCE

7-13. Commanders have an obligation to inform the American public about its military and its impact on the community. This communication increases public trust and support through active engagements. Through public communication programs, the military demonstrates it is a community partner and a responsible steward of national resources. Examples of public communication programs include news releases, public service announcements, media engagements, and social networks.

INTERNATIONAL AUDIENCE

7-14. An international audience consists of publics from allies, unified action partners, and host nations. International interest in military operations may be as high as, and sometimes higher than, U.S. media interest, especially in military operations conducted outside the continental United States. The Army coordinates and communicates with other agencies, organizations, and nations. Within the constraints of OPSEC, the DOD, Department of State, and allied and partner nations keep the international community informed about Army operations and activities. Before releasing information to international audiences, PAOs consider a host nation's culturally sensitive topics.

COMPETITORS AND ADVERSARIES

7-15. The last type of audience that concern PA staffs consists of competitors and adversaries. PA personnel distribute timely, truthful, and accurate information regarding U.S. intentions and actions. Commanders use the information to counter adversary and enemy misinformation, disinformation, and propaganda and to deter adversary and enemy actions. Volatility in the information environment requires PA and all other IRCs to synchronize their communication efforts to deter actions by adversaries.

SEGMENTING AND DIRECTED MESSAGING

7-16. It is important, especially in a crisis, to prioritize key publics. PA personnel deliver themes, messages, narratives, and talking points according to this prioritization. Prioritization of key publics requires that PA planners segment publics.

7-17. Segmentation is separating publics by demographics (who the audience is) and psychographics (how the audience thinks in terms of values, attitudes, and lifestyle) to enable more effective communication. It usually involves dividing publics into various groups according to established criteria. Members of each resulting key public have at least one factor in common with other key publics. PA personnel update their understanding of, and communications efforts to, segmented key publics continuously since the digital media updates in real time. Segmenting publics allows PAOs to plan for more targeted and effective communication. The PAO uses research and communication theory to identify and segment publics and to develop creative

communication plans and tailored outreach programs. See the vignette on segmentation for a sample segmentation message. (See JP 3-61 for more on segmenting key publics.)

7-18. Directed messaging occurs when commanders use public communication for key publics. Commanders achieve this more effective means of communication through themes, messages, narratives, and talking points directed at segmented key publics. PA personnel tailor such messages and talking points to the particular intended key public, when possible.

Segmentation

Former Commander of the Combined Arms Center Lieutenant General William B. Caldwell described this process of research-based audience segmentation when he reflected on his appearance on The Daily Show with Jon Stewart in March of 2008.

“When we were invited to share about Field Manual (FM) 3-0, Operations, on ‘The Daily Show,’ I must admit, I was less than convinced that we should do it. It was not until the Army’s chief of public affairs reminded me of Jon Stewart’s primary audience, an audience of men and women between the age of 17 and 35, the most attractive advertising demographic and, coincidentally, the same demographic as our Soldiers, He reminded me that our Soldiers more than anyone needed to understand the importance of FM 3-0, and this clearly was a golden opportunity to reach them.”

One might incorrectly assume that, upon seeing this unique appearance of a general officer on a nighttime talk show, the intent of such an engagement was to reach a broad audience of the American people. On the contrary, however, this represented the creative public affairs planning—and more specifically, the segmentation of key publics—that enabled a senior Army leader to reach an internal audience of young Soldiers through this “out of the box” medium of disseminating the message regarding changes to FM 3-0. Furthermore, a nuanced understanding of the demographics of Jon Stewart’s audience helped public affairs planners posit this engagement opportunity as an effective one to reach the intended, segmented key public.

COMMAND INFORMATION

7-19. Public communication implements command information. Command information is communication by a military organization directed to the internal audience. This audience includes Soldiers, civilians, contractors, and their family members. This information creates an awareness of the organization’s goals, informs them of significant developments affecting them and the organization, increases their effectiveness as ambassadors of the organization, and keeps them informed about what is going on in the organization. (See JP 3-61 for more information on command information.)

RESOURCES

7-20. PAOs have several resources to carry out the organization’s command information mission. These include publications and video services, the CORE platform, DVIDS, and different social and digital media, such as the American Forces Radio and Television Series (known as AFRTS) which is managed under DODM 5120.20.

Installation and Organizational Publications and Video Services

7-21. The Army uses installation and organizational publications and video services to communicate directly with the internal audience on its installations. Civilian enterprise publications, such as Army newspapers and Army funded publications, such as unit newsletters or magazines, can deliver the commander’s communication objectives, themes, and messages to this audience. Additionally, commanders may elect to use installation broadcast capabilities to disseminate information to Soldiers and families via a command television channel. PA professionals manage these various distribution means effectively and recommend to

the commander appropriate ways to communicate via each. (See AR 360-1 for additional guidelines for using these publications and services.)

CORE

7-22. Commanders use CORE as another method to communicate with people on installations. CORE is the content management platform and publishing tool provided to Army PA personnel. PA personnel use the CORE website to publish articles, upload images and documents, and create web pages for units and organizations. Units and organizations are permitted to have a CORE organization page. The Army encourages all PAOs to register for an account on CORE to publish content on the Army.mil official web page. Authorized personnel review and approve all content submitted to CORE for release in accordance with the local chain of command. The CORE website is located at <https://www.army.mil/core>.

Defense Visual Information Distribution Service

7-23. The DVIDS is a third resource used for command information. This service, under the direction of Defense Media Activity, is a network of portable satellite transmitters and network links connected to a distribution hub in Atlanta. This system enables media organizations to request products, conduct broadcast-quality interviews, and to receive images, video footage, and print stories from the DVIDS distribution hub. Service members can access the distribution hub when deployed to support a range of military operations. In terms of an organization's command information mission, DVIDS provides a digital platform for PA professionals to upload, organize, and feature their products to an internal audience.

Social and Digital Media

7-24. For an organization's command information mission, social and digital media provide a digital platform for PA professionals to share their products with an internal audience. While installation and organizational publications offer traditional ways of communicating with the command, other forms of communication have evolved. Social media and internet-based communication now provide additional, two-way communication between a military organization and its audiences. As technology and capabilities evolve, managing digital and social media becomes an essential component for communicating effectively.

7-25. All information posted on a publicly accessible website or social media platform is public information. All information published via social or digital media must comply with Army and DOD guidance for the release of information. These publications include AR 25-1, AR 25-2, AR 25-22, AR 380-5, AR 381-12, AR 530-1, DODD 1344.10, DODI 5230.29, and JP 3-13.

7-26. PA professionals must understand the effectiveness social media operations have communicating quickly and effectively with key publics. For instance, installations can use social media platforms to announce weather hazards, gate closures, or traffic issues to inform the local public near an installation. During a military operation, commanders consider all dissemination capabilities available to communicate releasable details and the role of the military in the operation. (See Chapter 9 for more on digital media management and social media.)

Additional Resources

7-27. A PAO has numerous other means available to carry out the organization's command information mission. These include the following:

- Service magazines often segmented based on a specialty such as aviation, armor, infantry, or on a Service component such as National Guard or Reserve.
- Town hall meetings where a commander can inform various members of the internal audience about operations, policies, and issues affecting them.
- Command events such as unit formations.
- Displays such as billboards or posters.

OTHER CONSIDERATIONS

7-28. Commanders have other considerations to balance when preparing command information. They consider the information they disseminate and its secondary audiences. While command information is intended to communicate internally, commanders recognize that released information in today's information environment often becomes readily available to all publics. Commanders consider potential effects of those other audiences obtaining such information.

7-29. Commanders consider other uses of command information. Command information is an excellent venue to share and promote the Army culture. Commanders can use command information to incorporate and reinforce the five essential characteristics of the Army Profession (trust, military expertise, honorable service, *esprit de corps*, and stewardship) and the Army Ethic. They can also share with Army personnel the three-certification criteria of Army professionals (competence, character, and commitment). The guidance in ADP 1 frames the characteristics and criteria for success as an Army professional.

7-30. In the event of a crisis, commanders consider the most effective methods to get information out quickly. Usually it is important to notify the internal audience first through PA professionals using command channels and social media platforms. Each PA professional can serve as a potential ambassador to deliver coherent messages and talking points from the commander to an external audience. The speed of communication across the social media landscape magnifies this ambassador effect and requires that PA professionals quickly and efficiently inform the internal audience at the outset of a crisis. (See Chapter 5 for more on crisis communication.)

COMMUNITY ENGAGEMENT

7-31. *Community engagement* is public affairs activities that support the relationship between military and civilian communities (JP 3-61). These activities involve working collaboratively with, and through, groups of people affiliated by geographic proximity or special interest to enhance the understanding and support for the Army, Soldiers, and operations.

7-32. Community engagement places special emphasis on two-way communications with identified publics and communities surrounding military installations. It recognizes that a positive rapport between the Army and its host communities is mutually beneficial, supporting the Army as an institution as well as its individual Soldiers.

7-33. During military operations, personnel may be involved in activities that engage the community. All community engagement activities support the commander's communication objectives. Senior military leaders have responsibilities to engage key leaders in their operational areas, including those from other government agencies and NGOs. PA staff assists in identifying key leaders and recommending opportunities for military engagement.

7-34. The Army relies on communities and regions surrounding its installations for direct and indirect support. Communities provide the Army access to resources needed to train and maintain readiness as well as extend support to families of mobilized or deployed Soldiers. Army Family members, who represent Army Values and ideals, serve as community ambassadors. Commanders recognize that a positive rapport between the Army and its host communities is mutually beneficial, supporting the Army as an institution as well as its individual Soldiers.

7-35. A public engagement is any interaction between a Soldier and the public. A public engagement can be planned or unplanned, can occur anywhere Soldiers are, and may have positive, neutral, or negative effects depending on circumstances of the engagement. PA professionals must be ready to support media operations and facilitation if a public engagement garners media attention.

7-36. Members of the Army National Guard and United States Army Reserve live and work in the community and are integral members of their hometowns. A public's positive relationship with a local reserve unit or an active-duty installation stems from the command. A commander considers potential implications of every installation activity, operation, or major training activity. This is especially important during crisis management, mobilization, deployment, and redeployment operations, even if the installation or reserve unit is not directly involved. A commander also considers potential implications during national events concerning politically sensitive or controversial DA or DOD issues. During such times, the information

requirements of internal and external audiences increase dramatically. Installation and reserve unit commanders and their staffs—advised, counseled, and supported by their PA elements—need to implement effective PA programs that include open, honest, accurate, complete, and timely release of information based on information needs. Further details on community engagement can be found in DODI 5410.19.

OFFICE OF THE CHIEF OF PUBLIC AFFAIRS ARMY OUTREACH DIVISION

7-37. The OCPA Outreach Division is located at the Pentagon, conducting community engagement and outreach for the Headquarters, DA. As the senior outreach arm for the OCPA, OCPA Outreach Division ensures PAOs and commanders in the field know their available resources for telling the Army story. This division also keeps them current on Army and DOD policy. OCPA Outreach executes national and regional outreach activities to communicate key themes and messages directly to the American public to maintain their trust and confidence in the United States Army. The outreach actions are often unfiltered by news media sources and use Soldiers as spokespeople. OCPA outreach consists of the headquarters section, executive communications team, and three field offices. The OCPA Outreach Division's key tasks are to—

- Execute and coordinate major community engagement campaigns and legacy events (such as Meet Your Army, Army Birthday, and Army forums, competitions, and commemorative events) and acquire specific venues to provide Army visibility with the American public.
- Support and shape movies, documentaries, television programs, and books produced by others about the Army.
- Develop resources for Army PA field offices (such as campaigns and websites) and provide resources for Army PA field offices (such as speakers, policy or legal reviews, aerial and non-aerial support approvals, responses to public queries, and field band liaisons).
- Develop and maintain relationships with audiences (such as veteran service organizations, Joint Civilian Orientation, civilian aides to the Secretary of the Army, Reserve ambassadors, talk show producers, organizations, and major sport teams)

OFFICE OF THE CHIEF OF PUBLIC AFFAIRS NORTHEAST REGIONAL OFFICE

7-38. Located in New York City, OCPA Northeast develops public support for the Army and its Soldiers through community outreach, media engagements, and support to veterans and military support organizations from Maine to Maryland. The office coordinates Army participation at events including Army Senior Leader engagements, color guards, bands, ceremonial units, aerial demonstration teams, flyovers, static displays of Army equipment, and Soldier and Family recognition. OCPA Northeast pitches Army story ideas to national-level and local-based media, places Army leaders and SMEs in appropriate media settings, provides media advisories and responses to queries, and assists with media requests to cover Army units in its area of operations (Regular Army, Guard, Reserve, and Army schools). OCPA Northeast is the approval authority for authors requesting Army assistance with book projects. The OCPA Northeast regional office coordinates requests for support for community events with Army installations and units worldwide.

OFFICE OF THE CHIEF OF PUBLIC AFFAIRS MIDWEST REGIONAL OFFICE

7-39. Located in downtown Chicago, OCPA Midwest develops public support for the Army and its Soldiers. This regional office uses community outreach, media engagements, and support to veterans and military support organizations. OCPA Midwest spans across the 16-state Midwest region that includes Arkansas, Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, Oklahoma, South Dakota, Tennessee, and Wisconsin. The OCPA Midwest regional office connects citizens with the Army network by serving as the principal Army PA liaison for professional sports franchises, media, and communities of interest and veterans service organizations. The OCPA Midwest regional office promotes the U.S. Army and informs its local public about various military events including Army programs, projects, information, and initiatives. The OCPA Midwest uses outreach efforts involving veterans, civic, and military-affiliated organizations as well as special events coordinating Army speakers when requested. This regional office also coordinates events for organizations, civic leaders, and communities to honor local Soldiers.

OFFICE OF THE CHIEF OF PUBLIC AFFAIRS WEST

7-40. Located in Van Nuys, California, OCPA West, also known as the Army Entertainment Office, is the Army's direct liaison to the entertainment industry. The staff at OCPA West assists major motion picture and television professionals to tell the Army story. OCPA West personnel work directly with members of the entertainment industry to ensure their project accurately portrays Soldiers and the Army. The OCPA West staff assists the entertainment industry by reviewing feature film and television scripts, providing on-site technical military assistance to filmmakers, and coordinating documentary coverage of the Army. In addition, OCPA West personnel seek opportunities to showcase the American Soldier through community outreach, media engagements, and community liaison.

OUTREACH OPPORTUNITIES

7-41. PA staff participate in community engagement through many outreach opportunities. A community engagement program consists of command-initiated actions that effectively inform civilians about the Army and maintain a viable relationship with the civilian community. Examples of official community engagement programs include partnering with organizations; using exhibits, bands, color guards, and other ceremonial units at civilian events; and hosting open houses and active installation tours. Unofficial community engagement programs may include any program that involves Soldiers interacting directly with a civilian community. Such unofficial events can include participating or supporting educational, religious, organizational, recreational, and youth programs or volunteering at a community organization. (See AR 360-1 for more information and restrictions on programs and activities for support to community events.)

7-42. A specific community engagement involves Medal of Honor recipients. Medal of Honor PA support oversees all Medal of Honor programs. The Pentagon's OCPA Outreach Division leads the communication efforts in these programs. This division coordinates all Medal of Honor communication activities in partnership with the Army G-1. Pre-ceremony, G-1 is the lead with OCPA Outreach supporting. Post-ceremony, OCPA Outreach coordinates media and outreach activities for both living active duty recipients and next-of-kin of posthumous recipients.

PARTICIPATION IN COMMUNITY EVENTS

7-43. PAOs carefully manage the commander's community engagement program. These officers research various options and means to engage with the community as well as recommend appropriate community engagement opportunities to the commander. PAOs also plan and execute community events involving command participation and then collect feedback from participants. Community events can include providing speakers, hosting tours and open houses, participating on community councils, coordinating ceremonial units for events, and attending town halls.

Speaker's Bureau

7-44. A speaker's bureau is composed of a pool of volunteer Service members prepared to speak on various topics. This bureau can effectively share the commander's messages to various segments of the local community. PA personnel prepare these Service members to speak on various topics, including their jobs, the installation and its mission, and specific issues affecting the organization and the local community. The PA staff is responsible for maintaining a ready pool of speakers, evaluating requests from local civic organizations, and coordinating speaking engagements for participating Service members.

Installation and Distinguished Visitor Tours and Open Houses

7-45. PAOs manage community events such as installation tours, distinguished visitor tours (commonly known as VIP tours), and open houses. These events help PAOs effectively maintain good relations with an element of the civilian community or the community at large. When conducted, command-sponsored civic leader tours or visits normally do not exceed seven days. (See DODI 5410.19 for guidelines on community engagement activities.) PA staff often schedule open houses to coincide with Armed Forces Day, the Army Birthday, Service branch birthdays or anniversaries that mark the history of the installation, a unit, or community events, or in support of media day. An open house provides the local community an opportunity

to interact with a military organization at the workplace or training site while informing the public of unit activities and the unit mission.

Base Community Councils

7-46. PA staff liaise with the community through informal community engagement councils to establish and maintain open communications with community officials and organizations. Communities can give councils various responsibilities. These responsibilities can include developing and promoting new ways for members of the command to participate in local community activities, capitalizing on opportunities for better relations, and resolving potential and actual areas of conflict. Community liaison can also involve recognition of private citizens, local community leaders, and citizen groups and organizations for their support of the Army by public service awards. Commanders can further such measures through membership in civic, business, and professional organizations when the goals and objectives of those organizations benefit the Army and their programs and projects are consistent with Army interests. (See AR 360-1 and DODI 5410.19 for additional guidelines in conducting community engagement activities.)

Military Band and Ceremonial Unit Performances

7-47. The band, color guard, and other ceremonial units participating in public events provide an effective way to accomplish community engagement objectives. These representatives of the Army serve as ambassadors to the civilian community and promote patriotism, interest in the Army, and awareness of Army professionalism. They play the National Anthem, post and retire the flags, demonstrate a professional image, and encourage participation with stimulating music.

Town Halls

7-48. Town hall meetings provide installation commanders with an unfiltered means of communicating ideas to internal and external audiences. This tool for conveying important information and ideas about the command cannot be underestimated and should be carefully planned and executed. PAOs incorporate effectively using social media platforms to expand the reach of such events into the surrounding community.

COMMUNITY ENGAGEMENT RESOURCES

7-49. When a community hosts an engagement and requests Army participation, PA staff help them request resources. The DOD recognizes two types of resources: those with aerial support and those without aerial support.

7-50. The Pentagon's OCPA Outreach Division determines support eligibility and processes requests for all aerial events occurring in the civilian domain. The PA staff submit a DD Form 2535 (*Request for Military Aerial Support*) for all Army aviation requests to include aerial demonstrations, static displays, and demonstration by Army command parachute teams and by the Golden Knights. That same division forwards requests for non-aerial events to the appropriate local PA offices for consideration. The PA staff submit a DD Form 2536 (*Request for Armed Forces Participation in Public Events [Non-Aviation]*) for all non-aerial requests. These include color guards, band concerts, marching units, and troop displays.

7-51. PA staffs check the event criteria for Army support. They use the following criteria to determine eligibility for Army support:

- Character and significance of the event.
- Recruiting assets that will support the event with their projected benefit.
- Expected attendance and media coverage.
- All planned military participation, to include that by other Services.
- Support will not interfere with official duties or detract from unit readiness or mission.
- Specific benefits of support and impact if OCPA does not approve support.
- Safety initiatives in place.

In addition to the criteria, ongoing public concern and governmental budgetary constraints require the Army's awareness of its shared role and a concerted effort by Army leaders to focus training resources on mission readiness. Army leaders make prudent decisions when assigning military assets to nonoperational

commitments. AR 360-1 outlines participation by Army personnel, their equipment, or both in public events in direct support of the core missions of the Army. All policies and procedures for approval of events are described under its provisions and remain in effect.

PUBLIC AFFAIRS PRODUCTS

7-52. Effective PA operations involve creating and using various products to execute the commander's communication priorities across the command information, public information, and community engagement programs. Additionally, numerous PA products help to guide the organization through the planning process.

COMMAND INFORMATION

7-53. PA operations use publications and other materials to support command information programs. Publications such as printed newspapers and magazines are products that require additional resources and are typically less effective in today's digital technological world. Commanders have the authority to establish funded newspapers when it meets two requirements. First, a valid command information mission requirement exists and second, the commander and the next higher level of command determine a newspaper as the most cost-effective means of fulfilling the command's internal communication requirement. See DODI 5120.04 for instructions regarding the use of this PA product as a communication tool. Magazines, when approved by the ASCC, ACOM, or direct reporting units in accordance with AR 360-1, can effectively inform the internal audience while providing an additional outlet for articles and photography produced by PA professionals about unit activities. Commanders can print approved magazines using appropriated funds in accordance with DODI 5120.04. Normally, only one post publication (newspaper or magazine) is authorized at an installation, command, or community. (See AR 360-1 for printing authorizations.)

7-54. Occasionally, organizations ask PA staffs to produce additional materials (such as posters, pamphlets, and other printed material) to support the commander's communications objectives with respect to the organization's internal audience. PA staffs employ standard principles of design when creating such products and, when possible, leverage the assistance of trained graphic designers.

RELEASABLE INFORMATION

7-55. PA operations use releasable information through means of visual information; releases, posts, and advisories; and other products to support command information programs. The PAO or PAO representative reviews information for accuracy and professionalism in keeping with the intended audience before submitting them to appropriate contacts. PA professionals follow Associated Press and local style guidelines when producing news releases and media advisories. (See DODI 5120.04 or DODI 5120.20 for more information.)

Visual Information

7-56. PA operations use visual information to share public information. PAOs leverage all unit capabilities to tell the story of Soldier and unit activities through visual information consisting of multimedia products for radio, television, and online media. PA professionals follow the *DOD Visual Information Style Guide* for standardized guidance on writing captions and entering metadata associated with all DOD VI products. Official DOD imagery serves as an essential tool for decision makers at every level, and mission success and the protection of lives and property depend on official DOD imagery being complete, timely, and accurate. PA professionals must abide by well-established DOD policies related to the capturing, handling, and distribution of official imagery. (See the *DOD Visual Information Style Guide* at <http://www.dimoc.mil/VI-Training/DOD-VI-Style-Guide/>. See table 7-1 for stipulations.)

Table 7-1. Imagery stipulations

Type	Stipulation	Source
VIRIN Visual Identification (VI) Record Identification Number	Strategic, operational, tactical, and joint-interest imagery be centrally received, managed, and distributed as a shared asset. All such imagery shall be assigned a VIRIN.	DODI 5040.02 Enclosure 6
Vision ID Visual Information Professional Identifier	All photographers, videographers, graphic artists, photojournalists, broadcasters, public affairs and other personnel involved in the creation of official DOD imagery shall be assigned a Vision ID.	DODI 5040.02 Enclosure 7 Alteration
	Official DOD imagery shall not be altered except for specified corrections, modifications, and enhancements.	DODI 5040.02 Enclosure 10
DVIAN Defense Visual Information Activity Number	A five-character unique identifier in alpha (A) numeric (N) format, rendered as (ANNNN), assigned to approved VI activities (such as public affairs offices, public affairs detachments and support elements, combat camera units, ships, and other major commands) to validate their authority to operate and to enable unit-level attribution of VI records. Like the Vision ID, the DVIAN resides in Field 3 of the VIRIN.	DODI 5040.02 Enclosure 8
Distribution	All publically released imagery shall be expeditiously forwarded to the Defense Imagery Management Operations Center (DIMOC) through the Defense Visual Information Distribution Service (DVIDS). DVIDS serves as the single central ingestion point for all DOD cleared and released imagery. As such, DVIDS provides the military, media outlets, and the general public with access to a searchable repository of official DOD audio-visual and still imagery.	DODI 5040.02 Enclosure 5
DOD	Department of Defense	DODI Department of Defense instruction

Releases, Posts, and Advisories

7-57. PA operations use releases, posts, and advisories to share public information. PA professionals issue news releases, social media posts, and media advisories regularly to inform the public of appropriate unit activities. The PAO reviews these releases for accuracy and professionalism and submits them to appropriate contacts. PA staffs use proper grammar when producing news releases and media advisories.

Other Products

7-58. PA operations use other products to share public information. To inform an external audience properly, PA staffs create various products for public release. Staffs prepare backgrounders or fact sheets, for example, as appropriate to provide detail about a detailed or complicated subject. Such products often accompany a news release to give amplifying or background information on a particular subject for greater context.

COMMUNITY ENGAGEMENT

7-59. PA operations use command engagements to support command information programs. PA staffs engage writing speeches, penning editorials, and posting on social media platforms.

Speeches

7-60. Speeches prove an effective tool of a commander's community engagement program. Speaking engagements in the community are critical to maintaining public awareness and support for the Army. PAOs can establish a speaker's bureau to identify qualified individuals in an organization to speak to the public. AR 360-1 mandates a speaker's bureau down to the installation level. This bureau prepares selected individuals to present speeches. The PA office establishes local clearance procedures for planned speeches. (See AR 360-1 for PA and speaker's bureau.)

Editorials

7-61. Commanders can use editorials to engage the community. An editorial written for a commander's community engagement publication or a local community newspaper provides the commander an opportunity to discuss policies or address issues. Commanders can voice arguments for or against such issues. Editorials are opinion-based and persuasive in nature. An effective PAO advises the commander when an editorial is the appropriate tool to inform the public. When working with a national, regional, or local newspaper, PA professionals follow the editorial standards of the paper in terms of length, submission instructions, and other requirements.

Social Media Platforms

7-62. Unit social media provide the commander the opportunity to engage various audiences in a public forum with immediacy. An effective PAO advises commanders on what conditions they need to engage the public. (For more on social media, see Chapter 9.)

DISTRIBUTION OF COMMAND INFORMATION

7-63. PA must analyze all available mediums to succeed in telling the Army story. PA personnel should be ready to serve and take advantage of various media, both locally and at the state, national, or international levels. In conducting market analysis, the following advantages and disadvantages of the various types of media in carrying the desired message must be considered.

NEWSPAPERS

7-64. Newspapers are able to cover stories in greater depth. They are timelier than magazines or books, but not as timely as radio, TV, or digital media. However, newspapers are more permanent than radio or TV. Daily and weekly newspapers often attract habitual readers.

RADIO

7-65. Radios are sometimes the only means of communications to the public during hostilities. Its major disadvantages are its lack of visual appeal, its lack of permanence and its lack of depth, as most radio news stories are in the 20–30 second range.

TELEVISION

7-66. Television is the most widely-used platform and the medium of choice for news in America. Its disadvantages, like radio, are its lack of permanence and its lack of depth. Another disadvantage is that younger audiences are twice more likely to use digital media for news gathering than TV.

NEWS SERVICES

7-67. News services can help get a story with national or international appeal to the widest possible public. News services or wire services exist to provide the mass media with coverage local media could not afford. In effect, subscription to a news service (print, electronic, or both) gives a subscriber correspondents wherever the news service has a bureau.

PUBLICATIONS

7-68. Publications can be grouped as news (Time, Newsweek), consumer (TV Guide, Better Homes and Gardens), special interest (Stereo Review, Soldier of Fortune), and internal (Soldiers, Armor). Few publication editors want "handouts" except as possible leads for staff-written stories. Special interest publications are the exception. Many eagerly seek high-quality stories and photos.

DIGITAL MEDIA

7-69. Digital media is the most potent mass communication medium today. It offers variety, mobility, and combines TV's impact of moving pictures with the sound and immediacy of radio. Digital media is also a world-reaching medium that is accessed on a moment-to-moment basis by all types of publics. Many of the previous mediums have an outlet to the internet providing possible permanence and history for stories and information. Developing a digital media presence can often be beneficial to your unit's command information mission.

7-70. Reviewing available media, the PAO should compile a media listing. That listing should include all local media and outside media that would likely use material from the U.S. Army as well as names of editors, news directors, or station managers; addresses; phone numbers; deadlines; frequency of publication; type of public served; and unique requirements or interests. In many communities, media listings already exist and are available from state, city, or community service organizations. The Gebbie Press All-In-One Directory, the Editor and Publisher International Yearbook, and Broadcasting Annual are examples of directories that can help locate outlets nationally and worldwide.

7-71. As part of marketing, press releases and media advisories will routinely be issued. These releases must be reviewed and approved by the PAO or his or her designee. Before sending a release to any media, ensure it is accurate, professionally prepared, and of interest to the newspaper, magazine, or radio-TV stations receiving it. Also ensure releases are tailored to suit the requirements, interests, and formats of the recipients.

PUBLIC AFFAIRS REGULATIONS, LAWS, AND POLICIES

7-72. Numerous regulations, laws, and policies guide the application of effective PA operations. PA professionals must be familiar with such guidance to manage daily PA operations properly and advise the commander. The following paragraphs discuss a few basic PA publications while highlighting various important regulations, laws, and policies that inform PA conduct.

ARMY REGULATION

7-73. AR 360-1 provides guidelines for the release of command and public information, including information released to the media, and community engagement programs intended for internal and external audiences with interest in the U.S. Army. PA professionals should be familiar with the guidance within AR 360-1 when planning and executing command information, community engagement, and public information programs in garrison or while deployed.

JOINT DOCTRINE

7-74. JP 3-61 provides doctrine for the planning, execution, and assessment of PA activities in joint operations. It includes the Army fundamentals, roles, responsibilities, and relationships to joint functions and capabilities. Successful PA professionals understand and apply JP 3-61 when operating in joint and deployed environments.

DEPARTMENT OF DEFENSE ISSUANCES

7-75. Effective PA professionals know DOD-level guidance on PA operations, including the following:

- DODD 5122.05 establishes the responsibilities and functions, relationships, and authorities of the ATSD (PA).
- DODI 5400.13 establishes policy and assigns responsibilities for the conduct of PA as a primary DOD communications capability.
- DODI 5400.14 implements policy, assigns responsibilities, and prescribes procedures for the conduct of PA programs in support of joint, combined, and unilateral military operations.
- DODI 5410.19 establishes policy for the conduct of PA community relations activities and programs throughout DOD.

REGULATIONS, LAWS, AND POLICIES

7-76. Military programs are governed by federal law, DOD policies, and branch-specific regulations.

Free Flow of Information

7-77. DODD 5122.05 mandates that military organizations make available timely and accurate information so that the public, Congress, and the news media may assess and understand facts about national security and defense strategy. In carrying out the policy, the principles of information will apply. (See DODD 5122.05 for a description of the DOD principles of information.) In keeping with this policy, PA staff answers requests for information from organizations and private citizens in a timely manner in accordance with the FOIA. According to DODD 5400.07, Congress enacted FOIA to protect the American people from the government unnecessarily withholding information from them. PAOs must be familiar enough with FOIA to understand the basics of the law and to abide by its implications regarding the proper release of information. (See DODD 5400.07 for guidelines on the FOIA and the nine exemptions allowed under law.)

Law of War and Rules of Engagement

7-78. The *law of war* is that part of international law that regulates the conduct of armed force (JP 3-84). The law of war also applies to the conduct of hostilities and the protection of war victims in both international and non-international armed conflict, belligerent occupation, and the relationships among belligerent, neutral, and non-belligerent States. *Rules of engagement* are directives issued by competent military authority that delineate the circumstances and limitations under which United States forces will initiate and/or continue combat engagement with other forces encountered (JP 3-84). Rules of engagement reflect legal, policy, and operational considerations; they are consistent with the international law obligations of the United States, including the law of war. When communicating in a deployed environment, PA professionals must understand the law of war and the rules of engagement as well as their implications on U.S. military operations. (See *Department of Defense Law of War Manual* for additional guidelines.)

Host-Nation Laws

7-79. All PA staff members use host-nation laws to inform communications. PA planners consult with host-nation governments as appropriate in deployed environments. These planners identify local issues and concerns that they reflect in the PAG released to the commander and in externally released PA products. For more guidance, PA staff contact the respective host nation's embassy PAO.

Privacy Act

7-80. The Privacy Act of 1974 establishes that an individual's privacy is a fundamental legal right. AR 25-22 generally prohibits the members of the Army from publicly releasing certain items of information about an individual without that individual's consent. (See AR 360-1 for implementing privacy rights.) DODI 5400.11 mandates the protection of individual's rights, consistent with federal laws, regulations, and policies when maintaining their personally identifiable information. PA professionals must protect the privacy rights of Service members while providing publics with appropriate information about unit activities. In accordance with DODI 1300.18, PA offices cannot release casualty information on deceased personnel to the media or general public until 24 hours after notifying the next of kin regarding the casualty status of the member.

Health Insurance Portability and Accountability Act

7-81. The Health Insurance Portability and Accountability Act (known as HIPAA) of 1996, implemented by DODI 6025.18 and DODI 8580.02, generally prohibits the DA from publicly releasing certain items of information about an individual without that individual's consent. To release information about patients under treatment in Army medical facilities, PA professionals must obtain prior consent from the individual or the individual's representative. (See AR 360-1 for additional guidelines on what information is releasable once consent is obtained.)

Security Review

7-82. All official information released to the public that pertains to military matters, national security issues, or subjects of significant concern to the DOD must receive a security review by a qualified PA professional. That PA professional ensures that such information does not violate OPSEC. DOD personnel have the responsibility to ensure products have a proper security review before distributing them to the public. This applies to written products, speeches, and information released on the internet or other electronic media. Additional training and guidance is available at the Army Social Media website. (See DODI 5230.29 for additional guidelines on clearance and review of DOD information for public release.)

Accessibility

7-83. PA professionals ensure persons with disabilities can appropriately access PA products (See DODM 8400.01 for guidance on accessibility for persons with disabilities.) DODM 8400.01 addresses DOD employees or members of the public with disabilities who seek information or services from the DOD. This regulation requires PA staff to give these people access to and use of information and data comparable to the access and use by individuals without disabilities. If such access imposes an undue burden on PA staff, then the staff can limit the accessibility. (See specific details in Section 508 of the Rehabilitation Act of 1973, as codified in Section 794d of Title 29, USC.)

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Chapter 8

Counter Misinformation and Disinformation

UNDERSTANDING MISINFORMATION AND DISINFORMATION

8-1. Disinformation, often characterized as propaganda, is any form of adversary communication, especially of a biased or misleading nature, designed to influence the opinions, emotions, attitudes, or behavior of any group in order to benefit the sponsor, either directly or indirectly. The traditional factors that make information about an event newsworthy are the same factors that make propaganda compelling. People are drawn to conflict or violence, and many of our adversaries have mastered the art of using it, real and contrived, to influence the audience to further their objectives and minimize the Army's effectiveness. Anticipating actions that an adversary may exploit with propaganda and limiting that potential with preemptive release of information is paramount. When operations do not allow for such actions, PA units prepare to respond quickly to counter propaganda.

DEFINITION

8-2. Misinformation is a subset of information defined simply as incorrect information. Incorrect information from any source that is disseminated through ignorance or with the belief that the incorrect information is correct, can be a result of an adversarial disinformation campaign. Information can be incorrect for numerous reasons. For the purpose of PA, incorrect information has the potential to affect the understanding that a public may have on a subject important to communication efforts.

8-3. Disinformation is incorrect or false information disseminated from an adversarial source that is designed with the intent to distort information or deceive or influence the receiver. Adversarial use of disinformation in the information environment is often to confuse or affect public opinion against a perceived enemy and benefit the sponsor of the disinformation. Some forms of adversarial disinformation are deliberately disseminated in order to benefit a sponsoring government, organization, or group, either directly or indirectly. Intelligence organizations or other covert adversaries use indirect or unconventional means to distort information to deceive or influence publics. PA staff should not expect to defeat disinformation since it is a tactic and not an adversary, but should expect to be part of the countermeasure process. PA can counter disinformation and should acknowledge the strength truth has over both disinformation and misinformation.

PUBLIC AFFAIRS REQUIREMENT

8-4. DODI 5400.13 drives the PA activities requirement. It instructs PA staffs develop and employ DOD PA activities and capabilities to support the command and to ensure the trust and confidence of U.S. population, friends and allies, deter and dissuade adversaries, and counter misinformation and disinformation ensuring effective, culturally appropriate information delivery in regional languages.

PUBLIC AFFAIRS CONSIDERATIONS

8-5. PA staffs have several factors to consider when assessing adversarial misinformation and disinformation. They first consider what makes the disinformation believable. Misinformation is not adversarial, though adversaries can have misinformation efforts as part of a disinformation campaign. The most successful conspiracies likely contain some element of truth. The traditional factors that make information about an event newsworthy are the same factors that make misinformation compelling. Publics have both concern and interest regarding conflict or violence, and the Army's adversaries have mastered the art of using it, real and contrived, to influence audiences, further their objectives, and minimize the command's effectiveness.

8-6. Second, PA staff consider the unity of effort necessary to counter disinformation. When coordinating IRCs, PA personnel ensure unity of effort in countering disinformation. Commanders consistently communicate in an integrated and coherent manner regarding the actions and intentions of the Army and their command to counter disinformation.

8-7. Speed is a third consideration when countering misinformation and disinformation. The first side that presents the information sets the context and frames the public debate. PA staffs work quickly to get accurate information and imagery out first, without rushing to failure by inadvertently releasing inaccurate or incomplete information—even information that portrays DOD in a negative manner. This speed helps disarm the adversary’s propaganda and defeats attempts by the adversary to use these mistakes against friendly forces. Credibility must be maintained. PA professionals require the knowledge, skills, resources, capabilities, and authority to release information rapidly to various publics to support the commander’s communication strategy effectively. PA disseminates information while protecting OPSEC and in accordance with DOD policy and guidance.

8-8. Lastly, PA professionals consider where to search for the adversary’s information. They analyze information in traditional, nontraditional, and social media channels in search of misinformation about the Army and its missions. Misinformation can adversely affect an operational environment and the success of operations. PA operations contribute positively to operational environments by delivering facts in the form of releasable accurate information and imagery. PA staffs recognize and pick out adversarial disinformation efforts to analyze and counter before it can negatively affect Army operations.

RECOGNIZING MISINFORMATION AND DISINFORMATION

8-9. Detecting and recognizing misinformation and disinformation proves challenging for PA personnel. Misinformation and disinformation resides in the same outlets as factual, truthful information. Adversaries understand this and often rely on the rapid dissemination of unsubstantiated information using the continuous news cycle, social and digital media platforms, and other online information sources.

8-10. PA staff audits continuously for misinformation and disinformation regardless of the environment or type of military operation. PA staff conducts communication analysis and evaluation of PA activities. Army PA staff research to detect and counter or mitigate mission-related disinformation directed at international, national, and local publics, both at home station and abroad. Knowing where to search and being able to identify the types and tactics of misinformation and disinformation is critical to counter an adversary’s malign narrative.

RESOURCES

8-11. To recognize misinformation and disinformation, PA staff require various resources. They need access to information, current technology, and IRCs. Detecting misinformation counter to planned and coordinated communication is the first step to successfully counter disinformation and correct misinformation. The commander, through coordinated communication, ensures PA staff have access to information that affects an operational area. This information can include open source reports, relevant intelligence, and known common adversary disinformation techniques.

8-12. With support from PA staff, the commander leverages available technology and personnel to detect, analyze, and respond to misinformation and disinformation. This technology gives PA staff real-time awareness of facts surrounding military operations by publics, stakeholders, and even adversaries. Technology that includes social media and broadcasting enables PA personnel to establish and own the narrative among publics and the media. An uncorrected record provides an adversary with a great deal of time to amplify the effects of false or misleading information.

8-13. Involvement in the planning process and having access to various IRCs help PA staff to detect, analyze, and decide when to release timely, truthful information and imagery intended to counter misinformation and disinformation efforts. PA staff should, at a minimum, maintain knowledge and awareness of the following resources:

- Annex J (Public Affairs) in the operation order.
- Appendix 1 (Public Affairs Running Estimate) to Annex J (Public Affairs) in the operation order.

- Communication plans.
- PAG.
- Media analysis products.
- Social media engagement.
- Media engagements.
- Higher headquarters' communication plans.
- Themes and messages to include changes from higher headquarters.
- Communication from leadership.
- SOPs.
- Intelligence products.
- Open source reports.

DISINFORMATION TACTICS AND TECHNIQUES

8-14. To recognize misinformation and disinformation, PA staff require disinformation tactics and techniques. Adversaries employ various tactics and techniques in their disinformation efforts. PA staff leverage the knowledge of other IRCs to gain a greater understanding and increase their ability to recognize disinformation.

Tactics

8-15. PA staffs study and understand several disinformation tactics:

- Forgeries.
- Front groups and friendship societies.
- Influence operations.
- Media manipulation.
- Broadcasts.

Forgeries

8-16. The first misinformation and disinformation tactic recognized by PA personnel is forgeries. Forgeries, to include falsified documents and imagery, attempt to discredit individuals, institutions, or policies so to damage the Army and its interests as well as manipulate public and government opinions. PA staffs can expose forgeries as fakes. However, such denial may never entirely offset the initial damage, which allows for repeated references to the document.

8-17. The effectiveness of a forgery often depends more on the predisposition of the recipient than on the source or quality of the forgery. A recipient who is hostile toward the Army or U.S. Government or who is eager to expose an individual or organization they have contempt for is far more likely to credit a forgery than one who is not hostile. Sophisticated journalists usually prevent publication of the forgery, and a forged document is more likely to circulate in nontraditional media or on social media platforms.

Front Groups and Friendship Societies

8-18. PA personnel recognize the tactic of front groups and friendship societies. Front groups and friendship societies normally present themselves as nongovernmental, nonpolitical organizations engaged in promoting such desirable goals as world peace, cultural understanding, philanthropy, and education. Front groups can provide an adversary with a covert vantage point from which to disseminate disinformation by providing sensational commentary to the media, provocative imagery, and persuasive funding all in the effort to influence the narrative. PA personnel recognize that fronts are an intelligence function, which falls into the realm of human intelligence and outside of PA.

Influence Operations

8-19. Another tactic that adversaries use is called influence operations. Influence operations involve individuals who openly or covertly support and promote their sponsor's interests. These individuals of

influence may come from virtually any profession. Sometimes adversaries wait until an individual achieves an influential position in government, business, academia, or media before they call on the individual to be a representative for disinformation. PA staffs recognize an influence operation is an intelligence function, particularly when looking at an individual and building a profile on them. This must be avoided by PA staff.

Media Manipulation

8-20. PA staffs recognize the misinformation and disinformation tactic called media manipulation. Media manipulation occurs when adversaries of the Army or U.S. Government place falsely attributed or non-attributed disinformation products in print, broadcast, and social media. These products, which contain misinformation, may appear in regular publications, clandestine broadcasts, or printed brochures. Broadcasts transmit through radio, television, and social media to provide misinformation to various publics. Some broadcasts are clandestine. Overt broadcasts are active in numerous nations that promote disinformation that opposes the Army's interests. PA staff recognize broadcasts of misinformation or disinformation by the manipulator committing gross negligence of facts and errors in fact.

Techniques

8-21. PA staffs study and understand several disinformation techniques used by adversaries. They have no exact formula for detecting if some specific information or allegation is false. However, they can answer certain questions to determine the credibility of the information.

8-22. PA staffs can ask if a covert but influential organization is responsible for a circumstance or event. Does the information contain fantastic claims? Does it identify powerful or destructive organizations or forces that are secretly controlling people or manipulating world events? If so, the information may be a conspiracy theory. Conspiracy theories are rarely true, but are often widely accepted and have appeal. Adversaries often target the U.S. military or intelligence community in conspiracy theories.

8-23. Another technique that PA staffs recognize involves a story circulating as truth that happened to an acquaintance with horrifying elements. Is the story startling, entertaining, bad, amazing, horrifying, or otherwise seemingly too good or too terrible to be true? If so, it may be an urban legend. Urban legends often circulate by word of mouth, email, or the internet. These stories involve false claims that an audience widely believe because they put a common fear, hope, suspicion, or other powerful emotion into story form.

8-24. PA staffs recognize a third technique that involves a shocking revelation. Does the information contain a shocking revelation about a highly controversial issue? Highly controversial issues are natural candidates for the rise of false rumors, unwarranted fears, and suspicions. The 2015 iteration of Jade Helm, the U.S. Special Operations Command exercise, is one such example. Exercise planning documents fictionally depicting certain states in the southwest United States as hostile territory leaked to the public causing the proliferation of unsubstantiated governmental conspiracy theories and garnering national attention. By the time PA personnel got involved, the issue had become a crisis. Several stakeholder organizations and PA staffs diligently worked to mitigate the effects caused by the misinformation.

8-25. PA staffs recognize the technique of using an untrustworthy source. Is the source trustworthy? Certain websites, publications, and individuals have a reputation for spreading false stories. Many websites contain a great deal of unreliable information. Extremist groups, splinter political organizations, and individuals often publish disinformation. Titles of websites can also be deceiving and can present what appear to be official or harmless descriptions to lure viewers. PA staffs look carefully at website details to determine its ownership and validity of source information. This can prove especially difficult if front groups publish false allegations. Front groups purport to be independent, nonpartisan organizations, but actually partisan political parties or interest groups often control the websites.

8-26. Lastly, PA staffs recognize and perform quality research. What does further research tell you? They research allegations. They determine whether information is true or false by researching it thoroughly. PA staffs consider time, lethality, and pressure of a prompt response or release, but there is no substitute for thorough research. These staffs can thoroughly research information using the internet, communication plans, PAG, and other resources.

COUNTERING MISINFORMATION AND DISINFORMATION

8-27. MISO help PA personnel to counter adversary information efforts of misinformation and disinformation. PA staffs work to decrease or mitigate the impact of information with timely, factual messages disseminated to selected target audiences to gain and maintain the information initiative. When PA staffs counter misinformation and disinformation, often while coordinating with other IRCs, they degrade the intended effects of misinformation and disinformation. The timely and accurate dissemination of truthful and verifiable information from credible sources exposes the misinformation. Eventually, synchronized communication can lessen or neutralize the credibility of intentional misinformation and disinformation sources. PA staffs—coordinating with other IRCs—accurately assess the information environment to determine the actual effectiveness versus the perceived effectiveness.

8-28. These staff use the following resources to counter misinformation and disinformation:

- Timeliness and deterrence.
- Synchronization with IRCs.
- Lines of effort relationships
- Communication.
- Various timeframes.

TIMELINESS AND DETERRENCE

8-29. PA personnel use timeliness and deterrence to counter adversary misinformation and disinformation efforts. Army PA personnel have an obligation to keep the American people and Army forces informed, which includes countering misinformation and disinformation directed at those publics. Adversaries can include individuals, organizations, nations, and non-nation state players attempting to influence publics with false or misleading communication.

8-30. An adversary understands that timeliness of disinformation is important in communicating to achieve influence. PA personnel cannot assume positive perceptions and attitudes from leaders, decision makers, and the public. The entity that establishes the narrative first can more easily sway perceptions and attitudes.

8-31. Effective commanders prepare to assume some risk to ensure timely execution of public communication activities. Such activities make available the most contextually accurate information to the public. If commanders hesitate to release information or acknowledge events until after they gather complete facts and circumstances, they can create a void in the disseminated information. An effective adversary can potentially fill that void with disinformation.

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Chapter 9

Digital Media Management and Social Media Maintenance

DIGITAL MEDIA MANAGEMENT

9-1. *Digital media* is text, audio, and VI content that can be transmitted over the internet or computer networks. Army PA content that is released on a website, blog, or social media platform will fall into this category (AR 360-1). Digital media management is the process of communicating information across the command enterprise using an organization's digital tools—including unit websites, CORE, and social media platforms—to build an engaging online presence. Successful digital media management incorporates a digital media strategy. This strategy defines communication objectives and designs plans that leverage the appropriate digital platforms to inform, educate, and engage audiences in support of the commander's communication strategy. A digital media strategy, and the overall digital media management process, takes time and dedicated resources to develop and execute.

9-2. Digital media management aligns the commander's objectives in support of DOD strategic narratives across the entire command enterprise. Generally, garrison commands and echelons at division level and above implement a digital media strategy. PA personnel develop both long-term digital media strategies for commands and event-based strategies in pursuit of singular goals or topics. PAOs balance digital media management—either at the enterprise level or in support of the higher echelon—with daily social media maintenance.

9-3. Social media maintenance is the art of maintaining a dynamic and engaging social presence. It focuses mainly on daily social engagements at the organizational level and in support of higher echelon's digital media strategies. PA staffs maintain social media by systematically performing recurring tasks that lead to creating and posting various types of content. Social media maintenance has no defined start or finish. A digital media strategy has a defined goal or goals with measurable outcomes—or return-on-investment—that supports the commander's intent. PA personnel assess digital media strategies by the successful or unsuccessful completion of defined goals. To complete these goals, PA staffs ensure strategies have defined timelines, allocate resources deliberately, and digitally integrate the command enterprise.

9-4. In the development process, PA personnel consider ways that digital media strategies support or complement larger Army initiatives. PA personnel factor the tie-in to the Army's organizational values and commander's vision. Effective digital media strategies define a purpose and an outcome. Rather than technology centric, digital media management is relationship centric (two-way communication), which requires consistent follow up with audience engagement and synchronization within the command.

COMPONENTS OF A DIGITAL MEDIA STRATEGY

9-5. PA staffs develop a digital engagement strategy with a defined goal or objective if the topic or goal is of great enough importance or has command emphasis. The goal is a one-sentence statement to solve a core problem or seize an opportunity. Often this sentence states the desired outcome to meet a challenge. The statement does not have to be in quantifiable terms. For example, the strategy could be "Decrease the number of drivers stopped for driving under the influence or DUI." The goal of a digital media strategy is typically a broad one. PA staffs tailor the strategy to changing knowledge, attitudes, or behavior. It simply answers the question: What do we want to happen? To develop the strategy, PA staffs perform eight tasks.

RESEARCH BACKGROUND

9-6. Once PA staffs identify a goal for a digital media strategy, they conduct background research on the topic. When conducting background research, they consider three types of research: primary, secondary, and general topic.

9-7. Primary research is information gathered firsthand by the PA staff member with social media management tasks. A social media manager is a PA member who has completed OPSEC Level II and has received all necessary training to publish on social media on behalf of the commander and the unit. PA staffs can collect information in many forms including surveys, focus groups, and personal interviews or studying trends on the unit's social media sites.

9-8. Secondary research is conducted by using pre-existing research found in online databases. This can include scholarly journals, census, and newspapers as well as demographic information found in studies conducted by the base safety office.

9-9. At a minimum, PA Soldiers conduct general topic research in support of communication goals. For example, the commander may have a goal to decrease the number of DUIs. In this case, Soldiers research the number of DUIs in the command during a specified period, hours of work lost due to DUI infractions, financial impacts on Soldiers, career impacts on Soldiers, applicable regulations, and Army guidance. Such extensive research is essential to developing a coherent strategy. When planning to conduct research, PA staffs consider:

- Time constraints.
- Personnel available to conduct the research.
- Commander's intent (speed at which PA staffs must post the topic or content).
- Knowledge about the topic.
- Existing information about the topic.
- Legal issues (when the topic concerns legal or law issues).

CONDUCT ANALYSIS OF BACKGROUND RESEARCH

9-10. Once PA staffs gather all necessary background research, they analyze the research. The analysis should include assessments of social media trends, audiences, and agendas. It should also include identifying gaps in knowledge or capabilities as well as identifying available and emerging platforms, formats, and best practices. Some analysis will include determining the current social media climate. Effective analysis involves analyzing narratives, counter-narratives, other communication trends and tactics, techniques, and procedures. Analyzing the background research also includes selecting tactics, techniques, and procedures from the analysis in support of social media strategy. Lastly, this analysis includes forecasting future effects of current conversations, engagements, and trends. When PA staffs conduct background research, they also perform a digital media audit.

CONDUCT DIGITAL MEDIA AUDIT

9-11. During a digital media audit, PA staffs focus on the organization's internal products as well as external social media platforms. The audit can be a general audit, or specific to the goal of the digital media strategy. An internal audit focuses on organizational communication tools and determines those tools that already support the goal. Some examples of products to review include the following:

- Organization social media platforms.
- Command information products.
- Official emails.
- Press releases.
- All other communication products.

An external audit focuses on other organizations' methods to reach the particular goal of the digital media strategy. An external audit can include other Army organizations as well as external organizations. For example, Mothers Against Drunk Driving has a social media presence that addresses the DUI topic.

9-12. Part of auditing digital media includes looking at existing communication tools. Some communication tools might already focus on reaching a specific audience. For example, PA staffs might use social media to reach external audiences and use emails to reach internal audiences. PA staffs identify which communication tool best reaches which audience. The resulting information helps PA staffs determine the best engagement plan in support of the social media strategy. For each social media platform, they answer the following questions:

- Who (what audience) is using the platform?
- How many people follow the communication platform?
- What are the demographics of the audience for each platform?
- How is each platform currently being used?
- What key messages are currently used on each platform? (This can help shape messaging later in the plan.)
- Is the tone usually serious or light-hearted? (Sudden jokes on a serious platform may damage the message being transmitted.)
- What other stakeholders have interest or are related to the topic?
- What messages are other stakeholders posting about the topic?

9-13. If surveys, analytics, or anecdotal data indicate most users of a particular social media platform are outside the internal audience, a different platform may work better to reach the internal audience. The opposite can be applied to email when trying to reach an external audience. If a particular social media site only has a few followers, PA staffs may not find it useful to use unless the followers are a key audience. Ideally, PA staffs organize the results of a social media audit into a table.

DEFINE OBJECTIVES

9-14. Objectives aim to align efforts, increase transparency, and develop manageable, adaptable, and measurable courses of actions in support of a digital media strategy. PA staffs do not define objectives to identify shortcomings, but more to look at the factors that contributed towards success or failure. While developing objectives, PA staffs annotate the objective, its alignment or support for a competency, and its metric or key result. Most goals have three supporting objectives. The best-formulated objectives result as measurable outcomes. There are often multiple objectives in support of a single goal.

DEFINE KEY RESULTS

9-15. A key result is a milestone. Objectives are directional and tell organizations where to go. PA staffs use key results to measure whether or not the organization achieves the objective. Effective PA staffs organize objectives and key results using a table. They follow these guidelines when developing key results in support of objectives:

- Clear key results to make the objective achievable.
- Quantifiable key results they tie to a number.
- Maximum of 4 key results per objective so they are measurable.

DETERMINE KEY AUDIENCE

9-16. After PA staffs define objectives and key results, staffs use the background research and analysis to determine the key audience. First, PA staffs consider the following demographic categories when developing audience segments for the social media strategy:

- Age.
- Gender.
- Affiliation (military—enlisted, officer, and other Service), civilian, family members, retirees, and contractors.
- Location.
- Marital status.
- Audience core values.

9-17. Beyond demographics, PA staffs can benefit from developing personas and identifying affinities of the intended audience. Personas, which have roots in marketing, are research-based archetypal (modeled) representations of who audiences are, what they are trying to accomplish, and what goals drive their behavior, how they think, how they buy, and why they make buying decisions. Affinities are lifestyle interests of personas and their preferences for certain products or services, respectively. Development of personas provides information necessary so that PA staffs can select an applicable social media platform.

9-18. After PA staffs identify the affinities of the intended audience, they select audience segments. These groups of people need to be informed to support the social media strategy and must be reached to achieve the goal and objectives. PA staffs identify several elements for each segment. These include demographics, behaviors, self-interests, attitudes, values, and media habits. PA staffs determine audience segments during the research section of the digital media strategy to create personas.

9-19. Lastly, PA staffs create the content calendar and implementing strategy. Content is king. Once PA staffs identify the audiences, digital media platforms, and social media platforms, they create a content calendar. The content calendar identifies the type of communication product PA staffs will use, the associated text, and the social media platform. A table or spreadsheet can display the following content calendar tasks:

- Develop digital engagement strategy to deliver messages to personas (the tools and platforms used to engage each persona).
- Create a timeline.
- Select best available platform to engage appropriate audience.
- Identify content to deliver organizational messages.
- Compose social media posts for each platform.
- Assign release schedule to support overall objectives.

Note. Completion of the content calendar results in the template to implement the digital media strategy. Even if not implementing a strategy, a content calendar by itself is a useful tool for social media maintenance.

ASSESS DIGITAL MEDIA STRATEGY OBJECTIVES

9-20. Once PA personnel implement the digital media strategy, they begin tracking effectiveness and assessing for achievement of objectives. Numerous tools exist to conduct assessments on government and social platforms. Government platforms include websites such as Digital Analytics Program (DAP), USAsearch, and Go.USA. Social platforms discuss social media insights and analytics organic to social platforms. When assessing key results, PA personnel consider ways the results support the defined objectives. If PA staffs used surveys or focus groups, they conduct a follow-up measurement. When assessing social media outreach, PA staffs evaluate both qualitative and quantitative measurements. Qualitative data can be observed and recorded whereas quantitative data can be assembled numerically. Qualitative results include anecdotal responses and message penetration as measured from key results, knowledge, attitude, behavior assessments, and surveys. Quantitative results include statics and percentages that involve the number of reaches, impressions, social media likes, shares, retweets, net change in followers, and number of direct engagements.

COORDINATE DISTRIBUTION

9-21. Effective distribution of content is key to a successful digital media strategy. An effective strategy called the hub and spoke method achieves a “dandelion” effect. (See figure 9-1 for a sample of this effect.) With this method, multiple units can act autonomously, but are guided by the priorities of and are synchronized with the U.S. Army brand enterprise. PA staffs achieve an optimal “dandelion” effect by coordinating up and down the enterprise at echelon. This coordination ensures sharing and cross-promotion of content. When PA staffs coordinate distribution properly, they maximize the amplification potential of content across key audiences.

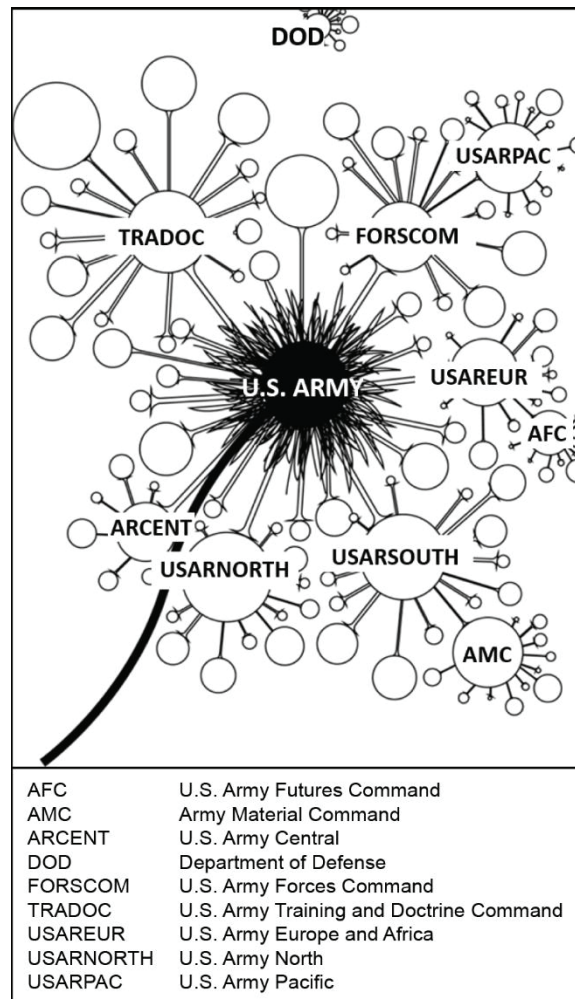


Figure 9-1. Example of the dandelion effect of distribution coordination

SOCIAL MEDIA MAINTENANCE

9-22. Social media assists in the telling of the Army's story. More than ever before, social media is now almost unavoidable in our daily lives. PA personnel use it as a primary communication channel to engage the public and the media. The Army encourages commands, Soldiers, Families, and DA Civilians to use social media safely and accurately to share their experiences and provide information. Commanders and PA professionals understand that social media represents a shift in the way Americans have traditionally communicated. Internet-based platforms such as Facebook, Twitter, Instagram, and Snapchat provide new ways to connect, interact, and learn. Perceptions can be as powerful as the truth within social media. The Internet moves good and bad information quickly. Social media platforms instantaneously connect users with a global network, making the transfer of information even more pervasive. This highly effective tool reaches large communities and audiences.

9-23. Social media is a global and cultural phenomenon, and for many Americans it has become a part of their daily activities. Social media allows Soldiers to tell their story in an authentic and intimate manner, and is the integral piece of any digital media strategy. By interacting with Soldiers, Family members, DA Civilians, and the public on social media platforms, the Army gives its audience increased confidence in and an environment for trusted information. Social media, as part of a commander's communication strategy, helps fulfill the commander's obligation to communicate with all stakeholders. It also provides another, often

richer, means of sharing information with internal and external audiences. Stakeholders increasingly use social media, which requires a digital media strategy to meet these stakeholders where they are.

CONNECTING WITH PEOPLE

9-24. Social media broadly describes various digital communication platforms that allow for social networking. Social media connects people using digital communication technologies to share information and engage in conversations on topics of mutual interest. While specific mediums, platforms, and technologies may change in time, the overall trend of people connecting with other people using technology only increases. Social media is a powerful communications tool. When used correctly, social media can help an organization reach a much larger audience. Social media can help organizations engage in the conversation while promoting awareness of the organization's main communication priorities. However, not all Army organizations use social media effectively. Sub-optimization of social media often occur when organizations rush into social media before determining what it aims to achieve with social media platforms. Using social media effectively is a process and requires a digital media strategy, goals, manpower, and foresight.

ESTABLISHING A SOCIAL MEDIA PRESENCE

9-25. A social media presence extends beyond simply having social media accounts. It includes how the organization uses the accounts and how often they engage audiences. Most Army organizations use social media for online engagements in garrison and operational areas. Developing a successful social media presence does not happen overnight. It is a detailed process that requires extensive planning and execution. When establishing a new social media presence, PA professionals should—

- Get command approval. (See Approval of External Presences in AR 360-1).
- Review official social media policies, guidelines, resources, and training. (See the Army SlideShare website for presentations that discuss social media topics.)
- Determine your audience. PA staffs identify the intended audience and research their social media habits. Stakeholders, politicians, community leaders, criminals, imposters, and even adversaries or enemies are also watching.
- Determine staffing. PA staffs ensure appropriate staffing and resources (personnel, equipment, and connectivity) exist to meet the requirements needed to maintain the platform. They identify primary and alternate PA personnel with social media management tasks as well as identify procedures to transfer established duties.
- Research and select social media platforms. PA staffs determine whether efficiently and effectively maintaining and managing a social media account is possible. An audience's demographic determines what platforms work best to reach it. A person's age, occupation, military affiliation, nationality, and education influence the platforms that person visits.
- Select your name and branding. PA staffs use a logical and easily remembered name that avoids nicknames, call signs, acronyms, or mottos. They include the official U.S. Army logo and other branded graphics to develop a cohesive identity that supports DA efforts. (See the Army Brand Portal website to create an official social media platform.)
- Develop policies, SOPs, and training. PA staffs develop organization-specific social media policies, procedures, and training materials. They ensure the material is readily available and provide training to individuals at all levels of their organization, including Family Readiness Groups.

Appendix A

Defeating Misinformation and Disinformation

COUNTERING MISINFORMATION AND DISINFORMATION WITH CREDIBLE INFORMATION

A-1. Countering misinformation and disinformation requires diligent deterrence. PA staffs deter the adversary's use of misinformation and disinformation with rapid decision making and with informing the public. PA staffs must understand adversarial communication cycles to implement rapid decision making. Deliberate planning that incorporates timely, accurate communication before, during, and immediately following operations mitigates the relative advantage adversaries can gain through speed. PA staffs rapidly make recommendations so commanders can make decisions. Such rapid decision making can reduce lag time through planning while considering the most efficient processes and procedures necessary to produce, approve, and disseminate truthful and accurate information and imagery.

A-2. PA staffs counter misinformation and disinformation by informing the public. Adversary disinformation frequently targets the resolve of the American public. PA staffs counter these disinformation efforts by informing the American public of a threat and affirming trust and resolve in the Army and the command.

A-3. PA staffs provide a continuous flow of credible, reliable, timely, and accurate information and imagery to internal and external audiences. Being first with accurate information helps the commander establish the narrative. PA capabilities help deter adversary efforts to diminish national will, degrade morale, and turn world opinion against friendly operations. Gaining and maintaining the information initiative in a conflict can help discredit and undermine adversary disinformation, and may discourage adversarial malign narrative efforts completely.

A-4. Soldiers assess misinformation and disinformation to determine the source, intent, target, and effects. Informing to facilitate educated decision making counters misinformation and disinformation from others and helps prevent inaccurate information from causing faulty or uninformed decisions.

SYNCHRONIZATION WITH INFORMATION-RELATED CAPABILITIES

A-5. PA personnel synchronize communication efforts with IRCs to counter adversary misinformation and disinformation. The primary coordinator of Army public information is Army PA. Coordinated and synchronized release of information can help counter disinformation as well as help create, strengthen, or preserve conditions favorable for the advancement of national interests and policies. Synchronized actions, images, and words enables successful execution of a commander's communication strategy. Army actions that conflict with official statements, information, or imagery can confuse the public and potentially create lost credibility with that public.

A-6. As PA staffs synchronize IRCs, they ensure actions, themes, and messages complement, reinforce, and are de-conflicted with each other. Such synchronization facilitates units achieving their objectives. PA staffs use the communication synchronization process to synchronize IRCs. (See paragraph 5-57 for a discussion on communication synchronization process.) PA staffs synchronize with IRCs such as IO and MISO.

A-7. It is critical that PA and IO staffs, and especially MISO staffs, synchronize their communications efforts with respect to the adversary due to the fluidity of the information environment. Army PA and IO activities directly support military objectives; counter adversary misinformation and disinformation; and deter adversary actions. Both PA and IO staffs plan and execute information activities and conduct media analysis. IO differ with respect to public, scope, and commander's intent. As such, IO are separate functional

areas. Commanders ensure appropriate coordination between PA and IO activities consistent with the DOD Principles of Information, policy, or legal limitation and security.

LINES OF EFFORT RELATIONSHIPS

A-8. PA personnel use lines of effort relationships to counter adversary information efforts of misinformation and disinformation. These lines of effort enable PA staffs to focus efforts from many partners to establish operational and strategic conditions by linking their tasks. PA staffs receive information from various sources, staffs, and command levels that often conflicts and contributes to misinformation. PA staffs counter opportunities that adversaries take to undermine the credibility of Army PA, communicators, and other friendly organizations. PA staffs maintain a line of effort drive with—

- Intelligence staff.
- OPSEC staff.
- VI personnel.
- Public diplomacy officials.
- Staffs from intergovernmental agencies and departments.
- Personnel from intergovernmental organizations and nongovernmental organizations.
- Host-nation government partners.
- Multinational partners.
- Military information support personnel.
- Information operations personnel.
- Military deception (MILDEC) personnel.
- Foreign policy advisor.

INTELLIGENCE STAFF

A-9. Intelligence staff provides historical and human factor analysis that gives context helpful in evaluating and anticipating adversary disinformation. PA staffs coordinate regularly with open-source intelligence sections and use intelligence assessments and products to plan and enhance PA activities. Requests for intelligence, surveillance, and reconnaissance information and imagery supports the PA mission. Critical information requirements are often mutual between PA and intelligence sections. Intelligence assessments and products can assist PA in developing communication products and PA information provides content for intelligence analysis.

OPERATIONS SECURITY STAFF

A-10. OPSEC staffs evaluate information. PA staffs require OPSEC evaluations particularly for risks related to information proposed for public release. The guiding principle to protect classified, sensitive, and enemy exploitive information is security at the source. Information released inadvertently or intentionally that has not undergone an OPSEC review can provide adversaries with an advantage in their disinformation efforts. PAOs are often the designated release authority. They must thoroughly review imagery and information prior to public release. PAOs are required to be OPSEC Level II qualified. (See AR 360-1 or qualifications.) Balancing OPSEC requirements for security with the need to disseminate critical information in a timely manner enables PAOs to ensure adversaries do not obtain material that would assist their disinformation mission.

VISUAL INFORMATION PERSONNEL

A-11. Visual information effectively counters disinformation. VI personnel provide visual facts to counter deceptive claims or speculation and to bridge the gap between cultures and languages. Quality imagery supported with accurate information has a greater chance of permeating public perception. PAOs use such imagery in products supplemental to traditional and social media channels. VI staffs provide products that assist the commander's effort to bolster public understanding of operations as well as counter adversarial disinformation. PA staffs consider OPSEC before releasing visual imagery from drones or planes; while useful, some imagery proves difficult to release due to classification. Original, unaltered visual imagery is a

compelling tool in combatting disinformation and lends credibility to commanders' efforts to establish and promote the command narrative. Altering official DOD imagery is prohibited with exception for corrections, modifications, and enhancements as specified. (See DODI 5040.02 for imagery policy.)

STAFFS FROM INTERGOVERNMENTAL AGENCIES AND DEPARTMENTS

A-12. Effectively operating in a shared information environment requires PA staff to partner with intergovernmental agencies and other interagency departments interested in communicating common U.S. Government objectives and activities. Operations require consistent communication with approved themes, messages, narratives, and talking points to support the mission and prevent misinformation. PA staffs work with U.S. Government departments and agencies to communicate information quickly and effectively to the public, avoid misinformation, and prevent opportunities for adversarial disinformation campaigns. An example of this shared information among PA staff and intergovernmental departments is the release of information regarding weapons of mass destruction. Such a release can involve non-DOD lines of communications and authorities such as State Department or other diplomatic entities.

PERSONNEL FROM INTERGOVERNMENTAL ORGANIZATIONS AND NONGOVERNMENTAL ORGANIZATIONS

A-13. Intergovernmental organizations and NGOs commonly coordinate communication with PA staffs to mitigate adversarial efforts to spread misinformation regarding foreign humanitarian aid, immunization programs, and foreign government cooperation. Army personnel often work alongside personnel from IGOs and NGOs in theater during military operations. Army personnel deploy to humanitarian aid and disaster relief situations where adversaries will seize any opportunity to discredit and spread doubt.

HOST-NATION GOVERNMENT PARTNERS

A-14. Host-nation governments often support Army operations when they need to communicate with their audiences concerning activities that Army forces conducts in their borders. Open lines of communications and strong partnerships allow credible information to be shared freely between the host-nation and the Army; PA personnel help the host-nation government with this communication. The host nation ensures that audiences understand its relationship with the Army forces, expectations from Army forces, and achievements by Army forces. PA staffs help the host nation identify local issues and concerns related to Army forces, coordinate with PA staffs at the respective embassy, and maintain close coordination with IO planners.

MULTINATIONAL PARTNERS

A-15. PA staffs help coordinate and synchronize the necessary messages used with multinational partners to counter adversary information efforts of misinformation and disinformation. As part of the *National Security Strategy*, the Army commonly works with multinational partners and foreign militaries to build capacity, solve international crises, conduct routine training, and enhance theater security cooperation. Adversaries often seek to fracture multinational partnerships through disinformation in efforts to create an operational area that is more difficult and costly to conduct missions in.

MILITARY INFORMATION SUPPORT PERSONNEL

A-16. PA staffs coordinate with military information support personnel to influence foreign publics to favor U.S. objectives while countering adversarial misinformation and disinformation. MISO seeks to influence the target public's attitudes, opinions, and behaviors while PA seeks to inform and educate international publics. Both staffs continually coordinate to ensure they do not deliver misinformation. Military information support personnel can support approved DSCA missions during continental United States operations by conducting civil authority information support. This support can deliver critical information using information dissemination, printing, reproduction, distribution, and broadcasting. The lead federal agency responsible for the content in civil authority information support products coordinates with PA staffs to ensure the prevention of misinformation.

INFORMATION OPERATIONS PERSONNEL

A-17. IO and PA personnel support the commander's objectives to counter adversary propaganda, misinformation, and disinformation as well as deter adversary actions. Appropriate coordination between IO and PA occurs during planning their respective communication capabilities to support military operations and accomplish the mission. Although PA and IO IRCs and coordination activities can appear as similar, they are not. IO is a separate function and differs with respect to authorities regarding domestic and international populations, scope, and intent. PA primarily seeks to inform and educate audiences, while affecting the content and flow of information that impacts adversaries' decision making. IO on the other hand primarily seeks to influence, disrupt, corrupt, or usurp the decision making of adversaries and potential adversaries while protecting our own. Adversaries often seek to blur the lines between IO and PA operational functions, publics, and information to confuse or influence a target population with no regard for the populations' situational understanding.

MILITARY DECEPTION PERSONNEL

A-18. PA staffs coordinate with MILDEC personnel to counter adversarial misinformation and disinformation. MILDEC deliberately misleads enemy military, violent extremists, or other violent adversarial decision makers to take specific actions (or inactions) that can contribute to friendly mission accomplishment. PA personnel and assets provide truthful information that is not used to conduct MILDEC. PA personnel coordinate with MILDEC personnel for the success of MILDEC operations. This coordination ensures that MILDEC operations do not include PA information since such an inclusion violates OPSEC. This coordinated effort leads to a MILDEC operation that has the sole purpose to confuse the enemy.

COMMUNICATION

A-19. PA personnel use communication to counter adversary information efforts of misinformation and disinformation. Communication that fails to produce understanding by a public through misinterpretation, misrepresentation, or poor delivery can hinder a PA mission and may benefit adversarial malign narrative efforts. An adversary has less difficulty in reaching its objective if the public is misinformed directly through poor communication.

A-20. Traditional media are still the principal means to communicate with publics. PA staffs need media access to counter disinformation and ensure the flow of critical and accurate information to publics. PA planning includes detailed processes, procedures, and support requirements to enable media to meet Army personnel so media representatives can better understand the mission, dispel rumors, and dismiss misconceptions of scripted dialogue regarding the conduct of operations. This direct access requires PA staffs to inform unit personnel at all levels on the PA mission. PA staffs implement an active command information program and deliberate PA training. Such training teaches personnel to participate in interviews with news media representatives and respond appropriately to questions regarding operations. Personnel also learn OPSEC for interviews that meets the needs of the media and protects security of the mission.

A-21. Operations occur internationally, regionally, and locally, necessitating effective public communication that requires both cultural and language capabilities. PA staffs acquire capabilities to support a range of media in accordance with DOD directives and joint policy. Ideally, PA training, media facilitation, responses to query, and media embed operations can accommodate reporters who do not speak English. PA operations especially focus on accommodating host-nation or regional media outlets critical in informing publics most often targeted by disinformation campaigns. Effective PA operations include news releases, public information, and internet sites with applicable regional or local language capability.

A-22. PA staffs traditionally use mass media to reach broad publics. Such mass media often requires communication to be more direct and tailored to specific publics through face-to-face discussion, correspondence, targeted radio broadcasts, newspapers, and digital media. Tailored communication can target friendly, neutral or indifferent, and adversarial publics.

A-23. PA personnel develop quality and accurate media products that support the commander's objectives, set an accurate and truthful command narrative, and deter adversaries. They then leverage available technology to disseminate it rapidly to select publics. Army journalists assigned and embedded in units at all

echelons tell the Army story to intended publics by documenting events and unit actions as they happen. This documentation enables commanders to inform and educate populations in and around a theater of operations.

A-24. PA views communication as a dialogue among people and actively facilitates communication with publics internationally and domestically. Encouraging communication among people facilitates commanders to deter adversarial misinformation and disinformation. PA staffs assist commanders with research and theory to identify key publics and create tailored communication plans to meet specific communication objectives.

A-25. PA personnel must stay abreast of the rapid changes in communication technology. Traditional media does not solely inform and educate key publics like it used to. Digital video, smart phone technology, chat services, and social media move information around the world almost instantaneously. PA communication plans must account for this reality since PA staffs' time to shape the narrative is both greatly reduced and greatly enhanced because of it. Recently, viral social media events—especially in video form—have become an influential method for both misinformation and disinformation. Effective PAOs must be prepared to mitigate these types of events when they occur.

A-26. Countering disinformation requires consistent, coherent, and comprehensive communication originating from synchronized plans. Such plans can include PA running estimates, key public identification, aligned messages and actions, engagement plans, identified spokespersons and representatives, decision points, and assessment measures. The CCS working group typically guides the communication approach, synchronizes communication, and coordinates internal and external audiences who communicate with the command.

TIMEFRAMES

A-27. PA personnel use various timeframes to counter adversary information efforts of misinformation and disinformation. Countering disinformation successfully occurs across short-term, medium-term, and long-term timeframes. Tactics and techniques change across these periods, but PA staffs still must coordinate communication simultaneously. PA staffs ensure that actions and communication are complementary and integrated across all periods to counter disinformation.

SHORT-TERM

A-28. Countering disinformation in the short-term requires identifying and preparing the following:

- Topic or issue requiring attention and response.
- Spokesperson with credibility, presence, appearance, training, and public relationship.
- The type of response necessary.
- The speed or timing of response.
- Mitigation of misinformation and disinformation.

A-29. Rapid decisions are necessary to counter adversary misinformation and disinformation in the short-term. Accurate information delivered first against an adversary requires the commander to assume some risk and may require release authority delegated to lower echelons. The access journalists have affects public perception. The public often perceives granting journalists access to the command for reporting on issues or crisis events as more credible than PA staffs disseminating self-reported information. Third-party advocating is most effective in countering adversarial disinformation.

A-30. In addition, PA staffs counter adversarial disinformation by addressing the adversary's uncertainty regarding the issue, credibility (past and present), lack of verifiable or corroborated information, and transparency. Ideally, PA staffs target the source of disinformation for discrediting, whether an individual or group, to correct the record publically. Deception is the root of disinformation.

MEDIUM-TERM

A-31. Countering disinformation in the medium-term requires PA staffs to determine the commander's current position regarding an operational environment. PA staffs then identify and prioritize communication objectives given the time allowed before execution of the disinformation tactics. PA personnel continuously analyze information and the environment. The results of this mid-term analysis define the perceptions,

attitudes, and behaviors of publics affected by operations. PA staffs gather information to achieve understanding of the publics and prevent opportunities for disinformation effects.

A-32. Different publics require different, tailored messages to counter misinformation. In mid-term timeframes, PA personnel have time to tailor messages to reach intended publics. Messages are important communicators of the position a command has on a topic. A mid-term timeframe enables PA staffs to draft support carefully for a particular theme that does not conflict with another theme. With this additional time, internal cultural advisors and other stakeholders can validate a message by analysis thus preventing unintended message perception or vulnerability to adversarial misinformation.

A-33. Message delivery requires considering the delivery method, culture, and language barriers. Perception of the message can vary based on leader relationships, public bias of media selected to carry the message, political relationship, and past public communication. Determining the knowledge a public has regarding an issue helps PA to determine whether the communication approach should allow for opposing viewpoints or two-sided communication.

A-34. Two-sided communication requires careful planning but is most effective when the public is knowledgeable about the issue or is opposed to the position of the message. This approach also can provide an opportunity for an adversary's disinformation to be discredited point for point, thus achieving correction of the misinformation. Lack of planning for two-sided communication can just as easily reverse the intended affect and provide credibility to an adversary if the adversary carefully designs misinformation delivered in a manner that a public more easily understands.

LONG-TERM

A-35. Countering disinformation in the long-term requires nurturing relationships and engaging in a dialogue of ideas. Building and nurturing relationships can be difficult when commanders and personnel change out over relatively short periods. Maintaining consistency of credibility and communication is even more important to ensure the publics that, regardless of the commander, they can expect truthful and honest communication that underpins enduring positive relationships. Stakeholders requiring enduring relationships can include the media, government departments, agencies, NGOs, IGOs, and host-nation governments.

A-36. Engagement in a dialogue of ideas can build immunities against disinformation when conducted transparently, respectfully, and truthfully. Respectful consideration for other viewpoints, active listening, and sharing of perspectives on various subjects is valuable against adversary disinformation. Dialogue differs from debate. Dialogue seeks to share and understand various perspectives. Debate typically pits opposing viewpoints against each other and seeks a win. Adversarial disinformation seeks to deceive and confuse a public to advance an agenda not compatible with dialogue.

COUNTERING SOCIAL MEDIA AND ONLINE MISINFORMATION AND DISINFORMATION

A-37. Social media has demonstrated its ability to inform, educate, and influence, but it is just as capable of providing misinformation rapidly. PA personnel must maintain a consistent and an effective presence on social media to counter disinformation. Active monitoring by trained and informed PA personnel ensures that a continuous dialogue exists among Army forces and domestic and international publics. Depending on the operation, commanders need PA personnel who have cultural and language training to advise on the most effective social media tools and employment strategies.

A-38. Social media enables instantaneously addressing misinterpretations and misinformation without the mediation effects that traditional media can have. PA personnel can use social media effectively to address misinformation. However, when countering misinformation, PA personnel cannot depend on only one channel. They require a comprehensive use of traditional and nontraditional media to correct the record.

A-39. Adversaries use internet-based communication channels to send false information to susceptible publics. Social media have enabled every user to be a self-proclaimed journalist, publisher, advocate, activist, or spokesperson with no formal training, credentials, or editing for accuracy and facts. Since adversaries can publish anonymously or change user identification, limited accountability exists. Social media were not

designed for disinformation efforts, but adversaries use this technology to support misinformation, deception, and fraud, often with devastating effects.

A-40. Disinformation in word and technology is planned and sophisticated deception. Detecting and countering disinformation is even more challenging on social media. Available systems easily portray photographs, information, and news links. Savvy adversaries have adapted such systems to portray any depiction of imagery, events, or news that they create or manipulate. Adversaries can also alter and distribute photographs, videos, and narratives without linking them to a specific disinformation source. Perceptive adversaries can even manipulate accurate truthful news and information to deceive the public. Misinformation and disinformation via social media has proliferated as more people use social networks as their primary information or news source.

A-41. Misinformation is not always adversarial, but can materialize from speculative reporting on events or incidents such as accidents, casualty causing actions, and conflicts. PA personnel measure the quality of information by its accuracy and its source. When the public receives unverified political commentary, punditry, rumors, or narratives contrived as facts, they spread as quickly through social networks as facts.

A-42. Before countering misinformation, PA staffs must first attempt to understand a public's reasons for believing the information. Strongly held beliefs based on misinformation can result in greater support for an adversary's ideology if the counter to the false narrative offends the sensibilities of the receiving public. Therefore, effective PA staffs must be culturally adept and deliberate when dismantling a false narrative lest doing so threatens the mission and command relationship with certain audiences.

A-43. Countering social media disinformation can be tricky. Sometimes active countermeasures may actually amplify a false or misleading narrative. Before acting, PA staffs consider whether taking action against or acknowledging the misinformation will cause other negative consequences. These staffs consider if action will increase the public's awareness to the misinformation or if action will provide the adversary a form of credibility in some publics' opinion.

A-44. If the commander does choose to counter disinformation, PA personnel need to provide a credible and thorough alternative narrative to the disinformation. PA personnel avoid repeating the false narrative, when possible, and without repeating the misinformation. In addition, if mentioning the misinformation is necessary, PA personnel warn the public so as not to falsely credit a source. Finally, PA personnel properly synchronize the efforts of and deliver at a tempo acceptable to all stakeholders.

A-45. PA staffs' counter of disinformation in social media do not significantly differ from traditional or mass media's attempts. Publics are more likely to accept information that is consistent with other information they perceive as credible. PA staffs analyze the public to determine preexisting beliefs and importance of the beliefs' role in their acceptance of friendly messages. The publics' familiarity with the communicator, their established credibility, and mode of delivery all contribute to message acceptance.

COUNTER NARRATIVE

A-46. Narratives are stories or accounts of events, experiences, or the like, whether true or fictitious. They are stories constructed to give meaning to things and events. Individuals, groups, organizations, and countries all have narratives that reveal how they define themselves. Adversaries often attempt to develop a counter narrative using blatant misinformation and even partially truthful information to promote their agendas.

A-47. Army PA supports the Army's narratives through the truthful telling of the Army story and enduring communication that helps define the commander's goal and desired end state. Army operations, words, actions, and imagery support the DOD strategic narrative. Failure to design communication around overarching narrative consistently provides adversaries with opportunities to exploit U.S. credibility set at an adversarial counter narrative.

A-48. Adversaries of the United States often attempt to develop their own narrative to promote their own objectives and malign narrative agenda. They might use blatant misinformation and even partially truthful information. These opposing forces seek to gain superiority over U.S. or partner nation narratives and discredit the appeal of the friendly narrative while making that narrative irrelevant. This battle of narratives occurs in the information environment but is affected by actions in an operational area, both intended and unintended.

A-49. Winning the battle of narratives requires PA staffs seeking potential vulnerabilities within the messages and anticipating communication actions of the adversary. PA staffs gain perspective by listening to key publics, understanding their needs, and learning what they expect is part of having a direct dialogue with the same publics that an adversary is attempting to deceive.

A-50. PA staffs hold an important position in a battle between competing narratives. Army PA staffs counter the adversarial narrative by executing timely, accurate, synchronized communication. This is the counter narrative, which is simply a narrative going against another narrative. Coordinated counter narratives against adversaries of the United States is necessary to defeat radical violent extremism, adversarial nation states, and non-nation state actors attempting to conduct disinformation operations that threaten an operational area. PA personnel coordinate properly with stakeholders to ensure that a narrative meets the commander's intent, is useful, is synchronized, and ultimately supports the operation plan.

NARRATIVE TYPES

A-51. There are two types of narratives: mission and subject. A mission narrative is the expression of the commander's operational approach for a specified mission. A subject narrative is the expression of the tactical approach for a specified mission. Both narratives aim to be effective. Effective narratives, like other communication products, aid in the dissemination of an organization's message, assist in the organization achieving its desired effects, and are easily understandable. An effective mission or subject narrative should—

- Tell a story by engaging a public.
- Explain the history of a conflict (or an operation).
- Explain unit or organizational actions such as the role a unit plays in achieving the desired effects.
- Explain the way ahead through lines of effort.
- List the end state (what success looks like).
- Include all stakeholders responsible for executing.
- Discuss and use to achieve the intended communication end state.
- Be refined as the situation changes to ensure relevance and maintain its ability to impact.

A-52. A mission narrative describes the intended effects for the mission, including conditions that define the desired end state. It represents the articulation or description of the commander's visualization for a specified mission and forms the basis for the concept of operations developed during detailed planning. It is an explicit reflection of the commander's logic used to inform and educate various mission stakeholders and partners, whose perceptions, attitudes, beliefs, and behaviors can influence the operation. This is very useful in exponentially increasing communication while protecting the mutual understanding and cooperation that partner communicators share. Common adoption of the mission narrative makes it more difficult for an adversary to inject misinformation into an information environment governed by a common narrative.

A-53. Mission narratives inform the development of supporting information themes and messages for the mission. They serve as vital tools for integrating information engagement tasks with other activities during execution. A mission narrative is a concise descriptive account of the mission as a whole. It provides the end-to-end context for the events of the operation or campaign and explains why the operation is necessary. A mission narrative seeks to motivate and facilitate coordinated action by helping the public understand how actions will lead to desired goals and to explain the benefits upon successful conclusion of the effort. It provides a coherent and compelling framework that links the evolution of the situation with the challenges of today, the actions necessary, and the ultimate benefits.

A-54. Mission narratives are divided into four parts. Part 1 discusses the history of the area of operations and provides reasons for the conduct of operations in the operational area. Part 2 lists expected successes and planned progression of the operation. In this part of the narrative, an organization's progression is listed in a 1 to 3 sentence bullets that provide details in support the statement of progress. Part 3 points the way forward focusing on lines of effort that link directly with a higher headquarters' campaign plan. Part 4 describes how the commander's desired end state nests with the higher headquarters campaign plan, be it tactical, operational, or strategic.

A-55. A subject narrative is the expression of the tactical approach for a specified mission. It links to a specified mission and is more specific in scope than a mission narrative. Subject narratives contain the same four parts of a mission narrative. In understanding the narrative and its place within the body of available communication products, PA professionals must understand that a narrative is not a stand-alone document, but is supported with other communication products that synchronize the commander's communications efforts in support of operations. These PA professionals to understand that a single narrative at the strategic level will not effectively support messaging and communication efforts at all levels. Narratives at the strategic, operational, and tactical (unit) levels ideally nest with and support overarching themes, messages, narratives, talking points, effects, and end states via vertical integration for both higher- and subordinate-level organizations. It is critical that narratives nest at all levels with easily ascertainable integration.

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Appendix B

Public Affairs Running Estimate

RUNNING ESTIMATE OUTLINE

B-1. The running estimate provides the basic outline of situations and considerations, mission, courses of action, analysis, comparison, and recommendations and conclusions. Effective plans and successful execution hinge on accurate and current running estimates. A *running estimate* is the continuous assessment of the current situation used to determine if the current operation is proceeding according to the commander's intent and if planned future operations are supportable (ADP 5-0). Failure to maintain accurate running estimates may lead to errors or omissions that result in flawed plans or bad decisions during execution.

B-2. Running estimates are principal knowledge management tools used by the commander and staff throughout the operations process. In their running estimates, the commander and each staff section continuously consider the effect of new information and update the following:

- Facts.
- Assumptions.
- Friendly force status.
- Enemy force status.
- Civil considerations.
- Conclusions and recommendations.

B-3. Running estimates always include recommendations for anticipated decisions. During planning, commanders use these recommendations to select feasible, acceptable, and suitable courses of action for further analysis. During preparation and execution, commanders use recommendations from running estimates in decision making. While staffs maintain formal running estimates, the commander's running estimate is a mental process directly tied to the commander's visualization. Commanders integrate personal knowledge of the situation, analysis of the operational and mission variables, assessments by subordinate commanders and other organizations, and relevant details gained from running estimates. Commanders use their running estimates to crosscheck and supplement the running estimates of the staff.

B-4. Commanders maintain their running estimates to consolidate their understanding and visualization of an operation. The commander's running estimate summarizes the problem and integrates information and knowledge of the staffs and subordinate commanders' running estimates. Each staff element builds and maintains running estimates. The running estimate helps the staff to track and record pertinent information and provide recommendations to commanders.

B-5. Running estimates represent the analysis and expert opinion of each staff element by functional area. Staffs maintain running estimates throughout the operations process to assist commanders in the exercise of mission command. Each staff element and command post functional cell maintains a running estimate focused on how its specific areas of expertise are postured to support future operations. Because an estimate may be needed at any time, staffs develop, revise, update, and maintain running estimates continuously while in garrison and during operations. While in garrison, staffs must maintain a running estimate on friendly capabilities. Running estimates can be presented verbally or in writing. (See FM 6-0 for more information on running estimates.)

BASE RUNNING ESTIMATE

B-6. A comprehensive running estimate addresses all aspects of operations and contains both facts and assumptions based on the staff's experience within a specific area of expertise. Each staff element modifies it to account for its specific functional areas. All running estimates cover essential facts and assumptions, including a summary of the current situation by the mission variables, conclusions, and recommendations. See figure B-1 for a sample PA running estimate.

[CLASSIFICATION]

1. (U) SITUATIONS AND CONSIDERATIONS.

a. (u) Area of Interest. Describe the strategic and operational media environment in which the operation is being conducted and identify the critical factors—the “action and reaction” within global media channels—that might impact the mission. Identify the media environment across the operational continuum, describing it from “austere” for low media interest and capability in a limited area of operations (AO) communication infrastructure to “dynamic for high media interest and capability in a high-tech AO infrastructure.

b. (U) Characteristics of the Area of Operations.

(1) (U) Terrain. List all critical terrain aspects that would impact public affairs operations (such as hilly terrain obscuring satellite dishes for receiving television broadcasts) or require additional support and requirements for escorting media.

(2) (U) Weather. List all critical weather aspects that would affect public affairs operations. Refer to Tab B (Weather) to Appendix I (Intelligence Estimate) to Annex B (Intelligence), as required.

(3) (U) Enemy Forces. Describe enemy public affairs and media disposition, composition, strength, and systems. Describe the enemy’s capabilities and most likely and most dangerous public affairs courses of action (COAs). Forces hostile to U.S. interests can be expected to:

- Attempt to mold U.S. and foreign public opinion using propaganda, misinformation, and fictionalized reporting to discredit the United States and its allies, creating opposition to the operation.
- Seek information about U.S. intentions, military compatibilities, and current activities.
- Use the publicity generated by (potential) terrorism to promote their ideology.

(4) (U) Friendly Forces. List current public affairs resources in terms of equipment, personnel, and systems. Identify additional resources available for the functional area located at higher, adjacent, or other units. List those capabilities from other military and civilian partners that may be available to provide public affairs support. Compare requirements to current capabilities and suggest solutions for satisfying discrepancies.

(a) (U) Higher headquarters public affairs resources and capabilities.

(b) (U) Organic public affairs resources and capabilities.

(c) (U) Attached public affairs units’ resources and capabilities.

(d) (U) Information channel availability. An assessment of the information channels available for the communication of the information in an out of the AO. It identifies the means available to the commander for receipt, transmission, and dissemination of public information.

(5) Civil Considerations.

(a) (U) Media presence. Assess the news media presence in the area of interest prior to deployment and the likely presence of additional news media during the conduct of operations. This assessment should address the authority under which media representatives are operating and the degree of control that can be imposed on their efforts.

(b) (U) Media capabilities. An assessment of the media’s information collection and communication technology, specifically identifying their level of visual information

[page number]

[CLASSIFICATION]

Figure B-1. Sample public affairs running estimate

[CLASSIFICATION]

(c) (U) Media content. *An assessment of the global media's presentation of information and their agendas, an analysis and prioritization of the potential strategic and operational issues confronting the command in the news media. This media content analysis will provide an evaluation of the quantity of coverage and the nature of that coverage.*

(d) (U) Public opinion. *Assessment of the national attitude about the operation and command, leaders, and Soldiers conducting it. This paragraph should include both the perceptions held by major audience groups and the relative solidity or strength of these attacks. A public opinion analysis should include at a minimum an analysis of the following groups:*

- *American public.*
- *Political leaders.*
- *Coalition forces and unified action partners and their publics.*
- *International audiences.*
- *Internal command audience.*
- *Home station public.*

c. (U) Assumptions. *Until specific planning guidance from the commander becomes available, use assumptions for initiating planning or preparing the public affairs running estimate. Modify these assumptions as factual data or planning guidance becomes available.*

2. (U) MISSION. *Enter the restated mission from a public affairs perspective. A mission statement contains no subparagraphs. Keep the American people informed of the operation to the maximum extent possible within the constraints of operations security and personnel safety. Provide public affairs support to on-scene commanders. Provide the media with access to unclassified, timely, and accurate accounts of the operation to counter enemy propaganda and disinformation efforts that discredit U.S. political and military efforts.*

3. (U) COURSES OF ACTION.

- a. (U) *List friendly COAs that were war-gamed.*
- b. (U) *List enemy actions or COAs that were template that template that impact public affairs.*
- c. (U) *List the evaluation criteria identified during COA analysis. All staffs use the same criteria.*

4. (U) ANALYSIS. *Analyze each COA using the evaluation criteria from COA analysis. Review enemy actions that impact public affairs as they relate to COAs. Identify issues, risks, and deficiencies these enemy actions may create with respect to public affairs. Analysis should focus on media facilitation and support, news and information provision, and force training and support. Analyze each COA from a public affairs point of view to determine its advantages and disadvantages for conducting public affairs.*

5. (U) COMPARISON. *Compare COAs. Rank order COAs for each key consideration. Use a decision matrix to aid the comparison process. List advantages and disadvantages of each COA under consideration. Include methods for overcoming deficiencies or modifications required for each COA.*

6. (U) RECOMMENDATIONS AND CONCLUSIONS.

- a. *Recommend the most supportable COAs from the public affairs perspective. Indicate the abilities of the command and other supporting staffs to assist in public affairs.*
- b. *Prioritize and list issues, deficiencies, and risks and make recommendations on how to mitigate them.*

[page number]

[CLASSIFICATION]

Figure B-1. Sample public affairs running estimate (*continued*)

Appendix C

Proposed Public Affairs Guidance

PREPARING AND OBTAINING APPROVED GUIDANCE

C-1. PAG is an operational tool that guides commanders and their PAOs in applying doctrine and policy during major military operations, exercises, and contingencies. Local commanders use the information in paragraphs B-2 and B-3 to assist in preparing and obtaining approved guidance.

C-2. DOD policy requires that commanders provide the PPAG to the ATSD (PA) as the sole approving authority by combatant commands and others, as required for all major operations. This requirement includes major training exercises that could attract international or national attention. PAOs commonly prepare PPAG at their echelon and forward that PPAG through command channels for approval. PAOs ensure PPAG is coordinated with appropriate staff and other organizations, as appropriate. PAOs cannot use PPAG without appropriate echelon approval. (See DODI 5405.03 for PPAG guidance.)

C-3. Upon receipt of the order, the commander, through the PAO, requests PAG from higher headquarters. PAG may be included in an alert order or operation orders. Commanders direct their PAOs to prepare PPAG to forward through command channels to the appropriate approval authority. Commanders of combatant commands ensure that the staff coordinated the PPAG with appropriate organizations within the theater of operations whenever possible (such as embassies, country teams, host-nation governments, and subordinate commands).

PROPOSED PUBLIC AFFAIRS GUIDANCE FORMAT AND CONTENT

C-4. PAOs submit PPAG by email as a document with 1-inch margins and Times New Roman, 12-point font. They avoid using “all caps” font. All PPAG submissions include the sections discussed in paragraphs C-5 through C-25 and shown in figure C-1 beginning on page C-6. Insert “N/A” (for not applicable) for each numbered PPAG paragraph that is not needed or does not apply for the specific PPAG.

C-5. The format for PPAG is as follows:

- Classification
- Subject.
- Paragraph 1: References.
- Paragraph 2: Background and Coordination.
- Paragraph 3: Public Affairs Posture. It includes active PA posture and response-to-query posture.
- Paragraph 4: Holding Statement.
- Paragraph 5: Public Statement.
- Paragraph 6: Themes and Messages.
- Paragraph 7: Questions and Answers.
- Paragraph 8: Public Affairs and Communication Planning Instructions and Command Relationships.
- Paragraph 9: Media Operations.
- Paragraph 9.1: Owned Media.
- Paragraph 9.2: Media Information Centers.
- Paragraph 9.3: Media Embeds or Embarks and Space Available Travel.
- Paragraph 9.4: Media Operations
- Paragraph 10: Public Affairs Points of Contact.
- Paragraph 11: Declassification Instructions.

CLASSIFICATION

C-6. PAOs normally submit PPAG via unclassified email on a Non-classified Internet Protocol Router Network (NIPRNET) system and marked “CUI” (for Controlled Unclassified Information) as the first line of the document. However, PAOs determine the classification of the PPAG according to the classification of the material from which the PPAG was derived and the sensitivity of the event itself.

SUBJECT

C-7. The subject line of the PPAG states “Proposed Public Affairs Guidance for [Insert Name of Operation, Exercise, or Event].” For purposes of distribution and coordination, the subject remains unclassified. If PAOs cannot use an operation, exercise, or event name, they will use an unclassified short title. When the authority approves the PPAG, PAOs will change the subject line to “Approved Public Affairs Guidance (PAG)” for returning it to the submitting DOD component.

PARAGRAPH 1: REFERENCES

C-8. Following the subject line, the first numbered paragraph lists references. This paragraph includes all pertinent messages, orders, DOD and military Services publications, publications that apply to PA policy, and the release of information to the public, strategic communication or other guidance, and other documents as appropriate that informed the process of drafting the PPAG. PAOs use the most current version of all references. This paragraph lists references using a lettering system—such as (a), (b), (c)—and, if applicable, include the message date-time-group and the publication date. This paragraph explains what each reference means and how it contributes to the PPAG. This section is generally not for public release.

PARAGRAPH 2: BACKGROUND AND COORDINATION

C-9. This paragraph explains the purpose of the operation, exercise, or event and describes any significant existing or anticipated problems and limiting factors. It explains how and why DOD assets are participating and why PAG is needed. The paragraph gives background with historical information as well as a description of the current situation. The paragraph may also include communication objectives, key audiences, and other planning guidance on how stakeholders coordinate PA activities among agencies and host nations. This section is generally not for public release.

PARAGRAPH 3: PUBLIC AFFAIRS POSTURE

C-10. This paragraph states the overall PA posture for the operation, exercise, or event. It also states which DOD component retains the PA lead. Only two PA postures are authorized for use: active PA posture and RTQ posture.

Active Public Affairs Posture

C-11. An active PA posture is recommended whenever possible. An active PA posture involves using various communication methods and mediums to stimulate public and media interest, such as distributing press releases and inviting media to cover events, exercises, or operations. The term “active” can have multiple meanings; not all active PA postures are the same, with some more limited in scope than others. This posture is specific. For example, if the intent is to start in a RTQ posture and then move to an active posture, this paragraph provides as much detail as possible (for example, using a holding statement until an initial announcement by a public statement or press release). This paragraph provides specific guidance on what tactics commanders desire after the initial announcement.

Response-to-Query Posture

C-12. An RTQ posture is recommended when there is a desire not to take action to generate media or public interest beyond responding to media queries. On occasion, the PA posture is RTQ until a certain point in the planning and execution of an operation, exercise, or event. At that time, the RTQ posture may change to an active posture. On other occasions, the PA posture will remain RTQ for the duration or until completion of a

military operation, exercise, or event. All PPAG should specify all units or personnel authorized to respond to queries. Release authority at the lowest possible level with security at the source is recommended.

C-13. Some PA personnel mistakenly believe there is a “passive” option to not say anything about a specific military operation. Not responding to a query is not an option. Professional communicators should always be able to respond using a prepared holding statement, even if it is something as simple as “the information you are asking for is classified and not to be discussed publicly.” If applicable, clearly identify when an RTQ posture will change to an active PA posture.

PARAGRAPH 4: HOLDING STATEMENT

C-14. PPAG contains a holding statement PAOs use before release of the approved PAG. Usually, the holding statement emphasizes the nature of the planning process and stresses operational details PAOs are not to discuss before an event, operation, or exercise has been formally announced. PAOs can modify this approach as circumstances dictate. When using a strict RTQ posture, sometimes the holding statement may also serve as the only public statement.

PARAGRAPH 5: PUBLIC STATEMENT

C-15. A PPAG usually contains a statement for public release. PAOs use paragraph 5 in an active PA posture to announce the military activity initially or to respond to queries in an RTQ posture after an operation has commenced. If making a public announcement, this paragraph states who will make the announcement, the method of announcement, the preferred time and date for the announcement, and the rationale for the recommendation. If commanders desire a combined announcement with a host nation or other U.S. Government agency, PAOs include complete details of the methods, time, and procedures in this paragraph. PAOs usually make public statements 1 to 5 days prior to the start of an event. If PAOs intend to make a public statement long before the event begins, they explain why that action is necessary. If the public statement requires multiple paragraphs, PAOs identify each paragraph as a subparagraph of the message. This paragraph explains the time to make the initial announcement, the method (for example, press release, spokesperson, or social media), and the command. The statement should include “(Begin)” at the beginning of the statement and “(End)” at the end of the statement. The last sentence of any statement should identify points of contact or a web address to gather additional information.

PARAGRAPH 6: THEMES AND MESSAGES

C-16. This paragraph lists broad themes and specific messages or talking points to use in support of the operation, exercise, or event. These themes and messages may come from a PA communication strategy or other planning guidance. All communication in support of the PPAG consistently aligns with these themes and messages. Successful PA personnel understand that themes and messages provide guidance and are not expected to be used verbatim. Themes and messages should be concise. If applicable, PAOs specify whether some talking points are restricted for use by specific personnel or commands.

PARAGRAPH 7: QUESTIONS AND ANSWERS

C-17. Questions and answers (often called Q&As) are developed to enable PA personnel to respond to the majority of anticipated questions with a recommended range of the most likely and most difficult or politically sensitive questions expected. PAOs arrange the questions and answers in one paragraph and number them sequentially (for example, Q1, A1; Q2, A2; Q3, A3). Questions and answers are for use in both active PA and RTQ postures. If applicable, PAOs specify which questions and answers are restricted for use by specific personnel or commands.

PARAGRAPH 8: PUBLIC AFFAIRS AND COMMUNICATION PLANNING INSTRUCTIONS AND COMMAND RELATIONSHIPS

C-18. This paragraph defines the approving authority by level of command and procedures for the release or clearance of information. This paragraph indicates if there are other proposed PA activities, considerations, or assumptions and whether this PAG is part of a larger communication strategy involving other elements of

communication. This paragraph provides the timeline of communication delivery and events (such as legislative engagements, local audiences, think tanks, and regional security centers). PAOs include in this paragraph planning information that does not otherwise fit in the PPAG format that may be unique to the individual operation, exercise, or event. Examples include information regarding political sensitivities, media analyses, description of the communication environment, or command PAO recommendations regarding coordination issues. This information is generally not for public release.

PARAGRAPH 9: MEDIA OPERATIONS

C-19. This paragraph explains the rationale on whether owned media (such as professional communicators, COMCAM, American Forces Press Service, American Forces Network) and external media coverage is encouraged or not desired. This section is generally not for public release.

PARAGRAPH 9.1: OWNED MEDIA

C-20. This subparagraph provides instructions on the use of DOD-owned military media; the degree of freedom of movement, including whether escorts are necessary; and the submission and screening of VI materials. PAOs include instructions and information for submissions to the Defense Imagery Management Operations Center (known as DIMOC) and DVIDS. PAOs also specify if host nation-owned media are involved.

PARAGRAPH 9.2: MEDIA INFORMATION CENTERS

C-21. This subparagraph provides instructions on whether centers are single-Service, joint, or combined. It delineates who is responsible to establish the center. It gives a generic description of its composition such as joint PA support element, U.S. Army desk (listing for example, Army major and staff sergeant), or United States Navy or Marine Corps desk (listing for example, Navy commander and Marine Corps sergeant). This paragraph also establishes the center's functions such as coordination of all media and PA activities, clearance of U.S. military-generated news material before release, production of news material for release, and escort of accredited news media representatives. Examples of the various types of media information centers include the Joint Information Bureau, Press Information Centers, and Combined Information Bureau.

PARAGRAPH 9.3: MEDIA EMBEDS OR EMBARKS AND SPACE AVAILABLE TRAVEL

C-22. This subparagraph states whether embeds or embarks are authorized and which command will handle such requests. It lists detailed requirements for news media representatives such as valid passport, working media visa, local accreditation requirements, protective equipment, and funds for food, lodging, and return travel if military air is not available. Additionally, this paragraph provides instructions regarding assistance to continental United States-based units for handling requests from news media for accompanying travel before and following the event. It identifies commanders authorized to provide media transportation on a space available basis. This paragraph provides a chronology of potential events that would be of interest to media. It specifies media ground rules, if established.

PARAGRAPH 9.4: MEDIA OPERATIONS

C-23. Consistent with AR 360-1 and any supporting guidance from the higher headquarters and approving echelons, this subparagraph provides guidance for using digital media, including social media platforms, to inform families and other interested audiences about unit activities in support of military operations. Digital media websites can be a platform on which units create a command or unit presence. This paragraph indicates whether command and individual Service member usage of digital media is encouraged or discouraged to upload photos or post stories; it provides best practice instructions if appropriate. All Service members must remain cognizant of the power of connected media and understand that every word and photo reflects on the United States and its military. Every word and photo should reflect the appropriate tone given the circumstances of the military operation.

PARAGRAPH 10: PUBLIC AFFAIRS POINTS OF CONTACT

C-24. This paragraph lists all relevant point of contact names, phone numbers (Defense Switched Network, commercial, and cell phone if applicable), and email addresses. If applicable, information also includes after-hours contact numbers and email addresses if different from normal duty hours.

PARAGRAPH 11: DECLASSIFICATION INSTRUCTIONS

C-25. This last paragraph describes the declassification instructions in accordance with DODI 5230.09, if required.

**FRAGMENTARY PROPOSED PUBLIC AFFAIRS GUIDANCE
FORMAT AND CONTENT**

C-26. The format and content for a fragmentary PPAG is the same as for a PPAG but may contain less information than a full PPAG submission. PAOs remove the sections not needed or not applicable for the specific fragmentary PPAG submission. They number each paragraph sequentially. At a minimum, a fragmentary PPAG must include the following:

- Classification.
- Subject.
- Background and coordination.
- PA posture.
- Holding and public statements.
- Themes and messages.
- Points of contact.

SUBMISSION PROCEDURES

C-27. All PPAG and fragmentary PPAG email submissions from the commander, through the PAO, to the approving echelon must include an attached document that can be edited as needed. In the text of the email, the commander formally requests echelon approval and specifies the date it is required for use. The email identifies the document as being fully coordinated and theater-approved and lists all commands and agencies that coordinated on the PPAG or fragmentary PPAG. If the document is transmitted to the approving echelon before it is fully coordinated, the submitting command will ensure the approving authority is promptly informed of the results of the remaining coordination. The PPAG or fragmentary PPAG request email includes all coordinating agencies as information addressees. If in doubt about whether to submit PPAG or fragmentary PPAG, commanders or PAOs seek approval through their higher headquarters in coordination with the defense press office (DPO) directorate at the approving authority.

C-28. Most PPAG submissions are CUI and emailed via NIPRNET through a higher echelon PAO to facilitate approval by the ATSD (PA), which allows for fastest interagency coordination. In rare instances, some PPAG requests are classified and require submission to the ATSD (PA) via SECRET Internet Protocol Router Network (SIPRNET) email. All Unclassified/For Official Use Only PPAG submissions submitted by SIPRNET email will be summarily disapproved by the ATSD (PA) and sent back without comment.

C-29. Classified PPAG submissions should always contain an unclassified public statement to respond to query. While the entirety of the PPAG may not be used for the public, an unclassified public statement ensures the public feels informed.

C-30. If applicable, PPAG submissions include an explanation of why a specific date is desired for the initial public announcement. Some submissions are time-reliant, and must not be released until it is deemed acceptable.

C-31. The commander, through the PAO, submits the PPAG via email to the applicable DPO media officer at the ATSD (PA). The commander sends the email as early as possible but no later than 30 days prior to desired initial announcement date. If the PA office does not intend to make an active announcement, then the commander sends the email 30 days prior to the start of an operation, exercise, or event.

ASSISTANT TO THE SECRETARY OF DEFENSE FOR PUBLIC AFFAIRS STAFFING PROCEDURES

C-32. PPAG or fragmentary PPAG requests are assigned to the appropriate media officer from the DPO directorate—usually the media officer who directly supports the submitting DOD component. The media officer then becomes the primary point of contact for the submitting DOD component and is listed under the point of contact (paragraph 10) of the PPAG or fragmentary PPAG.

REVIEW

C-33. The DPO media officer reviews the PPAG or fragmentary PPAG submission to ensure that it is complete and complies with DODI 5405.03. The media officer then determines which DOD or executive level organizations need to review the PPAG, determines an appropriate suspense date for return comments, and requests reviews and comments. The media officer reviews response comments for incorporation into the PPAG. If comments significantly alter the PPAG, the media officer presents the comments to the submitting DOD component and adjudicates any disagreements. If unable to adjudicate disagreements, the DPO media officer elevates the disagreement to the DPO director for resolution or guidance.

APPROVAL OR DISAPPROVAL

C-34. Upon adjudicating and incorporating all the inputs, the DPO media officer prepares a cover memo and submits the final PPAG to the DPO director. The DPO director then recommends approval or disapproval to the Deputy Assistant Secretary of Defense for Media Operations. Upon confirmation of approval, the PPAG becomes official DOD PAG. The DPO media officer emails the PAG to the submitting DOD component and all relevant addresses. If disapproved, the media officer sends the PPAG back to the originator for changes and resubmission for staffing. ATSD (PA) does not issue the PAG via message traffic, but DOD components are authorized to retransmit in message traffic if desired.

<p style="text-align: center;">[UNCLASSIFIED]</p> <p>SUBJECT: Proposed Public Affairs Guidance (PPAG) for [insert name of operation, exercise, or event].</p> <p>1. (U) References.</p> <p style="padding-left: 40px;">a. <i>DODI 5405.3. Development, Submission, and Approval of PPAG.</i></p> <p style="padding-left: 40px;">b. <i>[List all references used in developing this PPAG].</i></p> <p>2. (U) Background and Coordination.</p> <p>3. (U) Public Affairs Posture. <i>The public affairs posture for this event is [active or respond to query]. [State the lowest level organization allowed to use the PPAG, including the holding statement and public statement. For example, "All commanders and spokespersons at the brigade-level and above are authorized to implement this PPAG after the public statement has been released by the combatant command (CCMD). Only the CCMD may use the holding statement." (If these restrictions are necessary)]. [If public affairs posture is expected to change, state the date or action that will signal the change in posture].</i></p> <p>4. (U) Holding Statement. <i>To be used prior to the approval of the PPAG.</i></p> <p>5. (U) Public Statement. <i>The public announcement of this event will be made by the Assistant to the Secretary of Defense for Public Affairs, joint staff, CCMD, operational headquarters, or other organization] using a [media conference, media release, announcement posted to the website, or other method] on or about [state time or event that will signal use of the public statement].</i></p> <p style="text-align: center;">[page number] [CLASSIFICATION]</p>

Figure C-1. Sample proposed public affairs guidance format

<p style="text-align: center;">[CLASSIFICATION]</p> <p>6. (U) <u>Themes and Messages.</u></p> <p>6.1. <i>State who can use the messages, for example: These themes and messages are for use by all participants who talk to the media.</i></p> <p>6.1.1. <i>State overarching theme.</i></p> <p>6.1.1.1. <i>State supporting message.</i></p> <p>6.1.1.2. <i>State additional supporting messages.</i></p> <p>6.2. <i>State clearly if some messages are reserved for use by a higher level. For example: These themes and messages are for use above the tactical and operational level and will only be used at the CCMD headquarters or above.</i></p> <p>6.2.1. <i>State overarching theme. Continue with paragraphs as needed.</i></p> <p>7. (U) <u>Questions and Answers.</u> <i>Annotate clearly if any questions and answers are reserved for a certain spokesperson or certain level of command.</i></p> <p>Q1.</p> <p>A1.</p> <p>Q2.</p> <p>A2.</p> <p>8. (U) <u>Public Affairs and Communication Planning Instructions and Command Relationships.</u></p> <p>8.1. <i>State the approving authority for release of information. If necessary, describe circumstances that require a higher level of approval. Describe procedures and points of contact for crises situations. Include any planning guidance not written elsewhere in the PPAG.</i></p> <p>9. (U) <u>Media Operations.</u></p> <p>9.1. <u>Owned media.</u> <i>Describe how Department of Defense-owned media will be used and whether or not there are any restrictions on their movement or coverage.</i></p> <p>9.2. <u>Media information centers.</u></p> <p>9.3. Media embeds or embarks and space available for travel</p> <p>9.4. <u>Online and social media.</u></p> <p>10. (U) <u>Public Affairs Points of Contact.</u> <i>Include off-duty-hour contact information. List primary point of contact for this exercise or event as the first entry.</i></p> <p>10.1. <i>List Assistant to the Secretary of Defense for Public Affairs defense press operations desk officer as the last entry. Include after-hours information. After duty hours, contact dutyofficer@osd.mil or 555-555-5555.</i></p> <p>11. (U) <u>Declassification Instructions (if required).</u></p> <p style="text-align: center;">[page number] [CLASSIFICATION]</p>

Figure C-1. Sample proposed public affairs guidance format (*continued*)

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Appendix D

Public Affairs Annex

ANNEX FORMAT

D-1. All plans and orders follow the five-paragraph order format. The five specific paragraphs consist of the situation, mission, execution, sustainment, and command and signal. Attachments (annexes, appendixes, tabs, and exhibits) are information management tools added to orders and plans. Attachments also follow the five-paragraph format except matrixes, overlays, and lists. Staffs list attachments under an appropriate heading at the end of the document they expand. For example, they list annexes at the end of the base order. (See FM 6-0 for specifics on writing and formatting annexes.)

SAMPLE ANNEX

D-2. Figure D-1 illustrates Annex J (Public Affairs) to a base plan or order. This figure provides fundamental considerations, formats, and instructions for developing Annex J (Public Affairs) to the base plan or order. Commanders and staffs use Annex J (Public Affairs) to describe how PA supports the concept of operations described in the base plan or order.

[CLASSIFICATION]
<p><i>Place the classification at the top and bottom of every page of the attachments. Place the classification marking at the front of each paragraph and subparagraph in parentheses. Refer to AR 380-5 for classification and release marking instructions.</i></p> <p>Copy ## of ## copies Issuing headquarters Place of issue Date-time group of signature Message reference number</p> <p><i>Include the full heading if attachment is distributed separately from the base order or higher-level attachment.</i></p> <p>ANNEX J (PUBLIC AFFAIRS) TO OPERATION PLAN/ORDER [number] [(code name)]— [(classification of title)]</p> <p>(U) References: <i>List documents essential to understanding the attachment.</i></p> <ul style="list-style-type: none">a. <i>List maps and charts first. Map entries include series number, country, sheet names or numbers, edition, and scale.</i>b. <i>List other references in subparagraphs labeled as shown.</i>c. <i>Doctrinal references for public affairs activities include FM 3-61 and JP 3-61.</i> <p>(U) Time Zone Used Throughout the OPLAN or OPORD: <i>Write the time zone established in the base plan or order.</i></p> <p>(U) Task Organization: <i>Describe the organization of forces available to the issuing headquarters and their command and support relationships. Refer to Annex A (Task Organization) if long or complicated.</i></p> <p>[page number] [CLASSIFICATION]</p>

Figure D-1. Sample Annex J (Public Affairs)

[CLASSIFICATION]
<p>ANNEX J (PUBLIC AFFAIRS) TO OPERATION PLAN/ORDER [number] [(code name)]— [(classification of title)]</p> <p>1. (U) <u>Situation.</u> <i>Include information affecting public affairs that paragraph 1 of the OPLAN or OPORD does not cover or that needs expansion.</i></p> <p style="padding-left: 40px;">a. (U) <u>Area of Interest.</u> <i>Describe the area of interest as it relates to public affairs. Refer to Annex B (Intelligence) as required.</i></p> <p style="padding-left: 40px;">b. (U) <u>Area of Operations.</u> <i>Refer to Appendix 2 (Operation Overlay) to Annex C (Operations).</i></p> <p style="padding-left: 80px;">(1) (U) <u>Terrain.</u> <i>Describe the aspects of terrain that impact public affairs activities. Refer to Annex B (Intelligence) as required.</i></p> <p style="padding-left: 80px;">(2) (U) <u>Weather.</u> <i>Describe the aspects of weather that impact public affairs. Refer to Annex B (Intelligence) as required.</i></p> <p style="padding-left: 40px;">c. (U) <u>Enemy Forces.</u> <i>Identify enemy forces' general communications and media capabilities. Describe the enemy's disposition, location, strength, and probable public affairs courses of actions, including disinformation, rumors, and propaganda. Refer to Appendix B (Intelligence) as required.</i></p> <p style="padding-left: 80px;">(1) (U) <u>Enemy Communications and Media Capabilities.</u> <i>Identify enemy forces' general communications and media capabilities, including television, radio, and print mediums as well as online and social media capabilities.</i></p> <p style="padding-left: 80px;">(2) (U) <u>Enemy Courses of Action.</u> <i>Describe enemy's employment of communications and media capabilities that would impact friendly operations and public affairs operations.</i></p> <p style="padding-left: 40px;">d. (U) <u>Friendly Forces.</u> <i>Outline the higher headquarters' plan (and public affairs annex) and adjacent unit public affairs plans. Provide information on friendly coalition forces, which may impact the public affairs mission. Note public affairs resources supporting the unit (who, where, when) and higher, allied, and adjacent headquarters.</i></p> <p style="padding-left: 80px;">(1) (U) <u>Higher Headquarters Public Affairs Mission.</u> <i>State the public affairs mission of the higher headquarters.</i></p> <p style="padding-left: 80px;">(2) (U) <u>Public Affairs Mission of Adjacent Units.</u> <i>Identify and state the public affairs missions of adjacent units and other units whose actions have a significant impact on the issuing headquarters.</i></p> <p style="padding-left: 40px;">e. (U) <u>Interagency, Intergovernmental, and Nongovernmental Organizations.</u> <i>Identify and describe other organizations in the area of operations that may impact the conduct of operations of public affairs operations or implementation of public affairs activities.</i></p> <p style="padding-left: 40px;">f. (U) <u>Civil Considerations.</u> <i>Describe critical aspects of the civil situation that impact public affairs operations. Refer to Annex K (Civil Affairs Operations) as required.</i></p> <p style="padding-left: 40px;">g. (U) <u>Attachments and Detachments.</u> <i>Identify all augmenting public affairs units supporting this command and all attached or assigned subordinate units. Include effective dates, if applicable.</i></p> <p style="padding-left: 40px;">h. (U) <u>Media.</u> <i>Identify media in the area (who, where, and pools) including U.S., international, and host nation.</i></p> <p style="padding-left: 40px;">i. (U) <u>Assumptions.</u> <i>List any additional assumptions or information not included in the general situation that will impact the public affairs mission.</i></p> <p>2. (U) <u>Mission.</u> <i>State the mission of public affairs in support of the base plan or order.</i></p> <p style="text-align: center;">[page number] [CLASSIFICATION]</p>

Figure D-1. Sample Annex J (Public Affairs) (*continued*)

[CLASSIFICATION]

ANNEX J (PUBLIC AFFAIRS) TO OPERATION PLAN/ORDER [number] [(code name)]—
[(classification of title)]**3. (U) Execution.**

a. (U) Scheme of Public Affairs. *Describe how public affairs supports the commander's intent and concept of operations. Summarize how the commander visualizes executing the public affairs plan. Include public affairs priorities: Intent (access, information, welfare, morale, and will to win), concept (who, where, what, why, and when), specifics (tasks to a subordinate; who is to do what, where, and when, including nonpublic affairs activities), and actions with media (credential, train, and transport).*

(1) (U) Outline of Public Affairs Objectives. *Describe clearly defined public affairs objectives that the commander intends to achieve.*

(2) (U) Outline of Public Affairs Tasks. *Identify and assign supporting public affairs tasks to each objective. Assign specific tasks to elements of the command charged with public affairs tasks. Establish priorities of support for each phase of the operation.*

(b) (U) Tasks to Subordinate Units. *Identify and list public affairs tasks assigned to subordinate units not contained in the base order including maneuver and augmenting public affairs units. Also identify unit public affairs representatives' requirements.*

(c) (U) Coordinating Instructions. *Give details on coordination, task organization, and groupings. List instructions that apply to two or more subordinate elements or units. Refer to supporting appendixes (public affairs running estimate) not referenced elsewhere (public affairs guidance, media in country, media en route with U.S. forces, media contact report, handover checklist, task organization, and public affairs synchronization requirements).*

4. (U) Sustainment. *Identify priorities of sustainment for public affairs key tasks and specific additional instructions as required by the paragraph below. Refer to Annex F (Sustainment) as required.*

a. (U) Logistics. *Use subparagraphs to identify priorities and specific instructions for maintenance, transportation, supply, field services, distribution, contracting, and general engineering support. Outline requirements for establishing a media operations center (if required) and embedded journalists. Refer to Annex F (Sustainment) and Annex P (Host-Nation Support) as required.*

b. (U) Personnel. *Use subparagraphs to identify priorities and specific instructions for human resources support, financial management, legal support, and religious support. Refer to Annex F (Sustainment) as required.*

5. (U) Command and Signal.

a. (U) Command. *State the location of key public affairs leaders (to include media operations center location and public affairs contact information).*

b. (U) Control. *State the public affairs liaison requirements not covered in the base order.*

c. (U) Signal. *Address any public affairs specific communication requirements (such as commercial internet or Defense Visual Information Distribution Systems) and reports. Refer to Annex H (Signal) as required.*

[page number]
[CLASSIFICATION]

Figure D-1. Sample Annex J (Public Affairs) (*continued*)

<p style="text-align: center;">[CLASSIFICATION]</p> <p>ANNEX J (PUBLIC AFFAIRS) TO OPERATION PLAN/ORDER [number] [(code name)]— [(classification of title)]</p> <p>ACKNOWLEDGE: <i>Include only if attachment is distributed separately from the base order.</i></p> <p style="text-align: center;">[Commander's last name] [Commander's rank]</p> <p><i>The commander or authorized representative signs the original copy of the attachment. If the representative signs the original, add the phrase "For the Commander." The signed copy is the historical copy and remains in the headquarters' files.</i></p> <p>OFFICIAL:</p> <p>[Authenticator's name] [Authenticator's position]</p> <p><i>Use only if the commander does not sign the original attachment. If the commander signs the original, no further authentication is required. If the commander does not sign, the signature of the preparing staff officer requires authentication and only the last name and rank of the commander appear in the signature block.</i></p> <p>ATTACHMENTS: <i>List lower-level attachment (appendixes, tabs, and exhibits).</i></p> <p>Appendix 1—Public Affairs Running Estimate Appendix 2—Public Affairs Guidance</p> <p>DISTRIBUTION: <i>Show only if distributed separately from the base order or higher-level attachments.</i></p> <p style="text-align: center;">[page number] [CLASSIFICATION]</p>

Figure D-1. Sample Annex J (Public Affairs) (*continued*)

Appendix E

Communication Plan

COMMUNICATION PLANNING GUIDANCE

E-1. Communication planning guidance is a method by which senior PA staffs enable subordinate PA staffs to support Army-level communication objectives. PAOs use guidance to publish a communication plan (COMPLAN) at the discretion of senior PA staffs. The guidance helps PAOs complete the COMPLAN. This plan enables senior PA staffs to make clear to subordinate PA staffs the limits necessary for conversations between leaders and media, Soldiers and the public, and through social media. The COMPLAN contains four paragraphs: references, situation analysis, execution, and command and signal.

FORMAT AND CONTENT

E-2. The content contained in a COMPLAN consists of four paragraphs. Paragraph 1 lists references. Paragraph 2 details the situation analysis. Paragraph 3 addresses execution of the plan. The COMPLAN concludes with Paragraph 4 labeled command and signal that contains contact information.

PARAGRAPH 1: REFERENCES

E-3. The first paragraph of a COMPLAN lists overarching and month-specific references and other directives pertinent to the communication planning guidance. Common examples at the Headquarters, Department of the Army level include the Army Vision, and Army Strategy. Common monthly examples include communication synchronization products and monthly communication concept of operations produced by OCPA and at echelon. This paragraph additionally contains references at echelons between the issuing PA staff and OCPA, as deemed necessary by the issuing PA staff. See figure E-1 for Paragraph 1.

1. REFERENCES
<ul style="list-style-type: none">• Overarching: <i>Army Vision; Fiscal Year XX Army Campaign Plan; Army 20XX Strategy; General Order #1</i>• Month-specific: <i>Monthly and quarterly Office of the Chief of Public Affairs Communication Synchronization; December Concept of Operations ; Fiscal Year XX Communications Plan Assessment Framework</i>

Figure E-1. COMPLAN paragraph 1

PARAGRAPH 2: SITUATION ANALYSIS

E-4. Paragraph 2 guides the PAOs to analyze the situation by providing the commander's intent and other relevant information. The situation analysis contains the following sub-paragraphs listed in paragraphs E-5 through E-10. See figure E-2 on page E-2 for Paragraph 2.

Intent

E-5. The commander's intent sub-paragraph is derived from the commander at the issuing echelon. It includes the communication focus and describes ways communication efforts support the higher Army- and communication-centric objectives.

Overarching Chief of Public Affairs Guidance

E-6. This sub-paragraph provides a communication focus and directions for implementation of the COMPLAN. It also identifies pertinent products disseminated by higher headquarters including higher PA directives and other products (for example, the Chief of Public Affairs sends an Army Communication Guidebook).

Expanded Purpose

E-7. This sub-paragraph links the guidance in the Intent subparagraph to long-term communication imperatives. The imperatives can include Title 10 responsibilities and relate to overarching References listed in COMPLAN paragraph 1.

Communication Objectives

E-8. This sub-paragraph lists the desired objectives intended for target audiences to receive and understand, by key message.

Target Audiences

E-9. This sub-paragraph identifies specific audiences for which the Communication Objectives are intended. Target Audiences contains the following sub-paragraphs:

- **Desired Objectives.** Desired Objectives sub-paragraphs follow each target audience. These sub-paragraphs identify tailored versions of Communication Objectives that are intended to resonate most effectively with each target audience. Key messages for each specific target audience are outlined here.
- **Core Opportunities and Key Challenges.** This paragraph contains the following two sub-paragraphs:
 - **Core Opportunities** are events in the external information environment that are conducive to Army messaging and therefore represent opportunities to align Army messaging with the needs of target audiences. Core Opportunities also include Army-driven events likely to result in significant media and public interest, including Army Senior Leader events and major announcements. In total, Core Opportunities are the highest-yield communication opportunities. This paragraph aids subordinate commands and PA staffs in prioritizing their own communication focuses and efforts.
 - **Key Challenges** are events in the area of operations likely to inhibit progress toward Key Opportunities, including competing national events, waxing or waning public interest by topic, and prevailing media narratives and interest.

E-10. **Desired End State.** This paragraph directly nests into communication objectives and target audiences established by higher headquarters PA staffs. It details the logical ties between efforts in COMPLAN and specific, quantifiable progress toward communication objectives.

2. SITUATION ANALYSIS
<ul style="list-style-type: none"> ● Intent: <i>As directed by the Secretary of the Army, the monthly communication focus for December 20XX is Army Values with a theme of "Commitment by All." This is executed through a DAS-directed process as part of the Army Campaign Plan.</i> ● Overarching CPA Guidance: <i>The Army Communication Enterprise will...</i> <i>Public affairs professionals should identify events and opportunities that fall within their organization's area of responsibilities and help amplify the Army Vision and Secretary of the Army's priorities</i>

Figure E-2. COMPLAN paragraph 2

- **Expanded Purpose:**

December presents a number of opportunities to build trust and confidence in the Army as a values-based institution. The Army Communication Enterprise will synchronize resources and efforts to communicate how Soldiers are ready to fight and win our Nation's wars while continuing to treat everyone with dignity and respect. Priority will go toward highlighting service in communities and while deployed, commitment to teamwork, and mutual trust.

- **Communication Objectives:**

- Communicate to the American People and Internal Army audiences that the Army is pursuing initiatives to further strengthen the 'culture of trust.'*
- Communicate the importance of direct leaders to inspire and motivate Soldiers and Army Civilians to embrace a shared identity as trusted professionals.*

- **Target Audiences:**

OCPA has identified two key audiences for the Army to communicate and engage with during the month of December:

- American People*
- Internal Army*

- **Desired Objectives:**

- American People:*
 - Reinforce the Army upholds high standards and values*
- Internal Army:*
 - Communicate that the Army is pursuing initiatives to strengthen the culture of trust further based on dignity and respect.*
 - Communicate that the Army leaders are committed to strengthening a strong professional organizational climate grounded in the Army Values*
- Communicate that it is every Soldier and Army Civilian's responsibility to strengthen the culture of trust and live the Army Values.*

- **Core Opportunities and Key Challenges:**

- Core Opportunities:*
 - The month of December provides opportunities to highlight the Army's commitment to its values: Loyalty, Duty, Respect, Selfless Service, Honor, Integrity, and Personal Courage.*
 - The holiday season, with its focus on family and giving, is a time when most media outlets highlight the contribution of service members with a connection to outlets' communities and the sacrifices of those serving away from their families during the holiday; both deployed and stationed abroad*
 - The end of the year is a reflective period for many Americans. It provides an opportunity to highlight accomplishments the Army has made in the past year to strengthen the culture of trust and strengthening a strong professional organizational climate that exemplifies the Army Values.*
 - Focus Events: Army leaders have approved the Army-Navy Football Game, Holiday Block Leave and the Reagan Defense Forum as focus events that should be the backbone of communicating Army Values this month. Other events that provide significant opportunity for messaging amplification include Army Senior Leader outside the continental United States travel, televised holiday greetings from deployed troops, and Army Band performances. Additionally, the Army is observing the National Guard Birthday on December 13.*
 - Army Senior Leader Events: Army Senior Leaders have several engagements that will amplify this message. This includes attending the Army-Navy Football Game, the Armed Forces Bowl, the Army Community Partnerships Recognition Ceremony, a Pittsburgh Field Band Concert, and they will visit forward-deployed Soldiers.*

Figure E-2. COMPLAN paragraph 2 (continued)

b. Key Challenges:

- 1. The holiday season presents limited time for engagements with condensed schedules and significant leave downgrading the availability of all organizations to perform engagements.*
- 2. Unplanned events or the release of information that detracts from the monthly focus (for example, unforeseen geopolitical issues or crises, political or whistleblower controversies, reports, FOIAs, and misconduct.)*
- 3. Sexual Harassment Assault Response Prevention (SHARP) report.*
- 4. Identifying and coordinating with the appropriate staff.*

c. Desired End State:

- 1. Base on the FY19 Communication Plan Assessment Framework*
- 2. Contribute to the effort to increase awareness by 10 percent among the American People, by XX Sept XXXX that the Army is a values-based organization.*
- 3. Contribute to the effort to increase awareness among Internal Army by 10 percent by XX Sept XXXX that the Army is a Values-based organization that fosters professionalism and trust.*
- d. Reinforce to Congress that the Army is a values-based organization.*

Figure E-2. COMPLAN paragraph 2 (*continued*)**PARAGRAPH 3: EXECUTION**

E-11. The Execution paragraph uses Army operations planning as a baseline format, with modifications for communication-specific guidance. This paragraph contains four sub-paragraphs listed in paragraphs E-12 through E-15. See figure E-3 for paragraph 3.

Concept of Operations

E-12. This sub-paragraph outlines efforts by the concept of operations, with attention to each involved PA staff. The concept of operations follows the plan, prepare, execute, and assess operational framework, with follow-on phases incorporating preparation of an environment for future communications.

Key Tasks

E-13. This sub-paragraph identifies PA staff elements, at the level of command that issues the COMPLAN, and the tasks they must complete to enable the specified Communication Objectives in COMPLAN paragraph 2.

Tasks to Subordinate Units

E-14. This sub-paragraph identifies PA staff elements, at levels of command below the command issuing the COMPLAN, and the tasks they must complete to enable the specified Communication Objectives in COMPLAN paragraph 2. Tasks to Subordinate Units are not authoritative unless published through operational channels. When necessary, senior PA staffs liaise with their respective S-3 or G-3 staffs to publish these tasks formally. When supporting named operations, PA staffs may elect to publish Annex J (Public Affairs) to base operation order, or formal COMPLAN, or both. Command direction and operational guidance are the final determinants of the products used.

Coordinating Instructions

E-15. This sub-paragraph includes reporting requirements and other items deemed necessary by the issuing PA staff. Common elements in this paragraph include guidance for engagement through different types of media, including social media, traditional media, in-person communication, and others. As with Tasks to Subordinate Units, this paragraph is not authoritative unless published through operational channels.

3. EXECUTION

- **Concept of Operations:**

- a. *Phase I- Plan and Prepare*

- 1. *OCA-led efforts*

- i. *OPT-GOSC content development*

- ii. *Council of Colonels*

- 2. *ASL PAO planning efforts*

- i. *Identification and planning for ASL participation in engagements that support the monthly focus.*

- ii. *Organization-led planning efforts*

- iii. *Identification of key events and opportunities that can support the monthly focus*

- b. *Phase II- Execution efforts*

- 1. *Listed organizations will perform the key tasks listed below*

- c. *Phase III- Drumbeat and Assessment*

- 1. *Amplify: All organizations will continuously look for opportunities to amplify the monthly communications focus.*

- 2. *Assessment: OCPA Assessments Division will prepare a final, total all-encompassing assessment report on the Army's communication effort for the month of December. Information for this report will come from all messengers and sensors listed below with key tasks.*

- d. *Phase IV- Prep the battlefield for the next operation.*

- 1. *Identify OPRs for communications products over the next quarter.*

- 2. *Nominate, plan and staff Bugle Call and Bugle Notes for January.*

- **Key Tasks:**

- a. *OCPA Activities*

- 1. *Strategy and Plans Division:*

- i. *SPD will develop a monthly communication plan with input from key offices.*

- ii. *Communication Synchronization Army-wide: To facilitate consistent, synchronized and unified messaging across the U.S. Army, OCPA will publish a CPA Sends at the end of November with the communication strategy specifically drafted for December's communication focus.*

- iii. *Top Line Messages:*

- *The responsibility to defend our nation requires commitment by all – especially leaders – to the Army Values. This includes treating everyone with dignity and respect, collaborating broadly, and always doing the right thing.*

- *Soldiers learn the Army Values – Loyalty, Duty, Respect, Selfless Service, Honor, Integrity and Personal Courage – during basic combat training, and they must live them every day in everything they do.*

- *We embrace and uphold the Army Values and standards of the profession, and we are always accountable to each other and the American People for our decisions and actions.*

- *December Bugle Call with Supporting Bugle Notes:*

- o *Talent Management*

- o *Army Ethics and Values*

- o *Soldier for Life/Commitment to Veterans*

- o *Value of the Army Profession*

- o *Commitment by All*

- o *Call to Service*

- *December Observances:*

- o *National Guard Birthday (XX Dec)*

Figure E-3. COMPLAN paragraph 3

b. Digital Media

1. Develop content to be published on Army.mil and the Army's social media platforms that highlights the Army's Values.
2. Amplify content from other Army organizations highlighting Army Values on the Army's social media accounts.
3. Develop and amplify content for each of the month's focus events (Army-Navy football game, Reagan Defense Forum, Holiday Block Leave, Army Professional Forum, Accessions focus event).
4. Develop a list of hashtags that will be used throughout the month which will identify a post as being tied to Army Values.

c. Outreach:

d. MRD

e. Assessments Division:

1. Will collect information from messengers and sensors on messaging efforts in December.
2. Will analyze this information and provide an overall assessment at the January GOSC.
3. Will develop and refine a framework using this information for the next month that Values are to be highlighted.

f. Tasks to Subordinate Units:

1. According to the FY19 Comms Plan Assessment Framework, the following entities are either messengers or sensors of messaging opportunities and will be tasked appropriately:

i. TRADOC

ii. FORSCOM

iii. ASLs/ASL PAOs

iv. OCPA DMD

v. ASCCs

vi. OCLL

vii. SAFM-BUL

2. Subordinate offices will not be included in the December communications plan, but can be expected to join the process later.

g. Coordinating Instructions:

i. Traditional Media:

- Coordinate and pitch media stories that highlight the Army's high standards and values.

ii. Social Media

- Communicate organization and leader activities as appropriate with OCPA DMD and other Army Organizations.
- Publish content on social media that discusses how the Army holds high standards and values.
- Use the hashtags developed by OCPA DMD in posts that highlight Army Values.

iii. All components listed above will provide an assessment of their task-related activities for December no later than the fifth business day of January (XX Jan). This assessment should consist of the number and type of engagements or attempted engagements, and pertinent information related to each engagement (such as. number of articles published on an engagement or number of executives met with).

Figure E-3. COMPLAN paragraph 3 (*continued*)

PARAGRAPH 4: COMMAND AND SIGNAL

E-16. This paragraph contains contact information for, at a minimum, one point of contact from the issuing PA staff. Best practices are to include points of contact by effort or purpose such as points of contact for assessment, media facilitation, and command information. See figure E-4 for Paragraph 4.

4. COMMAND AND SIGNAL

- **OCA Strategy and Plans Division:**

a. COL ABC DEFF -----@mail.mil; 703-XXX-XXXX

b. Ms. GHI JKLM -----@mail.mil; 703-XXX-XXXX

c. MAJ NOP QRST -----@mail.mil; 703-XXX-XXXX

d. Mr. UVW XYZA -----@mail.mil; 703-XXX-XXXX

- **OCA Assessments Division:**

a. Ms. ZYX WVUT -----@mail.mil; 703-XXX-XXXX

b. LTC SRQ PONM -----@mail.mil; 703-XXX-XXXX

Figure E-4. COMPLAN paragraph 4

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Appendix F

Media Facilitation Products

MEDIA QUERY PROCEDURES


F-1. When PA personnel receive a media query, they use several products to facilitate responses:

- DA Form 7675 (*Media Query*).
- Query Log Book.
- Media briefing checklist.
- Communication goals.

F-2. Media queries usually start with a phone call or a visit from a media representative who wants information. PA personnel complete DA Form 7675 to record the query whether on the phone or in person. See figure F-1 on page F-2 for an example form. Ideally, PA personnel give the media a response as quickly as possible. However, PA personnel should not commit to getting answers within a certain time.

F-3. The Soldier or civilian receiving the query completes DA Form 7675 with clear information. Journalists and PA personnel only answer questions with information that is accurate and cleared for public release. All responses should be free of jargon. PA personnel explain any military terms they use.

F-4. Before personnel release information, the PA commander or the agency with release authority must approve the release. Some information is protected from release by privacy act concerns. When a particular query takes an unusually long time to answer, PA personnel contact the media representative and explain the delay.

MEDIA QUERY					
For use of this form see STP 46-46QZ14-SM-TG; the proponent agency is TRADOC.					
1. UNIT: Army Public Affairs Center		2a. Select One: <input checked="" type="checkbox"/> CONUS <input type="checkbox"/> OCONUS		2b. Theater (If OCONUS):	
2c. Command (If OCONUS):		2d. If OCONUS, Level of Command (Select One): <input type="checkbox"/> Army <input type="checkbox"/> Corps <input type="checkbox"/> Division <input type="checkbox"/> Brigade Other _____			
3. DATE (YYYYMMDD): 20211106	4. TIME: 1349	5. NAME (Last, First, MI) John Johnson		6. ORGANIZATION: Our Daily News	
7. PHONE NUMBER: 123-555-4678		8. E-Mail: johnjohnson@ourdailynews.net			
9. QUESTIONS/INQUIRY: 1. When is the Army Birthday? 2. How old is the Army turning? 3. What events will take place to celebrate?					
10. QUERY TAKEN BY: SFC Jane Smith		11. SUSPENSE DATE (YYYYMMDD): 20210611		12. SUSPENSE TIME: 1500	
13. RESPONSE: 1. The Army's birthday is June 14. 2. In 2021, the Army turns 246. 3. Each installation may have their own events, but Army-wide, there will be a number of events hosted virtually. These include a wreath-laying ceremony at Arlington National Cemetery, a birthday showcase, and a cake-cutting and reenlistment ceremony.					
14. COORDINATION/SOURCE OF INFORMATION: Army Public Affairs Center		15. RESPONSE DATE (YYYYMMDD): 20211106		16. RESPONSE TIME: 1433	
17. REMARKS (FOR INTERNAL USE): Be prepared to evaluate on events Have ANCPAC's information available if asking about the wreath-laying ceremony. Provide with other website resources if asked.					
18. APPROVED BY (Name, Rank, Title): Jack Flowers, COL., Director		19. SIGNATURE 		20. DATE SIGNED (YYYYMMDD) 20210611	

DA FORM 7675, OCT 2010 APD LC v1.00ES

Figure F-1. Sample DA Form 7675

TOOLS

F-5. PA personnel log each query and assign it a local, unit-specific control number. The chief PA escort officer reviews and assigns each query to an action officer or NCO for completion. When the action officer or NCO has completed the query, that officer notes and forwards the response to the chief PA escort officer for review.

F-6. After review by the chief PA escort officer, PA personnel request approval to release the query response. When the PA commander or the agency with release authority approve, PA personnel release a query response. The PA personnel use a control number to file the DA Form 7576 as well as the response.

F-7. Sometimes PA personnel cannot release a response to a question immediately. This occurs in the case of accidents and hospital conditions. In the case of accidents, PA personnel tell reporters that while military police investigate an accident, the PA office cannot release names until next of kin are notified. PA personnel cannot release conditions of patients in the hospital. Hospitals can release patients' conditions. They categorize conditions as treated and released, stable, serious, and critical.

F-8. PA personnel often host a briefing to answer a media query. These are often referred to as press conferences. During the briefing, the public and media are informed when and where the briefing will take place. The commander will provide a command statement and allow open-forum questions.

F-9. To set up for a media briefing, PA personnel need to check that they have the following information and products: basic information, personnel preparation, site preparation, and a sequence plan

F-10. Basic information that PA personnel need to gather includes the following:

- Briefing subject.
- Briefing date.
- Briefing time.
- Speaker.
- Briefing location.

F-11. PA personnel check the following items when they prepare personnel:

- Speaker provided talking points, five good question, and five bad questions.
- Speaker murder board conducted.
- Facilitator selected and briefed.
- Escorts selected and briefed.
- Interpreters selected and briefed.
- Rehearsal conducted.

F-12. PA personnel check following items to ensure the site is prepared:

- Briefing area secure and separated from the tactical operations center.
- Briefing area separated from generators or other noise.
- Briefing area large enough to accommodate anticipated audience with seating.
- Adequate electrical power and outlets for video equipment.
- Sufficient lighting and has been checked and tested.
- Suitable backdrop.
- The following items are on hand (as appropriate):
 - Computer.
 - Lectern.
 - Lighting system.
 - Maps of area of operations.
 - News releases or press packets.
 - Pointer.
 - Projector screen.
 - Projector.

- Public address system.
- Television.
- Video player.
- Visual aids.
- Video camera or digital voice recorder to record briefing.
- Event catered or refreshments provided (as per funding regulations).

F-13. PA personnel check the following for the sequence plan:

- Plan to secure media reception area.
- Plan to search media as they pass through security.
- Plan to escort media into briefing area.
- Ground rules established by facilitator.
- Subject matter experts introduced.
- Questions monitored and ground rules enforced.
- Plan to escort media to reception area when briefing complete.
- After action review completed and forwarded to higher headquarters PA office.

F-14. PA personnel use agreements to clarify limits with the media: the hold harmless agreement and agreement to reimburse. A hold harmless agreement is used in a legal contract, absolving one or both parties of liability for injuries or damages suffered while under contract. It is initiated by the unit and signed by the civilian media personnel. It is maintained by the unit once signed by the civilian media. See figure F-2 for a sample hold harmless agreement.

Hold Harmless Agreement

Release, Indemnification, and Hold Harmless

Agreement not to file suit

1. The United States of America (the “Government”), acting by and through the Department of Defense, believes it to be mutually beneficial to both the Government and news media organizations (“media organizations”) to place selected news media organization employees (“media employees”) with selected military units (“military units”) for the purpose of providing news media coverage before, during, and after military operations. The placement of media employees with military units is referred to in this Agreement as “embedding” or the “embedding process” and will require media employees to live, travel, eat, sleep, and conduct all professional and personal activities with the military unit to which the media employees are “embedded.”

Definitions.

- a. The term “Government” means the United States Government, including its departments, subdivisions, agencies, instrumentalities, officers, employees (including military and civilian personnel), servants, contractors, volunteers, and agents.
 - b. The term “media organization” means the “media employee’s” employer, a registered U.S. or foreign profit or not-for-profit organization, its successors, and assigns.
 - c. The term “media employee” means an employee or agent of a “media organization”, his or her guardians, executors, administrators, heirs, and assigns.
2. Media organizations and media employees understand and agree that the embedding process will expose media employees to the same risks and hazards as those to which the military members of military units are exposed, including the extreme and unpredictable risks of war, combat operations, and combat support operations, as well as common and uncommon hazards of military living. Media organizations and media employees fully understand and appreciate the following:
- a. The embedding process will expose media employees to all hazards of a military environment, including but not limited to the extreme and unpredictable hazards of war, combat operations, and combat support operations. The military environment is inherently dangerous and may result in death or personal injury of media employees or damage to personal property.
 - b. The embedding process may include strenuous and inherently dangerous activities, including transportation in, and close proximity to, military tactical vehicles, aircraft, watercraft, and other Government (and Government contracted) vehicles and may involve substantial risk of serious injury or death as the result of the media employee’s own actions or inaction, the actions or inactions of others including agents, contractors, officers, service members, and employees of the Government, the conditions of the Government facility and the natural environment, the known or unknown condition of any government- furnished equipment, and the inherent dangers of war, combat operations, and combat support operations.
 - c. The embedding process requires media employees to be in overall good physical health and condition. Persons who are not in overall good physical health and condition should not participate in the embedding process. Media employees should consult their physicians prior to embedding to be certain they are qualified to do so. Persons with a history of heart or lung

Figure F-2. Sample hold harmless agreement

disease or conditions, or coronary disease, or other chronic or pervasive diseases or conditions may not participate. Likewise, those women currently pregnant may not participate. Anyone suffering from any injuries, conditions, ailments or pre-existing conditions that could be affected by the embedding process may not participate.

3. As part of the embedding process, the Government will make available anthrax and smallpox vaccinations to media employees, provided it is done at no cost to the Government (full reimbursement of all Government costs) and provided that the media employees sign an additional agreement regarding the risks involved. These vaccinations are voluntary and are not a prerequisite for participating in the embedding process. Media organizations and media employees agree, for those media employees choosing to receive the anthrax and smallpox vaccinations, that this Release, Indemnification, and Hold Harmless Agreement and Agreement Not to Sue specifically includes all risks and hazards associated with the smallpox and anthrax vaccinations, including any negative reactions, adverse effects, including the media employee's illness, infirmity, or death.

4. The media employee agrees to:

a. Participate in the embedding process and to follow the direction and orders of the Government related to such participation. The media employee further agrees to follow Government regulations. The media employee acknowledges that failure to follow any direction, order, regulation, or ground rule may result in the termination of the media employee's participation in the embedding process.

b. Voluntarily, willingly, and knowingly ASSUME ANY AND ALL RISKS, known and unknown, in any way associated with the embedding process, war, combat operations, and combat support operations.

c. RELEASE, INDEMNIFY, AND HOLD HARMLESS the Government from and against any claims, demands, actions, liens, rights, subrogated or contribution interests, debts, liabilities, judgments, costs, and attorney's fees, arising out of, claimed on account of, or in any manner predicated upon the media employee's participation in the embedding process, including any loss or damage to property or the personal injury or death of any person which may occur as a result of the media employee's participation in the embedding process, even where that loss, damage, personal injury, or death is caused or contributed to, in any manner, by the Government.

5. The media organization agrees to permit its media employees to participate in the embedding process. As a condition of being permitted to participate in the embedding process, the media organization agrees to RELEASE, INDEMNIFY, AND HOLD HARMLESS the Government from and against any claims, demands, actions, liens, rights, subrogated or contribution interests, debts, liabilities, judgments, costs, and attorney's fees arising out of, claimed on account of, or in any manner predicated upon the media employee's participation in the embedding process, including any loss or damage to property or the personal injury or death of any person, even where that loss, damage, personal injury, or death is caused or contributed to, in any manner, by the Government.

6. The media organization and media employee hereby covenant and agree they will never institute, prosecute or in any way aid in the institution or prosecution of any demand, claim or suit against the Government for any destruction, loss, or damage to the media organization's property or the media employee's property, or the personal injury or death of media employees which may occur as a result of the media employee's participation in the embedding process.

7. The media organization and media employee grant express, voluntary, and knowing consent to the rendering of all emergency medical or dental treatment that may, in the professional judgment of a Government medical or dental officer, become necessary while participating in the embedding process. Transportation to a definitive Government or commercial care facility may be required as an adjunct to authorized emergency medical or dental care. Persons receiving Government medical

Figure F-2. Sample hold harmless agreement (*continued*)

or dental care who are not otherwise eligible to receive such care shall be obligated to reimburse the Government.

8. The media organization and the media employee understand and agree that the Government may terminate the embedding process at any time and for any reason, as the Government determines appropriate in its sole discretion.

9. This Release, Indemnification, Hold Harmless Agreement, and Agreement Not to Sue shall be interpreted according to federal law. It is to be construed as broadly and inclusively as is permitted by relevant federal law. If any portion of this document is held invalid, the balance shall continue in full force and effect.


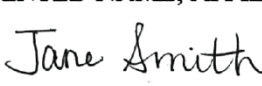
 _____ SIGNATURE	6/11/2021 _____ DATE
John Johnson, Our Local News 123-456-7890 _____ PRINTED NAME, AFFILIATE, & PHONE NUMBER	
 _____ WITNESS SIGNATURE	6/11/2021 _____ DATE
Jane Smith, SFC, Army Public Affairs Center _____ WITNESS PRINTED NAME, RANK & ORGANIZATION	

Figure F-2. Sample hold harmless agreement (*continued*)

F-15. Like the hold harmless agreement, the agreement to reimburse is provided by the PAO and is signed by the civilian media personnel. This denotes that some military operations they participate in will incur personal costs. Also, if military or government equipment is issued, the signer agrees to pay if items are damaged or lost. See figure F-3 on page F-8 for a sample agreement to reimburse.



AGREEMENT TO REIMBURSE		
<p>1. I understand that covering combat and other military operations may require that I be provided certain items not locally available or convenient due to combat conditions. These items may include but are not limited to: meals, lodging, and air travel into and within the theater of operations.</p> <p>2. Additionally, I may be issued certain items of military equipment such as protective mask, helmet, flak jacket, or load bearing equipment for my personal use while in the area of operations.</p> <p>3. I agree to reimburse the U.S. Government for any items it may provide me while I am in the area of operations, or for the cost of any equipment issued to me which may become lost or damaged.</p> <p>4. I understand that my agreement to this statement is a condition of being credentialed to cover U.S. military operations and receiving assistance for that coverage.</p>		
Signature		Date
		6/11/2021
Printed name		Agency
John Johnson		Our Local News
Witness Signature		Date
		6/11/2021
Witness Printed Name	Rank	Organization
Jane Smith	SFC	Army Public Affairs Center

Figure F-3. Sample agreement to reimburse

F-16. PA personnel consider Privacy Act implications before releasing information. The purpose is to ensure the government's need to maintain information about individuals with the rights of the individuals is balanced. Service members have the right to certain elements of privacy and need to be protected from unwarranted invasions of their privacy. Table F-1 provides PA personnel a checklist that addresses personal information about Soldiers and any living persons that can or cannot be released under the provisions of the Privacy Act. PA personnel use this checklist to determine whether to information meets reliable standards.

Table F-1. Privacy Act considerations

Information	Releasable or not releasable	Reason
Age (date of birth)	Releasable	This information is public record.
Home of record Present address	Not releasable	The street address cannot be released. In each case, personnel consider the desires of the actual person or next of kin.
	Releasable	There is no general rule for disclosure of this information. Widely different circumstances surround each incident, and judgement is made on a case-by-case basis. In most cases, the home of record can be released. In most cases, the person's present geographical location may be provided (city, state).
Marital status Dependents	Releasable	This information is public record including names, ages, and sex of dependents.
Awards Decorations Citations	Releasable	This information is part of public record
Education Schooling Specialty	Releasable	Major area of study, school, year of graduation, degree and specialty designator are releasable as they are public record.
Race	In most cases, not releasable	This information is considered private unless an individual's race is relevant in providing essential facts to the press (such as in a racially oriented protest or altercation).
Character of discharge	Not releasable	Administrative information is private unless the individual provides his or her written consent.
	Releasable	Punitive information is public record and includes discharges resulting from courts-martial.
Duty status	Releasable	This information is part of public record.
Personnel boards	Not releasable	Results of administrative discharge boards and aviator flight boards.
	Releasable	Results of promotion boards and augmentation boards is public record.
Photographs in the custody of the Department of Defense	Not releasable	Photos of service member remains (flag draped coffins).
	Releasable	Photos that do not infringe on personal privacy

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Appendix G

Message Mapping and Interacting with the Media

THE MESSAGE MAP

G-1. Message mapping is a technique to help commanders and their designated spokespeople connect with audiences on key topics using approved, relevant, command-focused messages. It provides a framework to visualize how facts, stories, and context converge to support specific concepts the commander desires to convey to select audiences in support of communication objectives.

G-2. A message map is a template tool used to visualize and process a simple, concise direction for media interviews. With an average video or sound clip diminished to 9–15 seconds, spokespeople must master the art of effectively communicating using succinct, impactful headlines. This one-page tool can assist in the recall and delivery of concise, impactful headlines. Creating a story arc or “dashboard” can help PA personnel sketch an easy way to mentally recall and effectively deliver an intended response.

G-3. Message mapping works best when spokespersons develop and employ it as part of a deliberate, overarching communication strategy. PA personnel can also use it easily for unscheduled engagements if they have enough preparation time. It incorporates critical and creative thinking to describe complex issues and develop shared understanding.

KEY COMPONENTS OF A MESSAGE MAP

G-4. Message maps are composed of interdependent components stitched together to create the command narrative. These key components are:

- Top line messages.
- Concepts.
- Context.
- Facts and stories.
- Vulnerabilities.

G-5. Top line messages are the key, command-approved messages to weave into the narrative during media engagements. Think of these in terms of headlines that bear repeating.

G-6. Themes are ideas that recur or pervade.

G-7. Concepts are abstract ideas or general notions.

G-8. Context is the interrelated conditions surrounding an idea

G-9. Facts and stories are used to support the position and point of view of the spokesperson, the commander, and the organization. Select stories that are personal, human, and dramatic.

G-10. Vulnerabilities are possible exposures to being attacked or harmed

CREATING A MESSAGE MAP

G-11. Creating a message map consists of five general steps. First, develop a central theme for clear direction. This identifies the type of command message that will be given. In figure G-1 on page G-3, the theme addresses who (the U.S. Army), what (is aligned), how (by bringing capability and lethality), and when (by 2028). Some themes address where and why. Each theme is command centric.

G-12. Second, select no more than five simple key concepts. These are one or two words. In figure G-1, the concepts are mission, vision, people, non-deployables, and recruiting. For each concept category, develop

headline messages with solid examples of personal stories or other fact-based evidence to make your message stick.

G-13. Third, nest strategic top-line messages within the plan for optimal results.

G-14. Fourth, open and close with a central theme and top-concept messages.

G-15. Lastly, always define vulnerabilities, and determine how to mitigate them using the dashboard and interview techniques. See figure G-1 for examples of these processes.

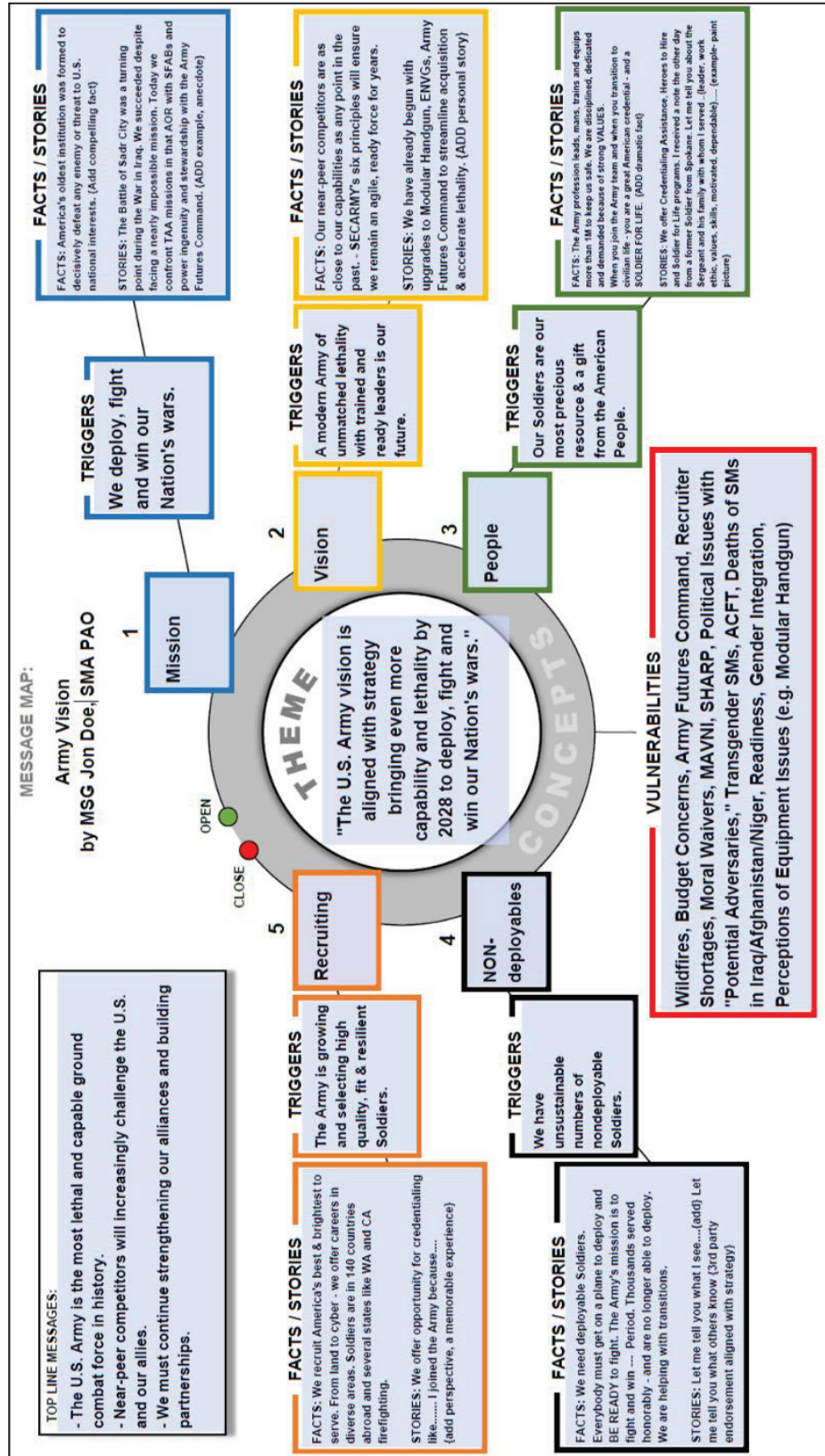


Figure G-1. Sample of message mapping template

PREPARING FOR A MEDIA ENGAGEMENT

G-16. When preparing for a media engagement, PA professionals follow five general rules:

- Prepare mentally.
- Be message driven, not question driven.
- Practice good behavior.
- Expect the unexpected.
- Never let the setting define you; you define the setting.

PREPARE MENTALLY

G-17. PA professionals prepare mentally for engaging with the media. They start by sorting complex facts and emotions to help relax the mind and body. They prepare a message map for a clear mental picture of the communication goal. PA professionals use the message map for mitigating vulnerabilities by having a variety of command messages and statements prepared and on-hand.

BE MESSAGE DRIVEN, NOT QUESTION DRIVEN

G-18. To prepare for a media engagement, PA personnel focus on being driven by the message they are giving. PA personnel have a mental direction and master interview techniques. Interview techniques consist of pausing, repeating, asserting, consistency, headlining, flagging, blocking, bridging, opening, and closing, discussed further in this appendix. PA personnel make verbal and nonverbal messages stick with personal stories, examples, visuals, and anecdotes. For example, if PA staff is asked how successful the mission was, they can respond with their personal positive experiences, pointing out why they viewed it as a success. They avoid Army jargon while clearly understanding the facts, audience, and message. PA personnel use simple words localizing and humanizing strategic messages. They take great care in doing no harm with the engagement.

G-19. Skilled PA personnel master bridging to fit their vernacular. They use the following equation: Response = Answer {bridge} + Message + Story. By using the equation, they can help pivot to the direction they want to take the interview. Generally, PA personnel answer to confirm the obvious {...we have been challenged}; bridge {... what I confidently know is...} to a message {American Soldiers are strong and resilient meeting high standards} with a story {let me tell you about Specialist Jackson}.

G-20. Some media representatives deviate from the approved topic. If their questions are on a hot topic and not associated with the actual agreed-upon topic, the spokesperson acknowledges to confirm the obvious, bridges to a topical message, and moves on. The spokespersons work to be brief and move on. They stay positive and avoid negative words and characterizations. If the media asks five questions on sexual misconduct and the interview goal is about recruiting talent, then the spokesperson has failed to bridge to a topical message and move the conversation in the right direction.

PRACTICE GOOD BEHAVIOR

G-21. PA professionals practice good behavior when engaging with the media. For a spokesperson, communication is behavior—verbal and non-verbal. PA professionals find harmony by sorting complex details in advance. Through their presence and behavior, they can manage others' perceptions of them. PA professionals verbally express their authentic, accountable, and credible messages. When PA personnel communicate nonverbally, they remain aware of others' perceptions. They use their smile appropriately to express happiness. They express anger, fear, contempt, sadness, disgust, and surprise carefully. If while creating a message map PA professionals discover strong emotions such as extreme anger associated with a hot topic, they need to pause. Before they engage with the media, they need to sort through their emotions to prevent an unintended outburst or expression. Skilled spokespersons avoid putting pressure on their body or lips. Such pressure suggests anxiety, tension, and nervousness. They stretch their face and body before an interview as well as practice several times before engagement.

EXPECT THE UNEXPECTED

G-22. To prepare for a media engagement, PA personnel expect the unexpected. They anticipate what reporters will likely ask. PA personnel can mitigate vulnerabilities in advance by knowing the Army's position on current events. They also can minimize hot topics by asserting brief appropriate verbal acknowledgement followed by bridging statements. Skilled spokespersons avoid repeating negative characterizations. When receiving odd or polarizing questions, they use upfront pausing. This means to pause without words for a couple of seconds but to continue natural body flow. Practiced PA personnel take advantage of time and space given in an engagement, even when the media confronts them with tough questions.

NEVER LET THE SETTING DEFINE YOU; YOU DEFINE THE SETTING

G-23. PA professionals never let the setting define them when engaging with the media. Instead, these professional define the setting. They confidently know themselves, their audience, and other variables like the event flow, timing, and room or venue. Skilled spokespersons keep their hands visible and use them to complement words. If seated at a table, they keep their hands on it in a comfortable position. They avoid squeezing their hands and pulling at their cuticles. They also keep their feet on the floor and their eyes on the reporter asking the questions. They stay hydrated with water and avoid banana and milk products before engagements.

PLOTTING A COURSE AND USING DIRECTIONAL PHRASES

G-24. When preparing to interact with the media, PA personnel use their message map to plot a course using directional phrases. Before interacting with the media, skilled spokespersons practice their delivery style. The true PA professional maintains a natural style and tone when confronted with hazards during an interview or engagement. PA personnel know and practice directional phrases that lead them to main points. Plotting these directional phrases helps PA personnel reach their destination through intended messages, facts, and feelings. Plotting the course also involves PA personnel visualizing where they need to go. They see their message map illustrating the central theme, concepts, and facts supporting their goal. They use phrases that fit their vernacular. They practice bridging and keeping detours to a minimum. While conducting the engagement, PA personnel handle the unexpected in a savvy pace, pitch, and tone with prepared directional phrases. Using flagging, blocking, and bridging phrases helps PA personnel smoothly get attention, avoid a topic, and transition to a message. See table G-1 for possible directional phrases to help lead the conversation with a message.

Table G-1. Sample directional phrases

<i>Phrase type</i>	<i>Sample</i>
Flagging phrases (getting their attention):	"Don't lose sight of the fact..."
	"The critical issue to remember is..."
	"The key point to note is..."
	"It all boils down to this..."
Blocking phrases (not going there):	"To go any further would be speculation..."
	"I'm not prepared to talk about that issue today..."
	"My personal opinion is not important, what is key here is..."
Bridging phrases (after answer, before message-transition phrase):	"...Yes/no/I don't know..."
	"Let me put that into perspective..."
	"...What I do know is..."
	"...what's more interesting is that..."

BRIDGING STATEMENTS FOR MEDIA INTERVIEWS

G-25. An important media technique is bridging. Bridging is a technique PA personnel can use to take charge of and control an interview with power. A spokesperson uses a media interview to focus a reporter on a few

key messages that are true, accurate, clear, concise, brief, and memorable. If done well, bridging significantly increases the probability that a spokesperson's key messages will appear in the final news story. By using bridging techniques, a spokesperson can re-focus or re-direct the interview to what is most important, relevant, and critical. See table G-2 for sample bridging statements.

Table G-2. Sample bridging statements

"And as I said before..."	"And if we take a closer look, we would see..."
"And that reminds me..."	"And the one thing that is important to remember is..."
"And what this all means is..."	"And what's most important to know is..."
"And what's most important to remember is..."	"Another thing to remember is..."
"Before we continue, let me emphasize that..."	"Here's the real issue..."
"Before we leave subject, let me add that..."	"However, what is more important to look at is..."
"However, the real issue here is..."	"If we look at the big picture..."
"I think it would be more correct to say..."	"In this context, it is essential that I note..."
"If we take a broader perspective..."	"Let me emphasize again..."
"It's true that...but it is also true that..."	"Let me point out again that..."
"Let me just add to this that..."	"The heart of the matter is..."
"Let me put all this in perspective by saying..."	"This is an important point because..."
"The key here is..."	"What I've said comes down to this..."
"What all this information tells me is..."	"What this all boils down to..."
"What matters most in this situation is..."	"With this in mind, if we look at the bigger picture..."
"While... is important, it is also important to remember..."	"Before we continue, let me take a step back and repeat that..."
"With this in mind, if we take a look back..."	

Appendix H

Public Affairs Professional Development

LEADER DEVELOPMENT

H-1. The Army continuously and progressively develops PA leaders over the span of their entire career. Leader development begins with initial entry education and training. This development continues with job experience and attendance at various schools supplying intermediate- and senior-level educational opportunities. While institutional development is important, a self-development program is necessary to ensure the leader has a well-rounded background that supports the rigors and expectations of leadership. The Army carefully assigns leaders to operational positions key to development as PA leaders. Time in the school environment is limited, so careful consideration of operational assignments and self-development is necessary for effective leader development and career progression.

TRAINING DOMAINS

H-2. Three mutually supporting training domains compose the model the Army uses to develop competent, confident, and professional PA leaders as well as to prepare units for missions with complex communication requirements. Army leader development occurs in the institutional, operational, and self-development training domains. The three domains support PA leader development through education, training, and experience. (See AR 350-1 for a discussion of the training domains.)

INSTITUTIONAL TRAINING DOMAIN

H-3. The PA institutional training domain includes Army schools and centers that provide initial training and subsequent functional and professional military education for Soldiers, military leaders, and DA Civilians. Army institutions provide military training, subsequent military and civilian education, and mobile training teams that can assist in enabling unit readiness. PA institutional training endeavors to train Soldiers, leaders, and DA Civilians to perform critical PA tasks to prescribed standards throughout their careers and to support Army units. The institutional training domain for PA also provides training support products, information, and materials needed by individuals for self-development and by unit leaders for operational training, mission rehearsal, or assessment.

DEFENSE INFORMATION SCHOOL

H-4. PA Soldiers, leaders, and civilians receive initial and developmental training at the DINFOS. This school provides PA-specific, joint education and training in mass communication and VI career fields to meet entry-level skills and long-term career development requirements. DINFOS provides training that qualifies individuals for communication-related MOSs and functional specialties, develops individuals for complex duties in progressively higher positions of responsibility, and targets instruction through mobile training teams in areas requiring specialized functional expertise.

H-5. DINFOS provides two primary training levels of education to develop PA leaders, Soldiers, and DA Civilians: entry-level and continuum. DINFOS offers on-site and via distance learning courses for both levels. PA professionals can find detailed information regarding DINFOS, available PA courses, and training resources at the DINFOS website.

H-6. Entry-level training provides basic PA training to officers and enlisted Soldiers through the following courses:

- Military Communication Foundations Course.
- Public Affairs and Communication Strategy Qualification Course.

H-7. Continuum education provides advanced PA training that focuses on doctrine, principles, techniques, and application of military PA. These courses expose students to advanced PA training. Commanders are highly encouraged to send their PA personnel to these courses, where applicable, during appropriate career stages:

- Content Management Course.
- Joint Contingency Public Affairs Course.
- Joint Intermediate Public Affairs Course.
- Intermediate Photojournalism Course.
- Intermediate Motion Media Course.
- Intermediate Public Affairs Specialist Course.

CYBER CENTER OF EXCELLENCE NCO ACADEMY

H-8. The Cyber Center of Excellence NCO Academy educates, trains, and develops NCOs and leaders. It effectively delivers high quality, innovative, relevant, and diverse professional Army mass communication training in support of the Army's current and future operations. The Cyber Center of Excellence NCO Academy provides two levels of training for Mass Communication NCOs.

- Advanced Leader Course provides leader and specialty training for NCOs in MOS 46S at Skill Level Three (SL3). Training provides students with the skills, knowledge, and technical expertise to provide leadership in coordinating and supervising the employment, operation, and management of a PA section. This course is the required certification course for PA NCOs in MOS 46S30 for the rank of staff sergeant.
- Senior Leader Course provides comprehensive skill level four Army leadership training. It also provides training in the supervision, coordination, and operation of PA for senior PA NCOs in Career Management Field 46. This course is the required certification course for PA NCOs in MOS 46Z40 for the rank of sergeant first class.

OPERATIONAL TRAINING DOMAIN

H-9. The operational training domain involves PA training activities that organizations undertake while at home station, at maneuver combat training centers, during joint exercises, at mobilization centers, and while operationally deployed. This training applies to operating forces and the generating force.

H-10. Leaders schedule and are responsible for PA training activities for organizations, units, and individuals in the operational training domain. Proficiency of their unit, teams, leaders, and subordinates is the responsibility of a leader. Individual and collective PA training activities conducted at home station, regional training centers, and mobilization centers as well as during exercises compose an operational training experience. Major training events, combat training center exercises, and operational deployments deliver comprehensive progressive and sequential PA training for unit and leader development and readiness.

H-11. Operational assignments develop PA units and leaders. The assignment drives specific mission-focused opportunities and conditions for battle-focused training. Operational assignments use and build on fundamental skills, knowledge, and behaviors developed during institutional training. Operational assignments refine individuals and units by developing their knowledge into capabilities that support the mission.

H-12. Mission success requires a well-trained civilian PA workforce to support operating forces and the generating force. Assignments and training that develop DA Civilians provide continuity and specific PA skills essential to Army organizations and programs. PA civilians work at all levels and require opportunities to enhance their knowledge and skills through developmental assignments, civilian education, training, and self-development.

H-13. Commanders expect trained units, leaders, and DA civilians to perform in an operational area and should ensure allotted time for leaders and individuals to prepare for and attend institutional training. A necessary balance of education, institutional training, and experience develops leaders and units to train and win in a complex world.

SELF-DEVELOPMENT TRAINING DOMAIN

H-14. The self-development training domain contains planned, goal-oriented learning that reinforces and expands the depth and breadth of an individual's knowledge base, self-awareness, and situational awareness; complements institutional and operational learning; enhances professional competence; and meets personal objectives. The self-development training domain facilitates the development of PA professionals. In the self-development domain, PA personnel fill gaps their skills, knowledge, and behavior from institutional training and operational assignments.

SELF-DEVELOPMENT TYPES

H-15. AR 350-1 describes three types of self-development: structured self-development, guided self-development, and personal self-development. Structured self-development is learning that continues throughout a career. It closely links to and synchronizes with classroom and on-the-job learning. Guided self-development is recommended but optional learning. It helps prepare personnel for changing technical, functional, and leadership responsibilities throughout their careers. Personal self-development is self-initiated learning in which the individual defines the objective, pace and process. Examples include pursuing a college education, advanced degree programs, and professional certifications.

H-16. The three types of self-development help in identifying, categorizing, and planning for self-development. The three types of self-development assist leaders, subordinates, and self-assessors to identify opportunities for development that may fall under structured, guided, and personal self-development. Combining the three types of self-development better ensures personnel obtain the most comprehensive plan.

H-17. The self-development training domain recognizes that training in Army schools and in operational units often does not meet every individual's need for content or time. Self-development enables individuals to pursue immediate and long-term personal and professional development goals. Leaders and other PA professionals help subordinates identify areas to implement self-development to improve performance. PA personnel have a personal responsibility to develop, grow, and commit to professional excellence.

H-18. Commanders and PA leaders coach, mentor, and counsel subordinates to maximize their self-development as an investment in their future. Successful self-development requires regular self-assessment and performance feedback. An individual development plan (known as an IDP) is important for enlisted, officer, and civilian assessment and feedback. The Army Career Tracker (known as ACT) is a leadership development tool that integrates training and education into one personalized, easy-to-use website. Users can search multiple Army education and training resources, monitor their career development, and receive personalized advice from their supervisor and Army leadership. (See the Army Career Tracker website for developing an individual development plan.)

SELF-DEVELOPMENT RESOURCES

H-19. Resources for self-development can include Army doctrine, joint doctrine, lessons-learned, best practices, professional publications, and books. Awareness of the events in operational and information environments ensures PA leaders focus on timely and relevant information. Army schools provide training and education products that can be used for self-development. The DINFOS provides publicly accessed training resource material. (See the DINFOS website for training products.)

H-20. The Army supports continuing education and self-development. The Army Continuing Education System (known as ACES) mission vigorously promotes lifelong learning opportunities to sharpen the competitive edge of the Army. It provides and manages quality self-development programs and services. Education and training are key elements that mutually support and enhance the combat readiness of the Army. Army Continuing Education System programs and services support leader development and work to expand Soldier skills, knowledge, and behaviors. (See AR 621-5 for more on Army Continuing Education System programs and services.)

BROADENING OPPORTUNITIES

H-21. The Army provides additional opportunities for PA personnel to broaden their education. Some personnel attend civilian academic institutions. Other personnel participate in the Army's Training with

Industry program. The Army authorizes training personnel at civilian institutions full time. Officers, NCOs, and warrant officers can attend full-time education programs (fully and partially funded) in civilian schools, commerce or civilian industries, and Service schools that offer accredited degrees. (See AR 621-1 for details on education.)

H-22. Human Resource Command encourages units to identify officer positions that require an advanced degree for optimum performance of duties. The Army Educational Requirement System requires units to show detailed positions that require thorough and explicit knowledge in an educational or technical field. Army Educational Requirement System positions may be filled by officers or enlisted already possessing graduate degrees (“direct fills”), by those attending advanced civil schooling (ACS), or by those who completed a Training with Industry (TWI) program. Personnel who attend ACS or TWI will incur an active duty service obligation. (See AR 621-1 for more on the Army Educational Requirement System.)

TRAINING WITH INDUSTRY

H-23. The TWI program is a yearlong work-experience program. For PA personnel, it provides extensive in-depth exposure to public relations, marketing, and managerial techniques and industry standards from Fortune 500 companies. It provides military personnel with training and development of skills in the private sector. Often personnel learn procedures and practices not available through existing military programs, ACS, or other established training and professional military education programs.

H-24. TWI is a voluntary program, with an emphasis on placing Soldiers with strong promotion potential and varied PA experiences and assignments into the program. A panel of senior military members select applicants carefully to ensure the most qualified PA Soldiers represent the Army and PA. After completing the TWI program, Soldiers are assigned to an Army Education Requirement System validated position.

ARMY PUBLIC AFFAIRS ADVANCED CIVIL SCHOOLING

H-25. Army PA ACS is a threefold broadening opportunity program. First, it provides outstanding officers and senior NCOs who possess strong promotion potential an opportunity to better understand and appreciate the importance of the strategic relationships among the Army, academic leaders, and industry leaders. Second, it exposes academic and industry leaders to the quality of Army officers and senior NCOs serving in today’s Army. It assists those leaders in learning about the Army as an institution through contact with Army fellows enrolled in the Georgetown University’s Public Relations and Corporate Communications Program. Lastly, PA ACS continues to develop a pool of officers and senior NCOs to serve in challenging and rewarding PA assignments in the PA career field. Selected officers and NCOs pursue an advanced degree at Georgetown University on a full-time basis. Fellows attend school for 18 months. They complete the required degree program and associated curriculum earning a master’s degree in public relations and corporate communications.

Source Notes

This division lists sources by page number. Where material appears in a paragraph, it lists both the page number followed by the paragraph number.

1-3 1-11. Title 10, Chapter 703, Section 7014, USC.

7-4 **Segmentation.** Vignette adapted from: CALL Newsletter, no. 09-11, December 2008.

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Glossary

The glossary lists acronyms and terms with the Army or joint definitions. Terms for which FM 3-61 is the proponent are marked with an asterisk (*).

SECTION I – ACRONYMS AND ABBREVIATIONS

ACS	advanced civilian schooling
ACTEDS	Army Civilian Training, Education and Development System
ADP	Army doctrine publication
AR	Army regulation
ASCC	Army Service component command
ATSD (PA)	Assistant to the Secretary of Defense for Public Affairs
BOD	broadcast operations detachment
CCS	commander's communication synchronization
COA	course of action
COMCAM	combat camera
COMPLAN	communication plan
COP	common operational picture
CP	career program
CPA	Chief of Public Affairs
DA	Department of the Army
DINFOS	Defense Information School
DOD	Department of Defense
DODD	Department of Defense directive
DODI	Department of Defense instruction
DPO	defense press office
DSCA	defense support of civil authorities
DVIAN	Defense Visual Information Activity Number
DVIDS	Defense Visual Information Distribution System
FEMA	Federal Emergency Management Agency
FM	field manual
FOIA	Freedom of Information Act
IO	information operations
IRC	information-related capability
JDN	joint doctrine note
JP	joint publication
MDMP	military decision-making process
MILDEC	military deception

MISO	military information support operations
MOC	media operations center
MOS	military occupation specialty
MPAD	mobile public affairs detachment
NCO	noncommissioned officer
NGO	nongovernmental organization
NIPRNET	Non-classified Internet Protocol Router Network
OCPA	Office of the Chief of Public Affairs
OE	operational environment
OPSEC	operations security
PA	public affairs
PAD	public affairs detachment
PAG	public affairs guidance
PAO	public affairs officer
PPAG	proposed public affairs guidance
RC	Reserve Component
RTQ	response-to-query
SIPRNET	SECRET Internet Protocol Router Network
SME	subject matter expert
SOF	special operations forces
SOP	standard operating procedure
SRC	standard requirements code
SSRA	spectrum supportability risk assessment
TWI	training with industry
U.S.	United States
USC	United States Code
UPAR	unit public affairs representative
VI	visual information

SECTION II – TERMS

audience

In public affairs, a broadly-defined group that contains stakeholders and/or publics relevant to military operations. (JP 3-61)

combat camera

A specially-trained expeditionary forces from Service-designated units capable of providing high-quality directed visual information during military operations. (JP 3-61)

command information

Communication by a military organization directed to the internal audience that creates an awareness of the organization's goals, informs them of significant developments affecting them and the organization, increases their effectiveness as ambassadors of the organization, and keeps them informed about what is going on in the organization. (JP 3-61)

commander's communication synchronization

A process to coordinate and synchronize narratives, themes, messages, images, operations, and actions to ensure their integrity and consistency to the lowest tactical level across all relevant communication activities. (JP 3-61)

commander's visualization

The mental process of developing situational understanding, determining a desired end state, and envisioning an operational approach by which the force will achieve that end state. (ADP 6-0)

communication

The imparting or interchange of information, thoughts, and opinions by sending themes, messages, and facts through engagements and traditional and digital media platforms to designated audiences. (AR 360-1)

community engagement

Public affairs activities that support the relationship between military and civilian communities. (JP 3-61)

defense support of civil authorities

(DOD) Support provided by U.S. Federal military forces, Department of Defense civilians, Department of Defense contract personnel, Department of Defense component assets, and National Guard forces (When the Secretary of Defense, in coordination with the governors of the affected states, elects and requests to use those forces in Title 32, United States Code, status) in response to requests for assistance from civil authorities for domestic emergencies, law enforcement support, and other domestic activities, or from qualifying entities for special events. (DODD 3025.18)

digital media

Text, audio, and visual information content that can be transmitted over the internet or computer networks. Army PA content that is released on a website, blog, or social media platform will fall into this category. (AR 360-1)

***disinformation**

The deliberate use of incorrect or false information with the intention to deceive or mislead.

external audience

In public affairs, all people who are not United States military members, Department of Defense civilian employees, and their immediate families. (JP 3-61)

information environment

The aggregate of individuals, organizations, and systems that collect, process, disseminate, or act on information. (JP 3-13)

information-related capability

A tool, technique, or activity employed within a dimension of the information environment that can be used to create effects and operationally desirable conditions. (JP 3-13)

internal audience

In public affairs, United States military members, Department of Defense civilian employees, and their immediate families. (JP 3-61)

joint public affairs support element

A deployable unit assigned to assist a joint force commander in developing and training public affairs forces in joint, interagency, and multinational environments. (JP 3-61)

key tasks

Those significant activities the force must perform as a whole to achieve the desired end state. (ADP 6-0)

law of war

That part of international law that regulates the conduct of armed hostilities. (JP 3-84)

local area of public affairs responsibility

That area in which installation PAOs and media representatives maintain routine contact concerning installation activities. (AR 360-1)

media operations center

A facility established by the commander to serve as the focal point for the interface between the military and the media during the conduct of military operations. (JP 3-61)

media pool

A limited number of news media who represent a larger number of news media organizations for purposes of news gathering and sharing of material during a specified activity. (JP 3-61)

***media representatives**

Individual representing civilian radio or television station, newspaper, magazine, periodical, independent blog, or news agency, to gather and report on a newsworthy event.

message

1. Any thought or idea expressed briefly in a plain or secret language and prepared in a form suitable for transmission by any means of communication. (JP 6-0)
2. A narrowly focused communication directed at a specific audience to support a specific theme. (JP 3-61)

military decision-making process

An iterative planning methodology to understand the situation and mission, develop a course of action, and produce an operation plan or order. (ADP 5-0)

mission-essential task

A collective task on which an organization trains to be proficient in its designed capabilities or assigned mission. (FM 7-0)

***misinformation**

A subset of information that includes all incorrect information

mission command

The Army's approach to command and control that empowers subordinate decision making and decentralized execution appropriate to the situation. (ADP 6-0)

monitoring

Continuous observation of conditions relevant to the current operation. (ADP 5-0)

***official information**

Information that is owned by, produced for or by, or is subject to the control of the United States government.

operational environment

A composite of the conditions, circumstances, and influences that affect the employment of capabilities and bear on the decisions of the commander. (JP 3-0)

public

In public affairs, a segment of the population with common attributes to which a military force can tailor its communication. (JP 3-61)

public affairs

Communication activities with external and internal audiences. (JP 3-61)

public affairs assessment

An analysis of the news media and public environments to evaluate the degree of understanding about strategic and operational objectives and military activities and to identify levels of public support. (JP 3-61)

public affairs guidance

Constraints and restraints established by proper authority regarding public communication activities. (JP 3-61)

public information

Within public affairs, information of a military nature, the dissemination of which is consistent with security and approved for public release. (JP 3-61)

release of information

Dissemination of information to the public, which may be initiated by the Army or be in response to an external request. Includes written news releases, still photographs, motion picture films, question and answer interviews, speeches, audio or video tape recordings, articles for publication in printed media or for broadcast by radio or television, and oral responses to queries. (AR 360-1)

rules of engagement

Directives issued by competent military authority that delineate the circumstances and limitations under which United States forces will initiate and/or continue combat engagement with other forces encountered. (JP 3-84)

running estimate

The continuous assessment of the current situation used to determine if the ongoing operation is proceeding according to the commander's intent and if planned future operations are supportable. (ADP 5-0)

security review

The process of reviewing information and products prior to public release to ensure the material will not jeopardize ongoing or future operations. (JP 3-61)

social media

Websites and applications that allow communication and dissemination of information on the internet. (AR 360-1)

stakeholder

In public affairs, an individual or group that is directly impacted by military operations, actions, and/or outcomes, and whose interests positively or negatively motivate them toward action. (JP 3-61)

synchronization

The arrangement of military actions in time, space, and purpose to produce maximum relative combat power at a decisive place and time. (JP 2-0)

targeting

The process of selecting and prioritizing targets and matching the appropriate response to them, considering operational requirements and capabilities. (JP 3-0)

unit public affairs representative

Non-public affairs Soldiers identified to increase public affairs capability across a command. (AR 360-1)

visual information

Various visual media with or without sound that generally includes still and motion photography, audio video recording, graphic arts, and visual presentations. (JP 3-61)

vulnerabilities

Characteristics, motives, or conditions of the target audience that can be used to influence behavior. (FM 3-53)

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PSYCHOLOGICAL OPERATIONS

FM 33-1



PSYCHOLOGICAL OPERATIONS

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FOREWORD

Psychological factors are an integral part of all battlefields. Each unit movement and every conquest of terrain psychologically affect the battlefield participants and an audience of friendly, neutral, or hostile groups. The psychological effect of combat actions can be seen in the heightened morale of a successful unit or in the discouragement and fear of a defeated unit. Properly manipulated attitudes can modify the behavior and the combat effectiveness of the soldier and the unit.

This manual provides information and guidance for the conduct of psychological operations (PSYOP) in general, limited, and cold war. The doctrine, techniques, and procedures found herein are applicable to conventional warfare, unconventional warfare (UW), and foreign internal defense (FID) operations. This manual should be used in conjunction with other official manuals and publications that provide staff organization procedures and guidance for doctrine, field operations, and maintenance of equipment.

This manual is divided into two parts:

Part One is an easy-to-read, ready reference for the combat commander and tells what psychological operations can do and how they can be used to achieve a quicker victory, conserve valuable resources, and save the lives of US and friendly personnel.

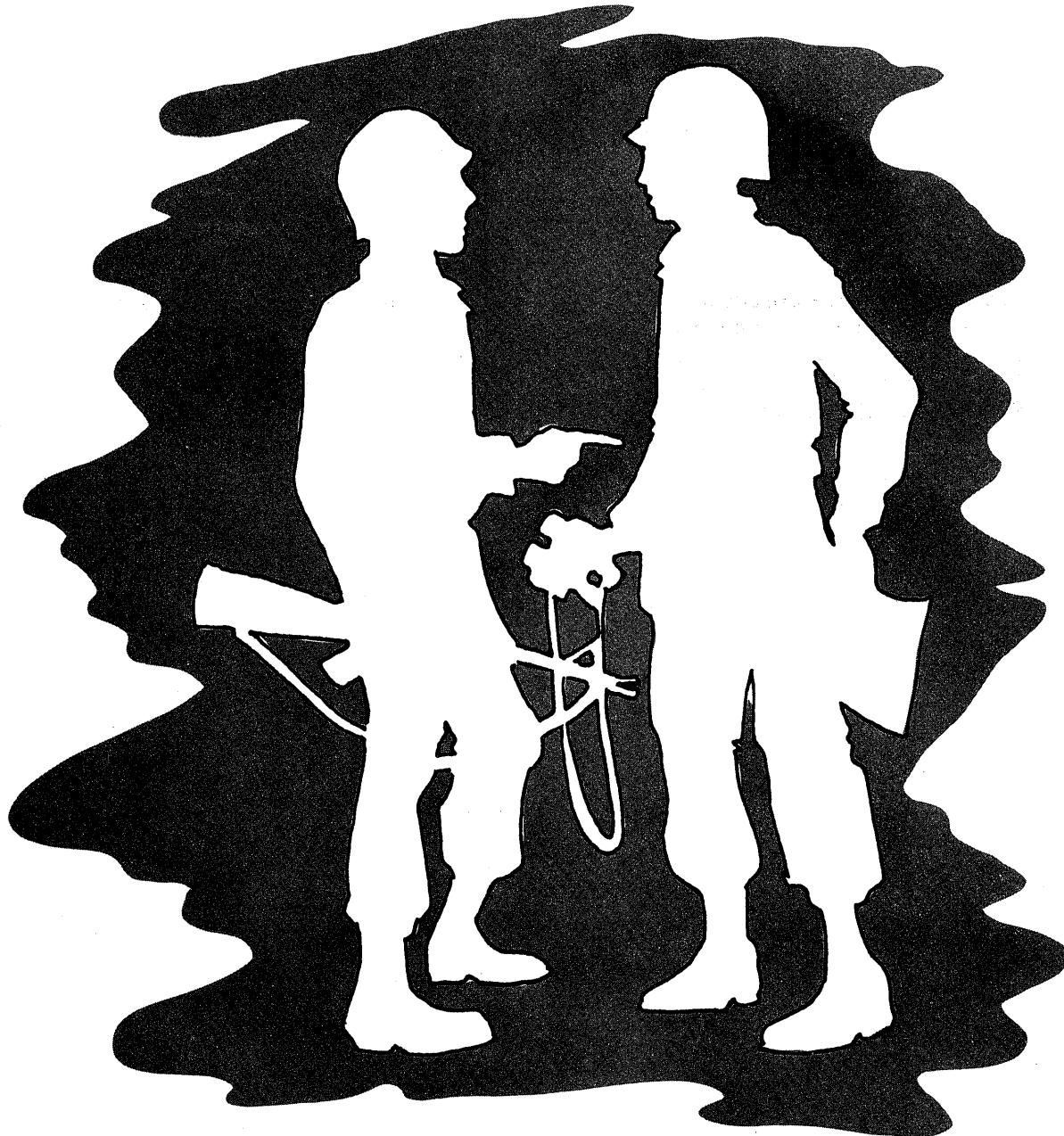
Part Two is for the PSYOP commander, unit, and staff personnel and others with an interest in or need for the details of psychological operations.

Definitions of PSYOP basic terms are in appendix H.

Users of this manual are encouraged to submit comments and to recommend changes for its improvement. Comments/recommendations should be keyed to the specific page and line of text and be fully explained. Forward your comments to the **Commandant, US Army Institute for Military Assistance, ATTN: ATSU-TD-TS, Fort Bragg, NC 28307.**

The use of the pronouns "he," "his," "himself," etc., in this manual includes both masculine and feminine genders. Any exception to this will be so noted.

PART ONE



PSYCHOLOGICAL OPERATIONS AND THE COMBAT COMMANDER

Chapter One

1

INTRODUCTION

Psychological operations used for the purpose of creating a favorable image, gaining adherents, and undermining opponents have become a major weapon of 20th century warfare.



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BACKGROUND

MAJOR PSYOP EFFORTS SINCE WORLD WAR II

Since World War II, the major PSYOP effort of the United States has been by the Department of State (STATE); subsequently, the United States Information Agency (USIA) which included the Voice of America (VOA); and now the International Communication Agency (ICA) which replaced USIA.

During the Korean conflict, organization and techniques for tactical PSYOP improved. In the Vietnam action, much PSYOP activity was initiated, emphasized, and refined.

The Joint United States Public Affairs Office (JUSPAO) was created by the National Security Council (NSC) in 1965 to centralize PSYOP policy and insure control of PSYOP activities in Vietnam. Formed at the counselor level in the Embassy, this joint office included representatives from civilian and military US Government agencies. In addition to carrying out the normal mission of the United States Information Service (USIS), the JUSPAO provided PSYOP policy and direction to the US and Free World Assistance Forces in the Republic of Vietnam (RVN).

To insure unity of effort, PSYOP plans of the United States and Vietnam were coordinated at the national level (US Embassy and Government of Vietnam). Coordinating committees were also formed at the region and province level.

As the result of the adoption of a central manager concept (centralized guidance and decentralized execution), all policy stemmed from one source--JUSPAO at the Embassy--with operational discretion permitted at lower levels of command.

Technical advances which increased the PSYOP potential included:

Standardized propaganda developed by JUSPAO was available to tactical units by air delivery to major distribution points.

Printing facilities out of country produced mass printings of leaflets and newspapers.

Master catalogs of themes were distributed. (Upon request, these themes were made into leaflets.)

Television was first used as an instrument of strategic propaganda.

A small adapter named "Early Word" made it possible for airborne transmission of PSYOP appeals directly through an aircraft-mounted loudspeaker system. A radio signal received by the aircraft could be simultaneously taped in the aircraft for further replay.

Tactical limitations depended only on the range of the ground transmitter and the enemy air defense system.

Support to tactical operations was modernized. Loudspeaker support was readily available to ground commanders who could easily adapt themes to their particular situation (i.e., search and destroy operations, among others).

PSYOP TODAY

Today US Army Reserve (USAR) PSYOP units furnish PSYOP support and expertise to the active army. Several Army commands have established mutual support agreements with specific USAR units to augment active army units for combat.

PSYOP RESPONSIBILITIES

THE ARMED SERVICES

Each of the military services provides forces to accomplish its assigned PSYOP mission. Although the US Army has the principal US military PSYOP capability, other services can support the PSYOP efforts. Coordination among all military services and government agencies is required to insure unity of effort, uniformity of policy, and adequacy of coverage.

JOINT CHIEFS OF STAFF (JCS)

The Joint Chiefs of Staff serve as advisers and military staff in the operational chain of command for unified and specified commands. They provide a channel of communications for the President and Secretary of Defense to unified and specified commands, and coordinate all communications in matters of joint interest addressed to these commands. Under this authority, US Army PSYOP forces assigned to theater army or corps in times of crises or during a state of hostilities are placed under operational control or in support of the commander of the unified command. Through the JCS or the unified command, US Army PSYOP units may be tasked to assist other US military or civilian agencies.

DEPARTMENT OF THE ARMY

Department of the Army develops PSYOP resources to support general, limited, cold war, and foreign internal defense. In DA, the Deputy Chief of Staff for Military Operations

(DCSOPS) has staff responsibility for PSYOP. US Army PSYOP resources include command and staff personnel, units, advisers, and equipment. The flow of PSYOP policy from the Chief Executive to the US Army elements is depicted in figure 1-1.

DEPARTMENT OF THE NAVY

Although the Department of the Navy does not have forces dedicated to PSYOP, it can support psychological operations with conventional forces and equipment.

OTHER SUPPORT

Other government and private agencies can assist and cooperate in PSYOP activities, particularly during foreign internal defense operations. Private organizations engaged in education, health, disaster relief, cultural, and missionary work can be of great assistance.

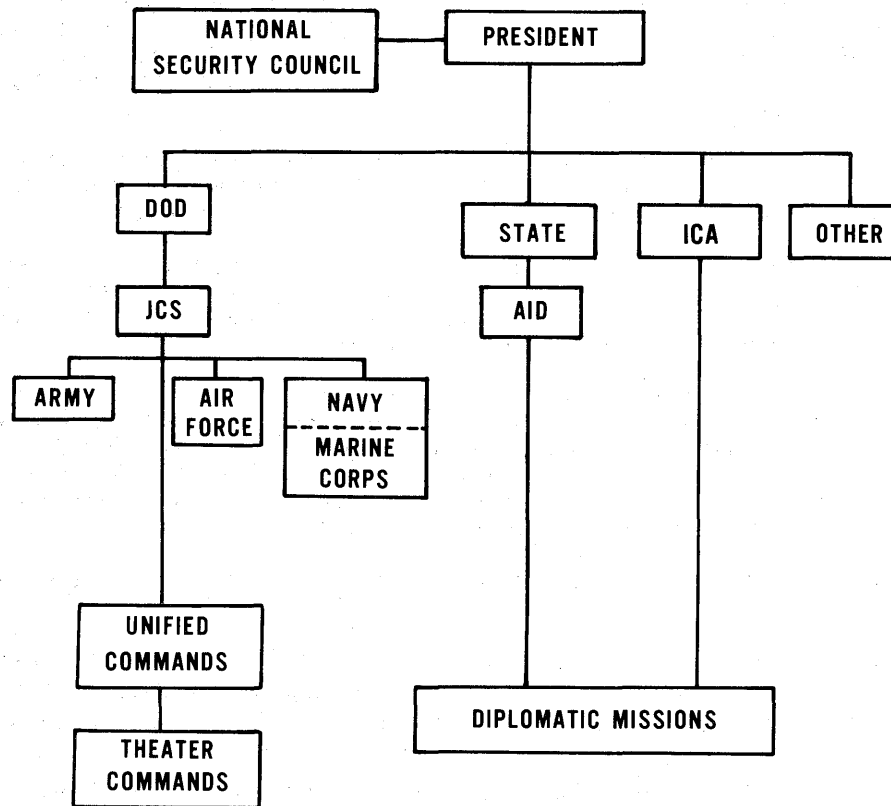


FIGURE 1-1
PSYCHOLOGICAL OPERATIONS POLICY FLOW

UNITED STATES INFORMATION AGENCY (USIA)

In 1953 the USIA was established as an independent arm of the Government's Executive Branch, and most of the functions previously vested in the Secretary of State were transferred to the Director, USIA. Later acts expanded the duties and responsibilities of USIA. Title V, Section 501, Public Law 402, designated the USIA as the agency responsible for the preparation and dissemination abroad of information about the United States, its people and its policies, through press, publications, radio, motion pictures, and other information centers and instructors abroad. Thus, the USIA was the foreign information arm of the US Government, particularly in time of peace. As a part of its mission, the USIA aimed to:

Promote understanding, acceptance, and respect among foreign audiences for the United States and its policies.

Advise the President, his representatives abroad, and the various departments and agencies of government on public attitudes in other countries and their implications on the formulation and execution of foreign policy.

INTERNATIONAL COMMUNICATIONS AGENCY (ICA)

On 1 April 1978, the International Communications Agency was established. It consolidates the functions of the United States Information Agency and the State Department's Bureau of Education and Cultural Affairs. The core management of ICA consists of a Director, a Deputy Director, and four Associate Directors, with designated responsibilities for broadcasting (VOA), programs (PGM), educational and cultural affairs (ECA), and management (MGT).

The internal structure of the Voice of America remains essentially unchanged, but the elevation of the VOA Director gives recognition to the importance of the broadcasting service and is intended to preserve the integrity of its news operation.

The operations of the two other media elements--Press and Publications, and Motion Pictures and Television--come under the direction of the Associate Director of Programs. International exhibits, which have been shown principally in the Soviet Union and Eastern Europe, are a separate element in the same division.

In the new structure for educational and cultural exchange, a major objective is to provide clear lines of responsibility for enhancing, on the one hand, foreign access to American experiences and, on the other hand, American access to foreign experiences and culture.

Aside from the White House, ICA's relationships are primarily with the Departments of State and Defense and the Agency for International Development:

It acts in an advisory capacity toward STATE, and in turn, receives foreign policy guidance.

It works closely with DOD, particularly with the Offices of the Secretary for Public Affairs and of International Security Affairs. By agreement, ICA and DOD exchange liaison personnel at the national level and at joint commands. ICA advises on the impact of overseas public statement and actions in the defense field and cooperates directly with DOD in Washington and major commands abroad to increase support for US policies.

The Agency for International Development, under the supervision and guidance of STATE, administers economic aid abroad. ICA supports the AID mission by publicizing AID programs and accomplishments. Conversely, AID accomplishments reinforce ICA efforts.

Chapter Two

PSYOP RESPONSIBILITIES OF THE ARMY

Psychological operations derive their major effectiveness from being an integral part of a total operation. **They are neither a substitute for power nor a panacea.** When skillfully and closely integrated with actions and other instruments of power, PSYOP act as a catalyst and can often make the difference between success and failure in military operations. Psychological operations can be effectively employed throughout the entire spectrum of conflict.



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THE ARMY PSYOP ROLE

Within DOD, the Army--because of its established psychological operations training base, assigned missions, and land-based operations--has the primary military role in PSYOP. As the service with the principal assets, the Army has the major role in assisting commanders of joint task forces and unified, specified, and combined commands to achieve PSYOP objectives.

The Army develops PSYOP resources to operate in general, limited, and cold war. In the field PSYOP elements are responsible for:

Planning and conducting PSYOP in support of military operations.

Developing in all Army personnel an appreciation of the role and value of PSYOP and an understanding of the psychological implications of military operations.

Planning and conducting PSYOP to support US national objectives abroad.

Interallied PSYOP policy is determined at the highest levels of government and command. At combined levels, PSYOP may be guided by standardization agreements; e.g., NATO. Where operational control of designated US Army PSYOP forces is transferred to allied commanders, directives governing the use of US PSYOP forces and equipment will be provided to the appropriate commanders.

Psychological operations are conducted by military forces under the operational control of the theater or unified command. The Army PSYOP element is commanded by the theater Army commander. PSYOP support may be initiated by PSYOP units in either CONUS or at an in-theater site, normally outside of the combat zone. Operations may be conducted concurrently from both areas. When initiated in CONUS, the theater commander provides input for the development of appropriate programs.

THE ARMY PSYOP MISSION

The Army PSYOP mission is to support US national policy; to conduct PSYOP in support of military operations; to be prepared to conduct PSYOP unilaterally in support of, or in coordination with, other military services and US Government agencies; and to give PSYOP training, advice, and assistance to US forces and friendly nations.

Specifically, Army PSYOP forces:

Assist in formulating PSYOP doctrine, tactics, techniques, and operations of Army forces, other US military services, unified commands, and other US Government agencies.

Develop Active Army and Reserve Component (RC) forces to support plans and operations of Army forces, other US military services, unified commands, and other US Government agencies.

Undertake research and development programs to further the Army's capabilities for PSYOP.

Furnish PSYOP-qualified personnel for liaison and military training teams (MTTs).

Must be prepared to conduct these operations unilaterally in support of, or in coordination with, other military services and US Government agencies.

Must be prepared to provide equipment and area-oriented, language-qualified PSYOP personnel to train, advise, and assist allied/friendly nations in developing their PSYOP capabilities; and must be prepared to provide PSYOP assistance in support of the operations of a host country.

Provide information and generate intelligence for PSYOP.

Develop, procure, issue, and stockpile PSYOP materiel and equipment; must be prepared to provide logistical support to US Government agencies and allied/friendly nations.

Conduct PSYOP training for members of all branches of the US Armed Forces and personnel from friendly/allied nations on a mission basis.

LIMITED WAR

Limited war, with its complex and unwritten national policy objectives, is merely an active continuum of cold war. PSYOP, therefore, require a continuation of policy and execution with a broadening of psychological objectives.

The International Communication Agency (ICA) country plan and theater military plans must be coordinated under the guidance of the US Ambassador; and the psychological operator, the policy advisor, planner, and executor, must have an "up-to-the-minute" knowledge of these plans.

GENERAL WAR

If cold or limited war progresses to general war, the US Army PSYOP elements may be required to increase their PSYOP activities. This may include use of organic equipment and facilities to replace damaged or destroyed civilian mass communications equipment and facilities.

The role of US Army PSYOP in general war is established by National Security Council (NSC) directives channeled through the Department of Defense to the Department of the Army. The role is further defined and coordinated by interagency agreements.

PURPOSE OF PSYOP

The purpose of all psychological operations is to create in foreign groups the emotions, attitudes, or behavior to support the achievement of national objectives. In this endeavor, PSYOP influence policy, decisions, the ability to govern, the ability to command, the will to fight, the will to obey, and the will to support.

Psychological operations can increase the relative combat power of friendly forces and adversely affect the combat power of the enemy. This is accomplished, basically, by attacking the identified weaknesses of the opposing forces through a planned and coordinated PSYOP campaign.

PSYOP field teams are placed in direct support (DS) of the maneuver elements and travel with them to exploit opportunities as they arise. The forward teams provide a constant flow of information to the PSYOP command element at the higher headquarters. The PSYOP unit constantly updates the PSYOP estimate, keeps the commander informed of the psychological impact of the operation, and makes recommendations for the conduct of combat operations.

As the attack progresses, the bypassed, isolated enemy elements are targeted by the field teams. The field teams use all available media to induce their surrender, thereby conserving the combat resources of the attacking force.

Tactical deception plans are supported by using misleading sound effects and by disseminating misinformation. During this time PSYOP support can enable the maneuver commander to concentrate his maneuver units while giving the appearance of maintaining normal dispersion. Operations, such as the feint or ruse, are primarily psychological since the intent is to confuse the enemy and have him react in a desired manner.

Planners, operators, and intelligence personnel require access to all available intelligence that pertains to their mission and area of operations. Effective reporting channels are necessary to insure that the flow of information reaches the PSYOP unit on a timely, uninterrupted basis.

PRINCIPLES OF EMPLOYMENT

Offensive Operations

The mission, enemy, terrain, weather, populace, and availability of troops influence PSYOP support.

PSYOP effectively support combat power.

Under certain conditions, offensive operations are conducted for their psychological impact.

PSYOP exploit the effects of friendly nuclear fires.

PSYOP increase the psychological impact of conventional operations.

PSYOP support subordinate units by facilitating exploitation of targets of opportunity.

PSYOP are coordinated with higher and adjacent units when the effects are expected to influence enemy actions outside of the unit's boundaries.

PSYOP are coordinated with the tactical fire support elements in the operational area to enhance the effectiveness of both systems.

PSYOP support tactical deception operations and other facets of the OPSEC program.

Defensive Operations

PSYOP units supporting combat units in the defense continue to maintain a PSYOP offensive. The defensive situation provides an excellent opportunity to establish credibility by factual news reporting. PSYOP missions in support of the defense include those required to:

- Prepare to resume the offense.
- Discourage an enemy offensive.
- Support forces delaying an enemy advance.
- Support the planning and conduct of counterattacks.
- Support rear area protection operations.
- Conduct PSYOP against bypassed and isolated enemy units in rear areas.
- Support tactical deception operations and other facets of the OPSEC program.

Retrograde Operations

Retrograde operations are characterized by limited offensive, defensive, and delaying tactics. PSYOP teams with heavy printing, broadcasting, and other relatively immobile equipment positioned well to the rear are able to provide uninterrupted support. PSYOP are able to support retrograde operations by:

- Publicizing civilian control measures.
- Supporting tactical deception operations and other facets of the OPSEC program.
- Exploiting the psychological effects of nuclear and nonnuclear firepower.
- Supporting counterattacks by placing emphasis on the large number of enemy casualties.

Relief Operations

PSYOP will:

- Support tactical operations and other facets of the OPSEC program.
- Remain in place to support the incoming unit.
- During a forward passage of the lines, support the attacking unit.
- During a rearward passage of the lines, remain with the covering forces.

Support of Other Types of Tactical Operations

When supporting other types of tactical operations, the basic PSYOP principles apply; however, the techniques and manner of application may vary.

Civil Affairs

PSYOP support civil affairs in offensive, defensive, retrograde, relief, and consolidation operations.

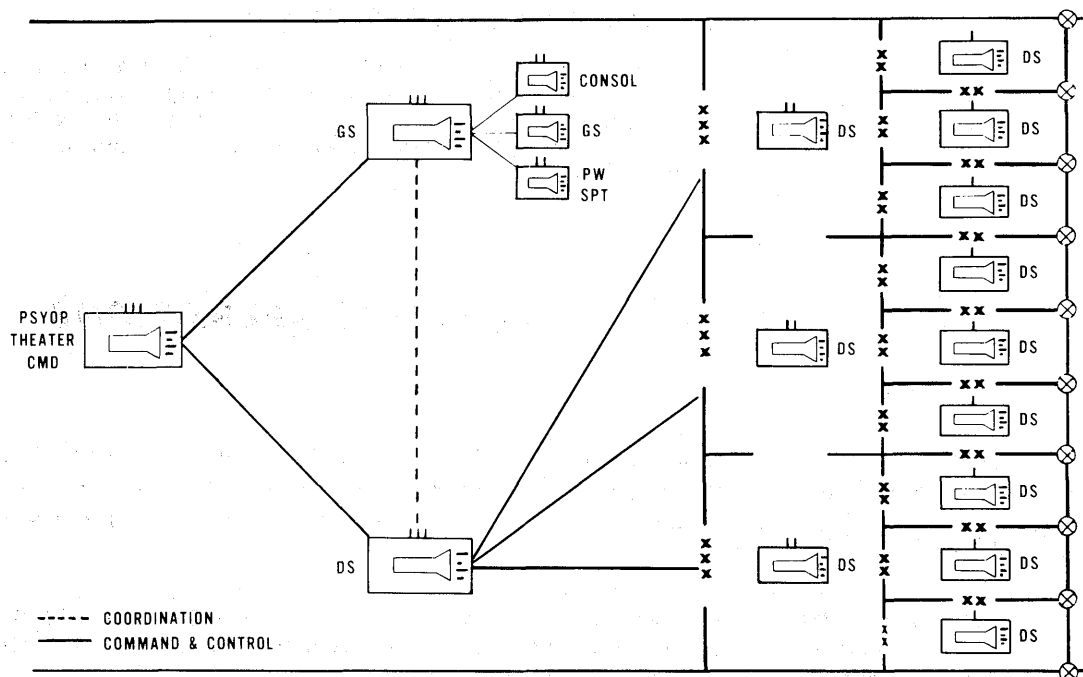


FIGURE 2-1
PSYOP SUPPORT OF A THEATER

TYPES OF PSYOP SUPPORT

Psychological operations support is type-classified according to the level of employment, location, and the physical scope of the operation. The classifications overlap. There are no clear-cut lines as to where support stops for one type operation and begins for another. A PSYOP unit may support all types of operations simultaneously. The three major classifications are:

STRATEGIC SUPPORT

Psychological operations in support of strategic operations are designed to exploit vulnerabilities in foreign military forces and populations. They are designed to **advance broad or long-term objectives**. General support (GS) forces are generally used in this role.

TACTICAL SUPPORT

Psychological operations in support of tactical operations are planned and conducted in the combat area to **achieve immediate and short-term objectives**. Normally, direct support (DS) PSYOP units are used.

CONSOLIDATION SUPPORT

PSYOP supporting consolidation operations assist in the reorientation and education of the civilian population in liberated or occupied areas. The purpose is to **facilitate military operations and obtain maximum cooperation of the inhabitants**.

PSYOP IN SUPPORT OF STRATEGIC OPERATIONS

Psychological operations in support of strategic operations are directed at large segments of the target nation's population. These psychological operations exploit economic, military, sociological, psychological, and political vulnerabilities. They are an integral part of the overall strategic scheme.

PSYOP policies and objectives are approved at the national level. Effective interagency coordination is established at all levels of government and command to insure that no conflicts exist between military PSYOP and other government activities.

Guidance for the support of strategic operations usually emanates from the National Command Authority (NCA). Psychological operations are coordinated with general strategic plans and are directed against forces, people, or areas in their entirety.

Psychological operations supporting strategic operations are normally conducted in support of the unified or specified commands. The unified command issues directives to implement the national policy and establish command policy. These operations are not limited to the area of influence of individual subordinate commanders.

Planning is a continuing process. PSYOP personnel continually evaluate the results of current operations, update current plans, and continue long-range planning to insure adequate support for future operations. Contingency plans and supporting pretested propaganda are prepared and held ready for implementation on order. It is during the planning phase that the psychological impact of a contemplated course of action must be considered. (See chapter 12, Psychological Operations Planning, for more detailed information.)

MAJOR OBJECTIVES

- Deter enemy forces from initiating hostilities or intervening in existing conflicts.
- Create concern in the enemy concerning the futility of war.
- Arouse public concern, political, and economic pressures for or against a military operation.
- Stimulate dissension among enemy rival power groups.

OTHER OBJECTIVES

- Project a favorable image of the United States.
- Foster understanding and gain acceptance of US goals and operations.
- Convince the target that the United States can fulfill its aspirations.
- Explain US policies and objectives to allied, friendly, and neutral nations.
- Strengthen determination of friends and allies.
- Build confidence of allies in the objectives of the alliance.
- Gain support of neutrals.
- Support resistance personnel.
- Gain support in liberated areas.
- Strengthen friendly leaders; weaken enemy leaders.
- Influence enemy strategy and tactics:
 - Identify and exploit enemy weaknesses.
 - Develop modifications in the character and policies of the enemy to favor the United States.
- Stress enemy racial and religious intolerance.
- Publicize and exploit enemy, racial, ethnic, and religious prejudices and intolerance.
- Build or create enemy political disunity.
- Stimulate support of opposition elements of the enemy.
- Undermine confidence in enemy leadership and war aims.
- Interfere with control systems and communications.
- Support and foster economic and other nonviolent sanctions against the enemy military forces and civilians.
- Encourage disaffection in enemy nations among religious, ethnic, social, political, economic, and other elements.
- Support tactical operations.

CONDITIONS THAT MAY BE EXPLOITED

Military successes of friendly forces.

Shortages of food, housing, clothing, or other necessities in enemy territory or enemy-occupied areas.

Enemy manpower shortages.

Enemy country inflation.

Unequal and exorbitant taxation by the enemy government.

Lack of resources to support the enemy economy and war programs.

Enemy police state practices to include terrorism, midnight arrests, travel restrictions, and censorship.

MEDIA

The most desirable media for strategic operations are radio, television, and leaflets.

PSYOP IN SUPPORT OF TACTICAL OPERATIONS

Psychological operations are an integral and coordinated part of the overall tactical plan. They provide the tactical commander with an additional weapons system, a system that can weaken the enemy soldier's will to fight, thereby reducing his combat effectiveness, and that can prevent civilian interference with military operations. They are designed to exploit individual and group susceptibilities.

Psychological operations in support of tactical operations are planned and executed for specific operations. Targets of opportunity are exploited as they arise.

The theater Army commander, in addition to providing resources to the theater commander to conduct PSYOP in support of theater plans, provides PSYOP resources to support tactical commanders, civil affairs operations, and rear area protection.

CORPS SUPPORT

The PSYOP resources available at corps include staff officers and direct support units required to plan, develop, and execute psychological operations. The corps PSYOP staff officer, with his knowledge of the tactical operations, may be called on to provide specific recommendations to be included in theater plans.

Each corps is normally supported by a direct support battalion. The divisions, separate brigades, and regiments are normally supported by a direct support company from the corps direct support battalion. When limited PSYOP units are available, the combat elements may be supported by specific teams tailored to fit the mission.

DIVISION SUPPORT

The direct support mission of PSYOP units is to provide close, continuous, and priority support to the division and its maneuver elements; these units remain under the centralized control of the higher PSYOP commander.

The division is supported by a direct support PSYOP company consisting of a command and control team (AA); command assessment (AD); supply and maintenance (BA); propaganda development (FA); current intelligence (FC); light printing (GA); platoon headquarters, audio and visual (HA); loudspeakers (HB); and an audiovisual team (HC).

Support During Movement to Contact

During movement into a hostile area, the AD team deploys into a hostile area and analyzes and evaluates the psychological warfare possibilities to:

- Make recommendations to the ground force commander in the area of PSYOP.

- Determine what psychological functional teams should be deployed into the area.

- Evaluate the results of any psychological campaign that had been conducted prior to insertion.

- Plan the use of themes in a PSYOP campaign.

During movement to contact with enemy forces, psychological operations also focus priorities to:

- Provide a detailed and systematic examination of processed intelligence to identify and locate target audiences, identify conditions, pinpoint vulnerabilities, establish objectives, and obtain pertinent information to guide PSYOP exploitation.

- Advise on the psychological implications of planned and executed courses of action.

- Assist in tactical deception operations to support OPSEC.

- Give information and directions to friendly elements operating in the enemy combat area.

- Assure exploitation of PSYOP targets of opportunity.

- Evaluate enemy PSYOP efforts to identify psychological weaknesses, friendly and enemy.

- Promote support for short-intermediate-and long-term US and allied goals:

 - Create a favorable image of US and allied soldiers and leaders. Help control friendly and enemy civilians in the combat area.

 - Counter enemy propaganda (if appropriate) and retain the psychological initiative.

 - Support the strategic PSYOP mission by furnishing detailed and timely information of local vulnerabilities and susceptibilities for use in strategic plans and operations of the division commander's higher headquarters.

Assist in rear area protection to:

Gain the willing, active cooperation of the populace.

Strengthen friendly leaders; weaken enemy leaders.

Support in the Attack

In the attack the PSYOP direct support company uses its propaganda development and dissemination capability to lower enemy morale and efficiency by:

Inducing attitudes of futility and defeatism in the enemy.

Inducing the enemy to defeat/surrender.

Assisting in tactical deception operations to support OPSEC and other measures to confuse the enemy.

Exploiting the psychological effectiveness of US and friendly firepower.

Support During the Exploitation

When the division enters the exploitation phase of the offense, the PSYOP direct support company can:

Provide PSYOP support to subordinate units to facilitate exploitation of targets of opportunity.

Identify and locate new target audiences, identify conditions, pinpoint vulnerabilities, establish new objectives, and obtain pertinent information to guide PSYOP exploitation.

Conduct PSYOP against bypassed and isolated enemy units in rear areas.

The success of the division's pursuit can be magnified by the ability of the PSYOP direct support company to:

Facilitate the occupation of enemy areas by delivering ultimatums and defect/surrender appeals and directions.

Lower enemy morale and efficiency by emphasizing:

Numerous enemy defeats and high casualties.

Lack of civilian support.

Heavy and effective artillery and air bombardment.

Insufficient or inferior enemy supplies and equipment.

Precarious enemy situation.

Inexperienced or unqualified leadership.

Excessive periods of hardship.

Lack of medical supplies and treatment facilities for enemy sick and wounded.

The forcing of enemy minority groups into combat.

The enemy draft into its combat forces of the overaged, underaged, physically unfit, inexperienced, and totally untrained personnel.

Support in the Defense

To support the division commander in the defense, the PSYOP direct support company can utilize printing, loudspeaker, and audiovisual equipment and call in radio, guided by personnel skilled in current intelligence and propaganda development, to:

- Support forces delaying an enemy advance by tactical deception operations to support OPSEC.

- Support rear area protection operations:

 - Gain the willing, active support of the population.

 - Strengthen friendly leaders; weaken enemy leaders.

 - Breed uncertainty in enemy troops.

- Influence enemy strategy and tactics:

 - Arouse public opinion and foment political and economic pressures against enemy operations and in favor of friendly forces.

 - Stimulate support of opposition elements to the enemy, particularly those within its territory.

 - Lower the morale and efficiency of enemy military forces and civilians by encouraging disaffection among religious, ethnic, social, political, economic, and other potentially dissident elements.

 - Advise on the psychological implications of planned and executed courses of action.

- Identify and locate target audiences, identify conditions and pinpoint vulnerabilities, establish new objectives, and obtain pertinent information to guide PSYOP exploitation.

- Evaluate enemy PSYOP efforts to identify psychological weaknesses, both friendly and enemy.

Support in the Retrograde

During retrograde operations, PSYOP teams (using heavy printing presses, radio transmitters, appropriately positioned, as well as semimobile equipment, and highly mobile loudspeaker teams) are able to provide uninterrupted support to the division commander.

Support During Delaying Action

In the delay the PSYOP direct support company supports tactical deception operations in support of OPSEC by disseminating information that supports or confirms the tactical operation and its objectives.

Support in the Withdrawal or Retirement

During withdrawal and retirement, the PSYOP direct support company focuses its attention on:

- Publicizing civilian support measures.

- Exploiting the psychological effects of US and friendly firepower.

Supporting tactical deception operations.

Supporting counterattacks by identifying and locating target audiences, identifying conditions, pinpointing vulnerabilities, establishing new objectives, and obtaining pertinent information to guide exploitation by psychological operations.

PSYOP IN SUPPORT OF JOINT TASK FORCE (JTF) OPERATIONS

A PSYOP battalion under the operational control of the joint task force (JTF) commander is adequate to support a JTF provided the JTF strength is not greater than that of a corps. As a minimum, the following teams are recommended:

AB (Command and Control Battalion)

FA (Propaganda)

FC (Current Intelligence)

FD (Research and Analysis)

GA (Light Printing)

Others may be added if the situation dictates. When the JTF is larger than a corps, an augmented PSYOP battalion or possibly two battalions are required.

THE JTF PSYOP STAFF OFFICER

The greatest efficiency and effectiveness can be gained by having the PSYOP battalion commander serve in the dual role of JTF PSYOP staff officer and PSYOP battalion commander, except when operating with an amphibious JTF. In this case, with the JTF Headquarters operating from aboard ship, the PSYOP battalion executive officer should remain aboard and serve as the JTF PSYOP staff officer. The PSYOP battalion commander could then exercise command and control of his troops while operating with the senior ground force commander.

THE PSYOP STAFF OFFICER AND THE J2/J3 OPERATIONS CENTER

It is also desirable that the JTF PSYOP staff officer function as a part of the J2/J3 Operations Center, regardless of the joint staff section under which he is assigned on the Joint Table of Distribution (JTD). This can serve as a highly effective method of integrating psychological operations into both intelligence and tactical functions and operations.

To serve as the JTF PSYOP staff officer is a full-time job requiring complete concentration on and dedication to psychological operations. Therefore, it is recommended that the officer filling this position not be called upon or tasked to perform duties other than PSYOP. (See USREDCOM Manual 525-4.)

PSYOP IN SUPPORT OF CONSOLIDATION OPERATIONS

Consolidation operations are those operations directed toward populations in either liberated or occupied areas to facilitate military operations and promote maximum cooperation with the liberating or occupying power. They are a responsibility of the theater commander. The theater Army commander is assigned the task of administering and rehabilitating occupied or liberated territory.

The psychological objectives vary with the area, the population, and the mission of the supported civil affairs unit. The primary objectives are to:

- Obtain support for military operations.

- Orient and reeducate the population in accordance with command policies, objectives, and missions.

ORGANIZATION

If the Theater Army Area Command (TAACOM) covers a large area, it may be subdivided for ease of control. Corps commanders conduct consolidation operations in their areas of responsibility with resources provided by the theater Army.

PSYOP units supporting consolidation operations are placed under the operational control of the Civil Affairs command support units. They supplement organic civil affairs elements, such as civil information sections or teams. Special purpose PSYOP units composed of the K-series consolidation teams (shown in table of organization and equipment (TOE 33-500H) are normally assigned the mission of supporting consolidation operations. These teams are organized to:

- Conduct PSYOP through mass media and face-to-face communications.

- Supervise or advise indigenous personnel on the use of PSYOP through local communications media.

- Provide PSYOP support for rear area protection operations and civil defense.

SPECIFIC CONSIDERATIONS

The following factors must be considered in planning and conducting consolidation operations:

Continuity

Psychological operations in liberated and occupied areas are carried out as a unified, continuously evolving program from the time the area is occupied to the time the military occupation ceases. The plans for PSYOP in support of consolidation operations are prepared as early as possible--the overall plan, prior to occupation; subordinate plans, as soon as the tactical situation permits.

Consistency with Postwar Aims

Consolidation operations planning must be consistent with postwar aims. The PSYOP planner must avoid making commitments for short-term gains that may not fit long-term policies.

Relation to the US Information Program

Consolidation operations must be correlated with the US Government's information program and must follow directives guiding that program.

Relation with Friendly Underground

Every effort should be made to obtain the cooperation of friendly governments-in-exile and friendly guerrilla and resistance organizations in order to coordinate all PSYOP programs being implemented. This will help to eliminate counterproductive PSYOP and to achieve common objectives effectively and efficiently.

OPERATIONAL SUPPORT

PSYOP resources are used to transmit information and directives to the population. However, there are fundamental differences affecting consolidation operations in liberated and occupied territories. In liberated areas psychological operations tend to be persuasive whereas in occupied areas they may be arbitrary and directive. The demands of combat and the need for control, however, may require that people in both areas be treated alike.

Liberated Areas

US activities in liberated areas will be governed by the military situation, US policy, and international and interallied agreements. Agreements will normally require that US forces not target the inhabitants of liberated areas with PSYOP beyond the period of time dictated by military need. The agreements may include a proviso that US forces train, advise, and assist the friendly government and its forces. In these circumstances US PSYOP elements will not actively engage in PSYOP directed towards the indigenous population in the friendly territory. US Army PSYOP doctrine, techniques, and procedures will be used as a basis for advising, training, and assisting the friendly government or its forces.

Occupied Areas

In occupied areas PSYOP assist in implementing civilian reeducation and reorientation programs. The process of eradicating unacceptable ideological practices and influences continues throughout the occupation.

PSYOP ASSISTANCE

Whether implemented by US PSYOP elements, the host country government and its forces, or other allies, PSYOP can assist the commander in the following ways:

Establishing Law, Order, and Discipline

Organization of populated areas involves the judicious use of propaganda designed to calm the fears of the populace, prevent aimless panicky movement, and direct their activities into useful channels. PSYOP help to create a state of mind conducive to the establishment of law and order by conditioning the population to willingly accept imposed controls and restrictions. This reduces the number of troops required for population pacification and control.

Securing Lines of Communication

Modern warfare requires force mobility. It is essential to keep main lines of communication open for the flow of military forces, equipment, fuel, and other supplies.

Control of Refugees, Evacuees, and Displaced Persons

Refugees, evacuees, and displaced persons frequently clog military arteries, hindering the movement of combat units and equipment. By publishing and broadcasting information and instructions, PSYOP units assist the area commander in keeping his lines of communication and supply open.

Marshaling Labor

PSYOP units, under civil affairs direction, assist in publicizing labor needs among the civilian population and directing potential workers to appropriate labor offices.

Intelligence

Through close contact with friendly and hostile persons, PSYOP personnel gain information of value to the G2/S2 (to include intelligence and counterintelligence programs) and the PSYOP effort. It is important that PSYOP personnel insure that such information is placed in intelligence channels. PSYOP also develop and disseminate appeals to the population encouraging them to report information on enemy activities.

Rumor Control

Psychological state of inhabitants in a combat zone makes them vulnerable to rumors which may stimulate undesired actions (or inactivity) that may interfere with combat operations. Rumors must be countered with a timely, accurate, and well-managed information program.

ORIENTATION AND REEDUCATION

The second major objective of PSYOP supporting consolidation operations is the orientation and reeducation of the population. Under policy guidance and direction from higher headquarters, PSYOP personnel advise and assist in the preparation of plans, programs, and operations to indoctrinate and reeducate the local population in areas under US and allied control.

The objective of these programs is to develop understanding and favorable attitudes in the local population toward our military forces, gain local support for the military effort, and aid in the accomplishment of all allied aims and objectives.

Orientation and reeducation of the population begins as early as possible and may run concurrently with the combat support mission. These programs are assisted by publicizing activities which benefit the population and by explaining US and allied intentions vis-a-vis the liberated or occupied areas.

In both liberated and occupied areas this involves eradicating doctrines and practices hostile to US objectives and eliminating the influence of individuals and groups identified with hostile doctrine. This continues throughout the period of occupation. One of the major tools of orientation and reeducation is psychological actions.

US PSYOP elements will not activate or implement PSYOP against an indigenous population when US, allied, or host country agreements prohibit such activities.

These actions, intended to influence the actions and attitudes of the target, can be effectively employed in conjunction with propaganda and information programs. Combined, the effectiveness of each is increased. Planned psychological actions properly publicized are more effective than the word alone.

OTHER PSYOP OBJECTIVES IN CONSOLIDATION OPERATIONS

In consolidation operations, there are a number of objectives other than orientation and reeducation that do not involve the dissemination of propaganda:

Search for Media and Personnel

PSYOP personnel may be called upon to assist in locating indigenous communications media, equipment, supplies, and personnel. Equally important is locating key communicators and influence groups within the society.

Dissemination of News

The people of liberated or occupied areas must be kept informed. Credible information transmitted by press, radio, and television is useful for political indoctrination under an orientation and reeducation program. PSYOP elements may assist in this program.

Collect Information

Much information obtained from local people is valuable in evaluating the "temper" and attitudes of the populace. This information will help to determine the nature and content of the consolidation PSYOP program.

Gain Willing Cooperation

Intimidation stemming from the presence of strong military forces may temper hostility and make the populace more responsive to authoritative direction. Positive, well-publicized psychological measures (actions and propaganda) must be taken to transfer intimidation into long-lasting, willing cooperation.

In occupied or liberated areas feelings of inferiority will often be found among minority groups who, because of race, religion, ethnic background, or socioeconomic status, have humbled themselves for a long time. Thus, they may tend to offer little resistance to propaganda. Advantage should be taken of this situation to gain the assistance of this target group.

In an area recently subjected to total war, civilians are generally in a state of shock, weary, and apathetic. This often renders them unable to resist authority, thus easing control through PSYOP.

In a newly liberated or occupied area a normal characteristic of civilians is to depend upon the occupying power because it supplies vital goods and services. For reasons of self-interest, therefore, these people may be willing to assist the propagandist.

Make The Military Situation Known

Knowledge of the favorable military situation of the occupying forces tends to make the civilian population more cooperative. PSYOP can and should be used to exploit this tendency.

Capitalize on Existing Habits

People are accustomed to receiving news and information through specific, well-known, and established sources and media. They more readily believe and follow information and directives received through these sources and media. The consolidation propagandist capitalizes on these existing habits by using familiar sources, media, formats, and style.

OBSTACLES

Some conditions which may hinder consolidation operations are:

Resentment Against Occupying Forces

Antipathy toward occupying forces may cause resistance in the form of disruptive behavior, even rebellion.

Ideological Differences

The consolidation propagandist may find himself dealing with staunch adherents to ideologies hostile to his own. In conquered territory these hostile ideologies may stimulate the formation of resistance groups; in liberated areas, dissident elements may undermine the occupation. To be effective, the propagandist must understand existing ideological differences. Then he must develop his campaign to deal with the realities of the situation.

Military Misconduct

Occupation forces who lack dedication and understanding of their mission often engage in acts that discourage cooperation by the people. To eliminate misconduct and improve understanding of the mission, the individual soldier must be oriented toward attainment of the mission objectives. His actions and attitude must win the favor of the people.

Although PSYOP cannot be directed at US personnel, PSYOP personnel may make commanders aware of specific tension-producing conduct and the reasons for the public attitude.

Devastation and Disruption of Communications

Consolidation operations depend upon communication. When communications are destroyed or disrupted, informing and controlling civilian populations become difficult. Due mainly to the lack of current information on the situation, disrupted communications affect face-to-face communication as well as mechanical forms such as radio and newspaper. PSYOP units with their equipment and expertise may alleviate the problems caused by disrupted facilities and installations.

Enemy Propaganda

Although forced from the area, the enemy may continue to direct propaganda toward the population, holding some members and perhaps gaining new adherents to his cause. PSYOP personnel are a vital force in countering the effects of enemy propaganda. The best program is one that combines propaganda of the word with propaganda of the deed.

Attitudes

The initial consolidation effort is perhaps the most difficult since the attitudes of the population may not be fully known. Understanding these attitudes helps the operator in planning consolidation operations and increases the potential effectiveness of the operations. These attitudes can be uncovered by target analysis. The following attitudes should be examined.

Attitudes toward occupying forces. Liberated populations normally have more friendly attitudes toward the liberating forces than occupied-area populations have for the occupying forces. The propagandist must ascertain the tenor and intensity of the attitudes of the population to deal effectively with them.

Attitudes toward accepting discipline or control. People accustomed to totalitarian methods may respond favorably to authoritarian controls. Those familiar with a democratic way of life may require persuasion rather than discipline.

Attitudes shaped by proximity of the enemy. When enemy forces are located relatively near occupied or liberated areas, the population will fear their possible return and give minimal cooperation to consolidation operations authorities. On the other hand, if the enemy is remote and unlikely to return, both friendly and hostile persons are more likely to cooperate in the consolidation effort.

Attitudes based on enemy propaganda. In liberated and occupied areas the enemy will seek to advance his own ideology through intensive propaganda. The consolidation propagandist must ascertain the source and effectiveness of enemy propaganda so that he can make his own more effective.

Attitudes created by organized resistance groups. When organized resistance groups exist in liberated or occupied areas, their presence and actions against occupying forces greatly influence the population.

PROPAGANDA IN CONSOLIDATION OPERATIONS

The same principles and techniques discussed elsewhere in this manual apply for the conduct of PSYOP in support of consolidation operations. The attitudes and environment of the target audience must be analyzed before a psychological campaign can begin. Themes and messages must be credible and easily understood, and the target audience must be given reasonable courses of action. Many themes can be developed based on the present situation and designed to pursue specific objectives.

News

News is valuable to support consolidation propaganda objectives. Local news of the military occupation and the progress of the war and world news on political, educational, religious, economic, and scientific matters are relevant and are of increasing interest to the population.

Themes in Liberated Areas

In liberated areas consolidation units primarily use themes concerning the aims of the United States and its allies, emphasizing unity.

Themes in Occupied Areas

In occupied areas consolidation operations may stress the theme that the old order has been replaced and that for their own best interest the people should cooperate with the occupying forces.

Entertainment

In either liberated or occupied areas consolidation units can provide entertainment, such as motion pictures, to people lacking such diversion due to the devastation of war. Whether pure entertainment is presented or mixed with messages, any momentary relief from the realities of the situation will aid greatly in obtaining the cooperation of the people and in creating an atmosphere within which progress toward US objectives can be achieved.

PSYOP IN SUPPORT OF REAR AREA SECURITY

The duties of US PSYOP elements in friendly rear areas generally consist of supporting military or politico-military activities in other areas. Except when required for security or to accomplish the military mission, PSYOP will not be aimed at the indigenous population. Under no circumstances will US PSYOP staffs or units undertake any campaigns, programs, or other activities that will infringe upon the sovereignty of the host country over its populace or lessen such ties between the host country and its populace.

The delineated role of PSYOP units in friendly rear areas must be meticulously adhered to. To avoid embarrassing the US Government or jeopardizing the host country's position with its populace, US PSYOP units will strictly adhere to proper channels in implementing requests for advice, training, or assistance.

Chapter Three

3

PSYOP RELATIONSHIP WITH COMMAND AND STAFF FUNCTIONS

Psychological considerations and operations--basic components of all military activities and operations--are command responsibilities. They are factors to be included in the planning and execution of all military activities and operations. In fact, psychological objectives may be more important than physical objectives in some instances. Tactical operations can be conducted for psychological reasons as well as physical objectives.



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COMMANDER

The commander provides PSYOP guidance consistent with policy received from command authority. His command responsibilities include:

Assessing the psychological impact of the military presence, activities, and operations.

Integrating PSYOP with other politico-military activities and operations.

Planning and conducting operations and activities to achieve specific psychological objectives. This must be done even though he does not have PSYOP personnel to assist him.

Supervising, guiding, and directing his staff to insure that:

Essential PSYOP objectives inherent in the unit mission are identified.

Subordinate commanders and staff officers are provided guidance concerning PSYOP objectives and plans.

PSYOP staff responsibilities are assigned.

PSYOP staff personnel are fully integrated into all intelligence and operations staff activities.

All subordinate commanders and staff personnel are alert for PSYOP targets of opportunity and other situations where PSYOP will help to achieve the unit mission.

A PSYOP training program emphasizing the vital responsibilities of the individual soldier in influencing the opinions, attitudes, and behavior of others is integrated with all instruction and training.

PSYOP elements in exercises are encouraged to simulate and distribute friendly and aggressor propaganda.

PSYOP field teams are used in field training exercises (FTXs) so that they may gain valuable field experience.

STAFF

At joint levels, psychological operations are governed by joint publications.

The **Joint Chiefs of Staff** have the responsibility to:

Plan for the conduct of PSYOP.

Furnish PSYOP advice and assistance to allies, and assist other US agencies.

Formulate joint PSYOP doctrine and specific policies for joint PSYOP.

Provide intelligence support for PSYOP.

Coordinate PSYOP matters with civil affairs, public affairs, and other related activities.

Through commanders of unified and specified commands, plan and conduct combined PSYOP with allied governments and international commands.

Assistant Chief of Staff, G5, Civil-Military Operations (CMO) Officer is the principal staff assistant to the commander in all psychological, ideological, political, economic, and social aspects of military operations. He is also responsible for the PSYOP techniques used to support the command objectives. The CMO has the following PSYOP-related functions:

Advises, assists, coordinates, and makes recommendations concerning civil-military operations, to include the psychological aspects of proposed operations.

Responsible for the preparation of the PSYOP Estimate of the Situation. (See appendix D and appendix E, PSYOP Annex/Appendix to the Operations Order.)

Provides technical advice and assists in the development of educational programs for prisoners of war.

Maintains close, continuing relations with other US agencies having PSYOP responsibilities.

Coordinates with all personnel, units, and agencies to assure that the PSYOP effort is integrated and adheres to policy.

Exercises staff supervision over PSYOP units that are attached or under the operational control of the command.

Evaluates enemy PSYOP efforts to identify psychological weaknesses and to measure the effectiveness of friendly propaganda.

Uses the knowledge and expertise of his PSYOP staff officer to achieve psychological objectives.

Coordinates the acquisition of local resources--equipment, material, expendables, and personnel.

Assures that civil affairs and PSYOP units mutually support each other.

For additional details, see FM 101-5 and FM 41-10.

The Psychological Operations Staff Officer works under the G5/S5, CMO officer at corps and below. If there is no G5/S5 in a unit, he works under the G3/S3. Above corps level, PSYOP activities are managed by a separate PSYOP staff officer. At theater headquarters, the PSYOP staff officer has the responsibility to:

Develop theater PSYOP policy.

Develop long-range PSYOP plans.

Advise on the PSYOP implications of planned and executed courses of action.

Prepare and coordinate PSYOP requests and estimates.

Develop plans, orders, and campaigns to support the following activities and operations:

- Combat--conventional and unconventional warfare.

- Foreign internal defense (FID).

- Civil affairs--rear area protection.

- Civil internee and PW programs.

- Any action involving the military presence, activities, or operations.

Evaluate enemy PSYOP efforts to identify PSYOP weaknesses and to measure the effectiveness of friendly propaganda.

Exercise staff supervision to assure execution of the commander's directives.

Assure exploitation of psychological operations opportunities.

Coordinate PSYOP intelligence needs and collect reports (including raw field reports), information, and intelligence from various sources. Some sources are G2/S2 reports; PSYOP personnel in the field; the media--press, radio, TV, etc.; professional politicians and political scientists; cultural anthropologists; sociologists; historians and historical documents; the "man in the street"; battle reports; government, business, social, and labor leaders; soldiers of all ranks; captured and interned enemy military and civilian personnel; refugees; etc.

Furnish the information/intelligence to the G2/S2 to insure integration of the PSYOP and combat efforts.

Use the PSYOP Automated Management Information System (PAMIS). (See chapter 15.)

Coordinate the development, update, and use of basic PSYOP studies (BPS).

Circulate information, area studies, and research papers.

Assist the CMO in preparing PSYOP estimates. (See chapter 15 and appendix D.)

Coordinate the analysis of effectiveness of PSYOP campaigns, themes, messages.

Train, advise, and assist friendly PSYOP personnel.

Coordinate the PSYOP aspects of tactical deception operations.

Psychological Operations Intelligence Personnel should maintain liaison with the G2/S2 office of the supported unit. Liaison with the G2/S2 is vital because PSYOP planners and operational units must have immediate, detailed, PSYOP-relevant intelligence if they are to operate effectively. PSYOP personnel may assist in interrogations, make known the intelligence needs of supporting PSYOP teams, and extract intelligence for PSYOP use.

Chapter Four

METHODS OF EMPLOYMENT

Support responsibilities of PSYOP units are designated by the assignment of missions by the force commander (higher authority) on the recommendation of the PSYOP force commander (the Theater PSYOP Group Commander) and of the ACoS, G5, or G3/S3 if there is no G5/S5. A subordinate PSYOP unit commander has the authority to issue to his subordinate elements orders that are necessary to accomplish his assigned mission. This includes task organization and assignment of missions, provided this does not reduce the degree of control retained by the commander who originally assigned the mission.



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Psychological operations units may be assigned general support (GS) or direct support (DS) missions or both. When so employed, the supported unit furnishes common facilities and items (i.e., messing, paper, ammunition, etc.). PSYOP units may also be assigned or attached to military commands.

A cellular organization, which has been augmented from other TOEs, is the most practical for PSYOP units to perform their various support missions, whether they be strategic, tactical, consolidation, or others.

PSYOP MISSION

The PSYOP unit mission may be general or specific. The mission statement is the restated mission determined by the PSYOP commander's mission analysis. **Each mission must be clearly defined and not so broad as to be meaningless.**

The PSYOP unit mission normally is to support a force or other commander or commanders. It is given in orders and instructions from higher authority, or it may be deduced from knowledge of the situation and of the intent of the supported commander.

When paragraph 1 of the Estimate of the Situation gives a PSYOP unit a general mission of supporting a force commander, the commander of the PSYOP unit includes the course of action of the supported command, or commands, if known.

Specific missions should normally be within the general support mission. A specific mission may be contained in orders or instructions from higher authority, normally the force commander being supported, or it might be arrived at from knowledge of the situation and intent of the supported force commander. (See FM 101-5, Sequence of Actions in Making and Executing Decisions and Combat Service Support Commander's Estimate of the Situation.)

CONTROL AND COORDINATION

It is likely that a number of agencies will be engaged in PSYOP within a theater of operations, including those representing countries other than the United States. Unless control of all PSYOP is centralized within one body, under a single command, duplication of effort, contradictory propaganda, propaganda contrary to national policy, and propaganda of more use to the enemy than the United States and its allies will result. The net result will be confusion and ineffectiveness.

No less important is close coordination at all levels, from the highest to the lowest. It is of the utmost importance at the tactical operating levels. For not only may uncoordinated PSYOP activities result in an unnecessary duplication of effort, they may also be contraindicated and, at best, confusing.

STAFF CHANNELS

Employment of PSYOP units may not be standard within a theater of operations due to the situation, which may be different in various areas or zones. There should, however, be a continuous and uniform staff channel from the highest level down to the lowest unit to insure an integrated and coordinated PSYOP effort and to avoid a confusing network of cross-channel communications.

GENERAL SUPPORT (GS)

A PSYOP element in general support supports an entire force and not any specific subordinate unit or subdivision. Units with this mission remain under the control of the PSYOP force commander and provide the force commander with a means to direct the PSYOP effort in his area of influence.

DIRECT SUPPORT (DS)

A PSYOP element assigned a direct support mission provides close, continuous support to a specific maneuver element or other force. A PSYOP unit with a direct support mission remains under the command of the higher PSYOP commander. It responds directly and gives priority to requests of the supported unit. The DS PSYOP unit is responsible for establishing liaison and communication with the supported unit.

ASSIGNED OR ATTACHED

PSYOP units may be assigned or attached to military commands or civil-military agencies. Assigned PSYOP units are under the command, control, and administration of the commander of the unit to which they are assigned. Attached PSYOP units and elements are subject to limitations imposed by the attachment order. The commander of the receiving unit exercises the same degree of control over the attached PSYOP element that he does over units or persons organic to his command. Responsibility for transfer and promotion of personnel, however, is retained by the parent PSYOP unit commander. Attachment is usually maintained for the duration of a mission or task.

CELLULAR ORGANIZATION

PSYOP units, organized under the cellular TOE 33-500 series, are tailored to perform missions that may be given to any command. The use of cellular teams permits balanced units to be formed with minimal personnel and administrative procedures. This type of unit may add or delete teams

without affecting its organic structure or requiring unit redesignation. (See appendix B for team designations, capabilities, basis of allocation, and mobility.)

AUGMENTATION

The TOE 33-500 series provides for augmentation with cellular teams from other TOE for administration, mess, signal, and medical services. The TOE has no provision for PSYOP unit personnel to augment corps or division staffs. The chief or commander of the supporting PSYOP team or unit can, however, fill the dual roles of commander and staff officer.

USE OF LOCAL RESOURCES

Psychological operations units, for practical reasons, make maximum use of local resources. In addition to economic advantages, the use of local resources, when given voluntarily, gives the local population a vested interest in the operation; in effect, it creates a partnership between the target audience and PSYOP units. This adds a degree of authenticity to the operation and contributes to the success of a campaign.

AIRBORNE

In order to be able to perform any PSYOP missions, designated teams are airborne qualified when supporting airborne commands. Their organic equipment can be transported in US Air Force aircraft.

STRATEGIC OPERATIONS

Because strategic operations have long-range military and political objectives and frequently require coordination with other government policymaking agencies and friendly governments, PSYOP units supporting strategic operations generally will receive their instructions from the National Command Authority. Such PSYOP units generally do not operate in the combat zone.

TACTICAL OPERATIONS

Units supporting tactical operations of combat units in combat zones use mobile loudspeakers and audiovisual and printing equipment to achieve immediate and short-term objectives.

CONSOLIDATION OPERATIONS

PSYOP units supporting consolidation operations assist civil affairs commands in orienting and reeducating populations. The primary purposes are to make combat operations easier and quicker by gaining the willing cooperation of the populace.

LIMITS ON PSYOP

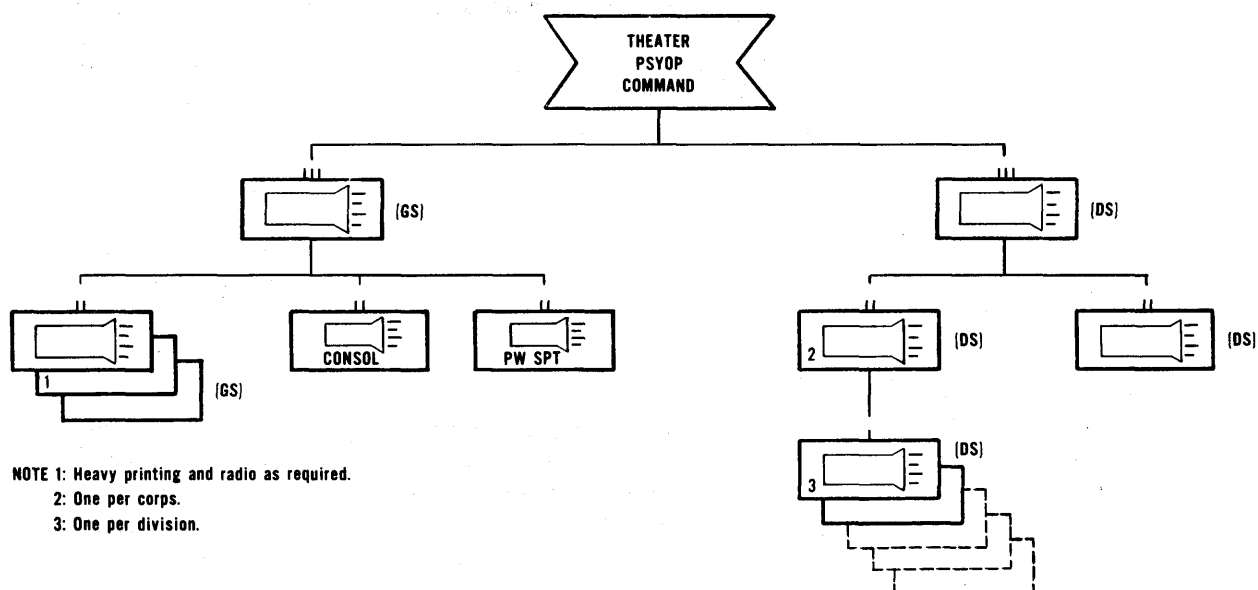
The limits imposed on psychological operations depend on several factors, such as the rules of land warfare, US Government policy, treaties and agreements to which the US is a signatory power, types and phases of conflict, the mission, and the availability of the target audience(s). For example, PSYOP elements on a training and advisory assignment in a friendly country, may do no more than train and advise. In addition, they must base their training and advice on US Army doctrine, techniques, and procedures.

ORGANIZATION OF PSYOP UNITS

(See TOE 33-500H, Psychological Operations Organization, for general organization, detailed breakdown of teams, capabilities, basis for allocation, personnel and equipment allowances.)

PSYCHOLOGICAL OPERATIONS COMMAND

When a PSYOP group is assigned to a theater, it is normally task organized to furnish PSYOP support to the theater of operations. Usually, general support battalions are retained to provide PSYOP support to the theater (see figure 4-1).



TYPE PSYOP UNIT ALLOCATION						
UNIT		THEATER	UNIFIED COMMAND	CORPS	SEPARATE DIVISION	TASK FORCE/ SEP BDE
GROUP		1 or more	1			
BATTALION	GS	1 or more	1			
	DS			1		
	PW SPT	1				
	CONSOLIDATION	1				
COMPANY					1	1

FIGURE 4-1

A TYPE THEATER PSYOP SUPPORT ORGANIZATION

GROUP HEADQUARTERS, TEAM AC

Group Headquarters, Team AC, is the highest level and largest PSYOP command and control unit. It consists of a staff and a supply and maintenance element. This group headquarters team commands and controls two to five PSYOP battalions. It also provides limited administrative and logistical support to its subordinate battalions. Team AC, with suitable operational teams, is normally assigned to theater Army or to a unified command when two or more PSYOP battalions are assigned or attached (figure 4-2).

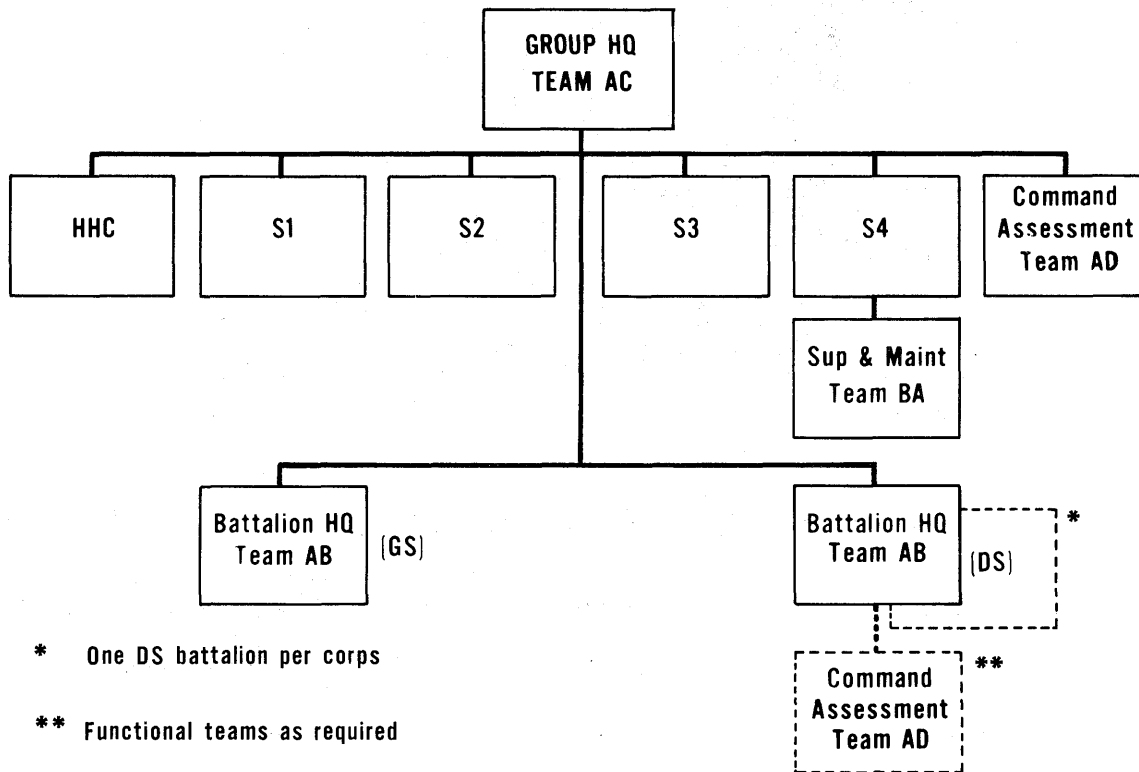


FIGURE 4-2

A TYPE ORGANIZATION PSYOP GROUP

COMMAND ASSESSMENT, TEAM AD

Command Assessment, Team AD, is deployed with a corps deployment package into a hostile area to analyze and evaluate the psychological warfare possibilities, to make recommendations to the ground force commander in the area of psychological operations, and to determine what PSYOP functional teams should be deployed into the area. It is also used to evaluate the results of any psychological campaign that had been conducted prior to insertion and to plan the use of themes to be used in a PSYOP campaign.

The basis of allocation is one per corps deployment package. This team is normally attached to a PSYOP DS battalion. It may, however, be made a part of a PSYOP group should circumstances so dictate (figure 4-2).



BATTALION HEADQUARTERS, TEAM AB (SUPPORT)

Battalion Headquarters, Team AB, with appropriate teams attached, may support all types of military operations. In performing its mission, the PSYOP battalion may be in GS or DS to:

- A major component of a unified command, or a subordinate unified command.
- A separate corps or unit of equivalent size.
- A separate division or equivalent size unit.
- A military police prisoner-of-war (PW) command.
- Others, as needed.

GENERAL SUPPORT (GS) BATTALION

A PSYOP battalion in support of the theater force as a whole consists of an AB team with attached research, intelligence, development, production, radio, and printing elements. A basis for allocation is one or more per theater, as required. A GS battalion normally does not have subordinate companies (figure 4-3).

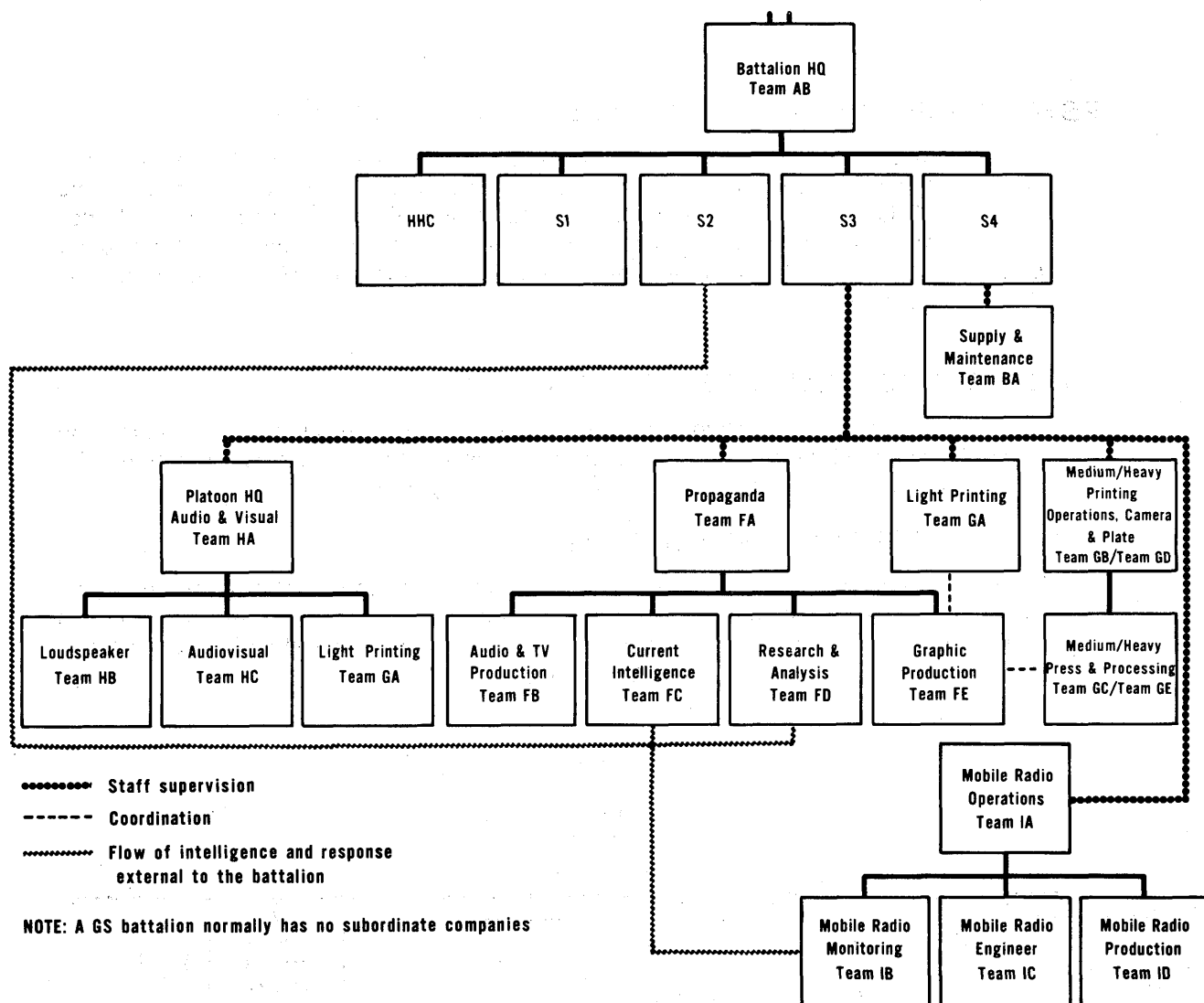


FIGURE 4-3

TYPE ORGANIZATION PSYOP GENERAL SUPPORT BATTALION

PSYOP DIRECT SUPPORT (DS) BATTALION HEADQUARTERS

A battalion headquarters in support of a tactical force consists of a staff, supply and maintenance, and a research and analysis element. This headquarters can command and control two to five PSYOP companies. It can provide logistical and PSYOP developmental support to subordinate companies. The basis of allocation is one per corps, separate division, or equivalent command.

When a PSYOP battalion is in direct support of a corps, the battalion HHC is retained at corps headquarters to provide general support to the corps. The other companies are placed in direct support of major subordinate headquarters. (See figure 4-4.)

PSYOP PRISONER-OF-WAR (PW) SUPPORT BATTALION

A PSYOP prisoner-of-war command support battalion works under the PW commander. It consists of an AB team with intelligence, research, propaganda development, and printing elements. This unit assists in planning and supervising PW education programs. It also acquires and disseminates intelligence and analyzes data received. The PW support battalion also pretests and post tests propaganda media. The basis of allocation is one per theater. (See figure 4-5.)

PSYOP CONSOLIDATION BATTALION

A PSYOP battalion supporting consolidation operations consists of an AB team and personnel qualified in motion picture, radio, television, printing, and display operations. The basis of allocation is one battalion per theater. (See figure 4-6.)

PSYOP DIRECT SUPPORT COMPANY

A PSYOP direct support company consists of an AA command and control team with supply and maintenance, propaganda, current intelligence, light printing, audiovisual, and loudspeaker teams. The basis of allocation is one per division, separate brigade, task force, or equivalent size command. (See figure 4-7.)

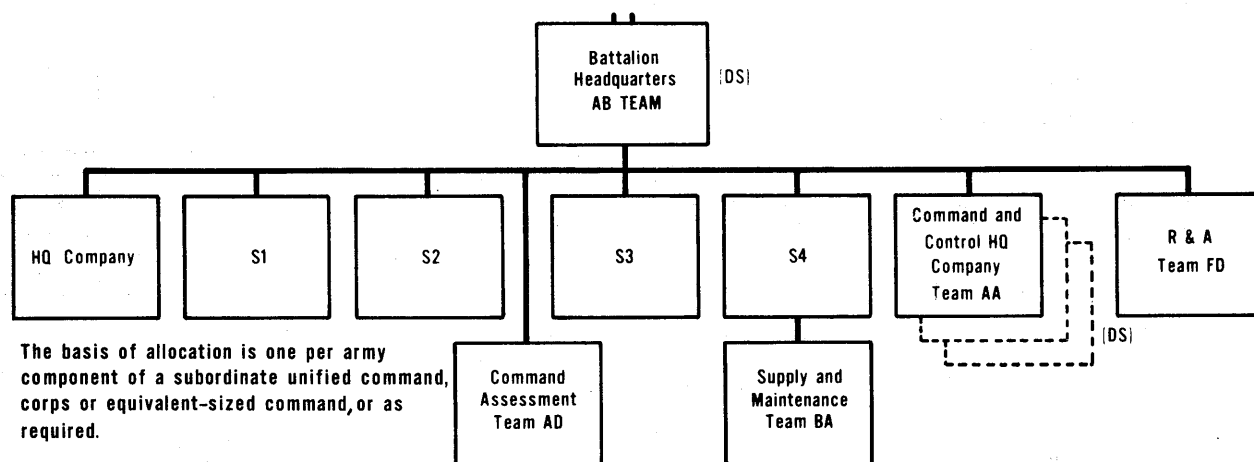


FIGURE 4-4

TYPE ORGANIZATION DIRECT SUPPORT PSYOP BATTALION

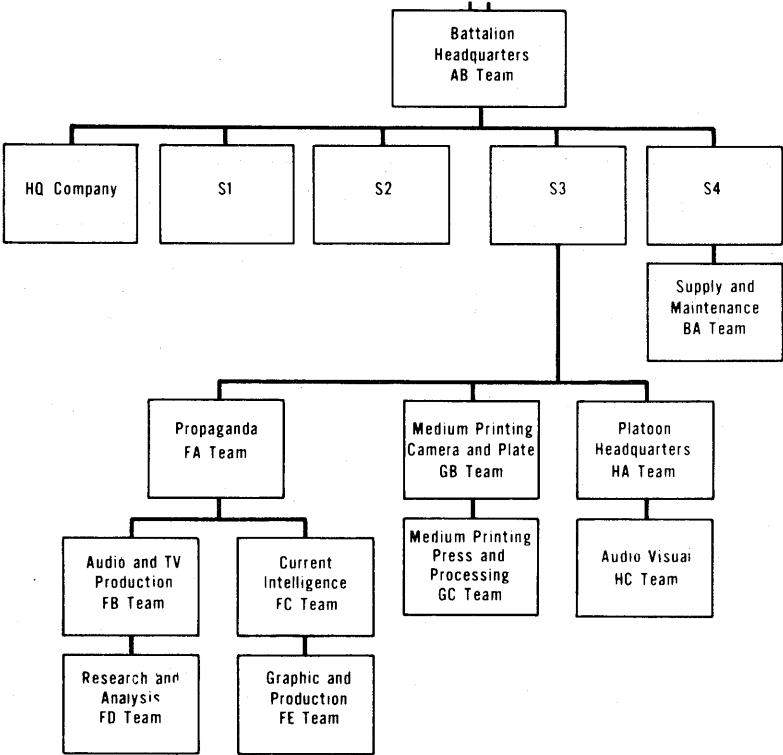


FIGURE 4-5
TYPE ORGANIZATION PSYOP PRISONER-OF-WAR SUPPORT BATTALION

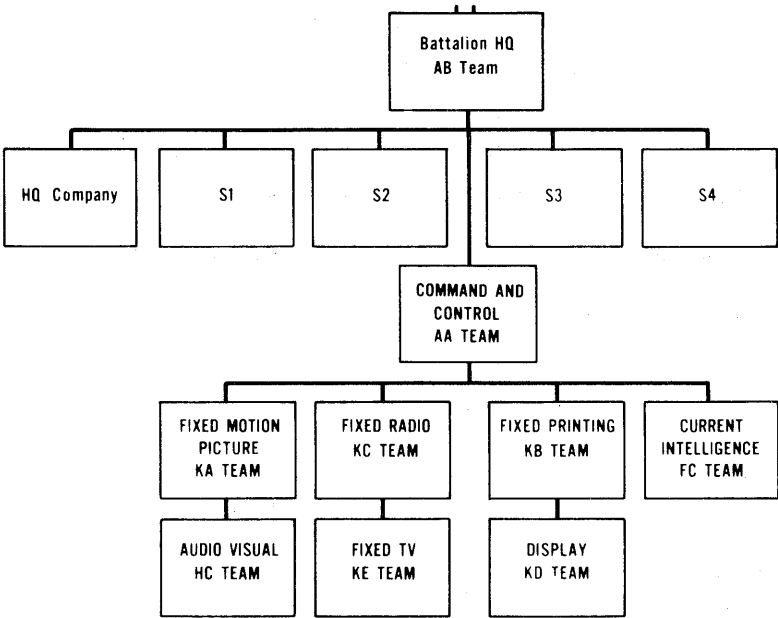


FIGURE 4-6
TYPE ORGANIZATION PSYOP CONSOLIDATION BATTALION

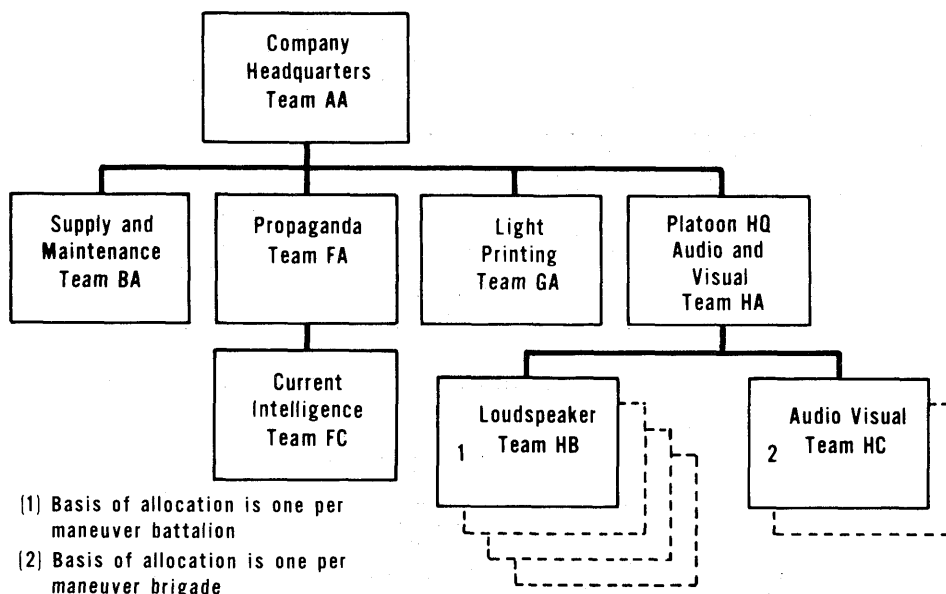


FIGURE 4-7

TYPE ORGANIZATION DIRECT SUPPORT COMPANY

PSYOP BATTALION OPERATIONS

MISSION

The mission of the PSYOP battalion is to:

Plan and conduct psychological operations.

Develop, produce, and disseminate propaganda.

Advise as to the psychological impact of planned and executed operations and actions.

In planning, executing, and coordinating the battalion effort, the psychological operations planner must:

Adhere to national policy **for the area of operations.**

Insure that psychological operations and propaganda produced conform to directives from higher headquarters, Department of State, or the ICA.

There is a serious danger that propaganda developed at the lower echelons will not conform to policy from higher headquarters. A commander cannot interject personal or "gut feeling" propaganda that violates policy. **It is the duty of the senior PSYOP officer with the command violating policy to advise against this course of action and to recommend a conforming course.**

Normally, the major tactical headquarters is granted approving authority to initiate PSYOP campaigns and introduce themes. They must, however, conform to the guidelines in the PSYOP section of the plan or order. **Propaganda may be disseminated only in the command area of responsibility.**

CAPABILITIES

The mission of the supported element determines the type, size, and mix of cellular teams that form the battalion. These factors determine the PSYOP unit's capabilities.

Battalion headquarters commands, controls, guides, and coordinates subordinate teams. Each battalion has an AB team. Each company has an AA team. The G5 office and the tactical operations center (TOC) are the points of contact for external coordination.

Intelligence Operations

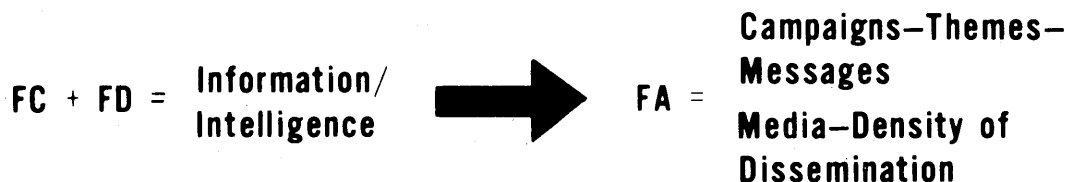
Current intelligence is received from the G2/S2, the IB (Mobile Radio Monitoring) team, and other intelligence channels. Each battalion has one or more FC (Current Intelligence) and FD (Research and Analysis) teams working under close supervision of the FA (Propaganda) team. These teams process current and background intelligence for the battalion and provide the FA team with the information it needs.

Propaganda Development—Propaganda Development Center (PDC)

The FA, FB (Audio and TV Production), FC, FD, and FE (Graphic Production) teams are generally combined to form a PDC (located near the G5) whose members have routine access to information about current and planned operations.

$$\left. \begin{array}{l} \text{FA} + \text{FB} + \\ \text{FC} + \\ \text{FD} + \text{FE} \end{array} \right\} = \text{PDC}$$

With the information it receives from the FC and FD teams, the FA team develops campaigns, propaganda themes, and messages and determines the media to be used and the amount of propaganda to be disseminated in a given area (density of dissemination).



PDC Guidance and Information. In addition, the PDC guides and informs forward teams by:

Informal staff coordination.

Command visits.

Published orders and plans.

Target Analysis Worksheet. One of the major tools used by the PDC is a Target Analysis Worksheet which is a working summary of all intelligence collected relative to a target audience (see appendix F). The completed worksheet indicates:

The target.

Conditions affecting the target that are important to the psychological operator.

Audience weaknesses (susceptibilities) that can be exploited.

The extent to which the target group can help to accomplish the PSYOP mission.

Campaign Control Sheet. The FA team uses the Target Analysis Worksheet to develop a Campaign Control Sheet (appendix G). This document, in chart form, indicates the concept and execution of a PSYOP campaign. It is used to control a PSYOP campaign.

Production

FA team produces rough copy for all forms of propaganda.

FB team prepares radio, loudspeaker, and television scripts.

G-series teams print copy in final form; e.g., leaflets, posters, handbills, newspapers, magazines, etc.

ID team prepares and produces radio programs.

Spreading the Word

The distribution and dissemination of all propaganda is coordinated with the PSYOP battalion S3. The battalion may make personnel available to assist in aerial delivery of printed propaganda and loudspeaker messages.

HB team makes loudspeaker broadcasts.

HC team makes audiovisual presentations.

IC team transmits radio programs.

GA, GC, and GE teams print, package, and distribute printed propaganda to dissemination points.

PSYOP TEAMS IN THE FORCE REAR AREA

The printing, radio, and television teams are normally located in the rear areas of the major forces they support. The printing teams should be located where paper stocks can be properly stored and readily moved, and the final product can be easily distributed.

The graphics, printing, and audiovisual teams support a command on a mission basis. Work priorities are established by the PSYOP battalion S3 based on the needs of the supported force commander. Based on PDC guidance, scripts, graphics, and printed copy are prepared by local illustrators and writers or others intimately familiar with the target audience.

The Printing Cycle

The PSYOP battalion S3 gives the chief of the press section printing priorities and suspense dates. The organic teams--light GA, medium (mobile) GB and GC, and heavy (fixed) GD and GE--produce camera-ready copy and printed propaganda.

The final product must be approved by the originator of the propaganda request before it can be disseminated to the target audience.

The press team packages the final approved product for the selected method of dissemination and delivers it to the airfield, artillery unit, ammunition supply point, or other distribution point.

Air Support

Requests for aircraft to drop leaflets or make aerial broadcasts are normally made through the G3/S3 Air. The type of aircraft used, whether manned or remotely piloted vehicles (RPV), is determined by the Air Force or Army aviation element delivering the propaganda.

The density and effectiveness of enemy air defenses are major factors in determining whether air support will be available. There may be times when a valid request for air support cannot be met due to the extreme effectiveness of enemy defense measures. Use of aircraft exclusively for PSYOP missions is rarely possible.

Radio and Television

Radio and television programs are broadcast over available local and organic facilities. Qualified local personnel are used as much as possible, particularly scriptwriters, directors, actors, engineers, and stagehands.

FORWARD TACTICAL HB AND HC TEAMS

The HB (Loudspeaker) and HC (Audiovisual) teams normally **support forward tactical combat units**. These teams, which also collect intelligence, need qualified linguists. HB teams broadcast from the ground (mounted and dismounted) and from the air. HC teams present slide and motion picture shows, make loudspeaker broadcasts, and produce small amounts of leaflets.

LANGUAGE-QUALIFIED PERSONNEL

In order to be effective, the battalion must be augmented with a local, professional, language-qualified staff to assure that the final product is:

The best that can be produced.

Appropriate to the target audience.

Relevant to their interests.

Credible and persuasive.

*Chapter Five***PSYOP IN SUPPORT OF
FOREIGN INTERNAL DEFENSE**

The primary responsibility for preventing or defeating an insurgency rests with the host country (HC) government--not with the United States or any other assisting government. As a first step, the host government must recognize the existence of an insurgency and fully understand its political nature. Once the HC government understands the cause of the insurgency, it must show interest in the well-being of the people by developing and implementing programs that meet their needs.

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ROLE OF THE PSYCHOLOGICAL OPERATOR

The psychological operator has a major role in PSYOP support of FID. He must:

IDENTIFY DESIRABLE PROGRAMS

First, he must identify the objectives of the HC programs, the HC institutions that have a PSYOP impact, and the programs that HC PSYOP can accomplish.

PARTICIPATE IN POLICYMAKING

Then, he must participate in policymaking at all levels of command. In fulfilling this role, he must assure that the greatest possible consideration is given to the psychological aspects of all policies, programs, and operations.

COMMUNICATE

His next role is that of communicating. In HC PSYOP one of his major roles may be to assist in making known and "selling" the positive programs of the government to its major internal targets. Unexplained government programs breed rumors and suspicion. The communicated program promotes public awareness and appreciation of the government's interest in its people.

THE HOST COUNTRY SOLDIER

Host country armed forces personnel must be indoctrinated with the importance of the civilian population in internal defense and development operations. The individual soldier must understand that his actions toward the population may spell the difference between success or failure.

HOST COUNTRY PSYOP SUPPORT

A unified communications organization is needed for FID activities. An established bureaucracy may tend to become isolated and unable to communicate with the public it is supposed to serve. PSYOP must be closely coordinated with the government information services to avoid contradiction in output.

The criteria for selecting PSYOP personnel should be ability and skills rather than military versus civilian status; neither category has a monopoly on imaginative skill or the ability to influence people. The admixture of personnel takes into account the fact that the political and military aspects of insurgency are interwoven. In order to have any chance of success, the guidance and operations of the integrated PSYOP organization must be accepted by all military and civilian sectors of the population.

US SECURITY ASSISTANCE TO HC PSYOP

US Army participation in PSYOP is initiated **on request of the host government and upon approval of the appropriate US Government agencies**. US Army PSYOP elements may be developed and deployed as mobile training teams (MTT), technical assistance teams (TAT) as part of a US security assistance element, or in direct support of US combat units. They may be attached or under operational control (OPCON) to an in-country Joint US Security Assistance Training Group (JUSSATG).

In order to cope with misunderstandings, delayed actions, or inaction brought about by differences in stages of development and sophistication, culture and language, concepts of time, orientation to mission accomplishment, etc., the US psychological operator must have patience. Differences in patterns of behavior, ethics, pace of life, concepts, sense of obligations, loyalties, concern with adherence to rigid time frames and schedules, and so on may lead the US psychological operator to become impatient and try to do the job himself. This effort is generally doomed to failure. When he has failed to do the job himself, the US psychological operator may try to have host country personnel do it all; this, too, will fail.

The US psychological operator cannot insist that HC personnel attempt to communicate with US equipment and techniques as he does (i.e., as American substitutes). The communications that will result will be neither US nor HC but will combine the worst characteristics of both, with equally disastrous results.

US PSYOP forces can best assist the host country with hardware and advice. This subsidiary role of US forces does not lessen the responsibility of the host government to communicate with its own people, using its own tools and techniques, in its own image.

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Within the context of an insurgency, US PSYOP have five major objectives:

Assist the HC government in gaining the support of its people.

Assist the HC government in defeating the insurgent movement.

Assist the HC government in providing a psychological basis for rehabilitating returnees from the insurgent movement.

Establish and maintain a favorable US image in the HC.

Influence neutral groups and the world community.

Target Audience Considerations

Although the physical situation is important, the social environment of the target is generally more significant. One major consideration is the diversity of target audiences. Each target audience is composed of individuals and groups living under diverse constraints, having diverse interests, levels of education and intelligence, occupations, beliefs, attitudes, and perceptions.

Campaigns, themes, and messages must be designed to influence the various groups within each major audience category; propaganda produced must be based on the culture of each major target group and appeal to the personal sensitivities and interests of that target group.

In an FID situation, the government must convince the populace of its concern. Government activities must reflect government programs that are effective, attractive, and beneficial to the population.

HOST COUNTRY TARGET GROUPS

THE INSURGENT

The major PSYOP objectives are to discredit the insurgents and to isolate them from the population. The insurgents include the guerrillas and their supporting elements--the auxiliary and the underground. The insurgent's infrastructure is invisible. This gives the insurgent an advantage over the government as any damage done to the government is highly visible and has an immediate effect.

An insurgency is determined and gains morale and physical strength in direct proportion to its effectiveness and the attractiveness of its ideology. The cadre and highly motivated members may not be vulnerable to propaganda. Below them, however, there are usually a number of vulnerable individuals and groups; these, though tightly controlled, can be propagandized effectively. The most important direction of attack is against insurgent unit morale.

The insurgent must be destroyed physically and psychologically. Psychological destruction is extremely important because without it, the insurgent force may simply disappear underground to surface at a more opportune time.

Programs should publicize and exploit differences between cadre, recruits, supporters, and the local population. Other themes might emphasize lack of support, isolation, homesickness, or hardship suffered by the guerrillas.

THE POPULATION

Since popular support of the people is essential to victory, the population is the major psychological target of the insurgent and the government. The people are the source of intelligence, manpower, and logistical support for the insurgents.

The major PSYOP mission is to build national morale, unity, and confidence in the government, its leaders, and programs. There should also be an effort to win popular acceptance of the presence of US Armed Forces and to convince the people that:

Government programs serve the interests of the people.

The government forces will protect the people and defeat the insurgent.

Ultimate victory is assured. This need to stress ultimate victory is paramount because if the insurgency enters the second stage, the people's immediate concern will be survival, and they will support the apparent victor.

Voluntary reporting of antigovernment activities is in their best interests.

The insurgent is being misled by questionable promises of a foreign power and is the lackey of that foreign power.

Identification of insurgent leadership will shorten the life of the insurgency and hasten return to a way of life that fulfills the perceived needs of the people.

The people have a major active role in essential counterintelligence activities.

GOVERNMENT PERSONNEL

Host country government personnel are a major internal target. The military, paramilitary, civil services, and other elements of the government make excellent target audiences because:

They have a vested interest in having the government remain in control.

The established chain-of-command or organizational structure facilitates communications and local response.

The PSYOP mission in dealing with this target group is to maintain loyalties and develop policies and attitudes which will result in members of the group:

Realizing the importance of the population and the necessity for popular support.

Promoting the public welfare and justice.

Taking actions within their sphere of activity that will eliminate the basic causes of the insurgency.

Protecting the population from the insurgent.

NEUTRAL AND NONHOSTILE ELEMENTS OF THE POPULATION

The emphasis in communication to the friendly or uncommitted population should be positive and constructive. PSYOP efforts should publicize the tangible and visible accomplishments of the legitimate government. Part of the communication effort should discourage public apathy and activity that will help the insurgent.

The population should not be asked to undertake any action that is contrary to its own direct interest. The most obvious example is action which leads to physical jeopardy or death. If the population takes such action, not realizing the consequences, and the outcome is harmful, the authority that sponsored the communication will lose credibility and its audience.

POPULATION COMMITTED TO SUPPORT THE INSURGENT

The audience supporting the insurgent may do so either out of conviction or involuntary involvement. The PSYOP mission in this case is to achieve a withdrawal of support for the hostile effort and defection in place or in person to the host government. A surrender or return program is recommended as the core effort toward this target.

FOREIGN AUDIENCES

Foreign audiences range widely, geographically, politically, and in their relationships with and attitudes toward the legitimate government and the insurgents. For neutral nations, the purpose of PSYOP is to achieve a friendly neutrality or active support. For external hostile powers, the major objective of PSYOP is to influence public opinion within such nations. An active minority within such nations can change the course of national policy and action. Plausible communications are needed to influence foreign audiences.

Communications to foreign audiences can have a favorable effect on domestic audiences, particularly urban intellectuals and mass media communicators who may be influenced by the foreign reaction.

INSURGENT PROPAGANDA OBJECTIVES AND ORGANIZATION

The insurgent has recognizable psychological objectives, methods, and organization. His themes appear rational and, therefore, are difficult to neutralize or discredit.

THEMES

Insurgent themes typically stress government weaknesses and the gap between government programs and policies and the perceived needs of the people. The primary theme stresses the idea that the objectives of the insurgent coincide with the needs and aspirations of the people. They try to convince the people that the interests of the populace are not served by the government. Themes about government corruption, nepotism, scandal, and other corruptive factors are used to convince the people that their government is unfit to lead them. Other themes used are anticolonialism, nationalism, and land reform.

Insurgent leaders try to make everyone a propagandist. However, the driving force is the hard core cadre.

THE INSURGENT ORGANIZATION

A major technique of expanding control is by means of a vertical shadow political organization--a shadow government. The primary function of the vertical organization is to insure centralized and responsive direction of the insurgent component, either covertly or openly, as circumstances permit. In an insurgent-controlled area, the organization is headed by the local party secretary. The other local personnel report to him.

At the same time, horizontal organizations act as propaganda agencies. These agencies stress the use of face-to-face PSYOP. All other types and media of propaganda are also aggressively used--propaganda of the deed, radio, TV, leaflets, and rumor.

The horizontal organizations organize the populace into functional and "window dressing" groups that meet the needs of the insurgent leaders to control the population through organized groups and that meet the needs of the people to participate. These groups, because they appear and allege to be independent and acting on their own, are extremely deceptive. Individuals within these groups (farmers, women, students, young people, etc.) are closely supervised and criticized. Through such organizations, the insurgents cultivate, indoctrinate, recruit, and manipulate a variety of social groups under their control and through them bring in new adherents. Gradually, these organizations take over all social, political, economic, cultural, public safety, and military institutions.

PSYOP TRAINING, ADVISORY, AND ASSISTANCE EFFORTS

The major security assistance role of US military personnel may be to train, advise, and assist a requesting government threatened with insurgency. In this capacity PSYOP personnel/units would have the missions to:

- Improve the ability of the HC to conduct PSYOP in support of its own internal defense and development program.

- Improve HC command and staff understanding of the PSYOP role in internal defense and development and implementation of PSYOP in HC internal defense and development operations and related programs.

- Recommend and provide, when not otherwise obtainable, essential materiel which can be used and maintained by the host country.

These missions may require US PSYOP personnel to train, advise, and assist:

- Host country armed forces.

- Host country paramilitary and public safety forces.

- Other elements and agencies of the HC government.

- The US military mission within the host country.

An organization should be structured to perform these unique multiple missions. As a minimum, it should contain these elements:

A headquarters element (company, battalion, group). In a small country, a command and control team should be sufficient.

Training elements, such as detachments, teams, or individuals.

Local augmentation, such as:

Professionals and technicians.

Interpreters and translators.

Secretarial and clerical personnel.

Service personnel.

US military personnel providing security assistance do not conduct psychological operations in a host country. The Joint US Security Assistance Training Group (JUSSATG)--the senior US military headquarters--and subordinate advisory units and activities should give active advisory attention to PSYOP and alert HC counterparts to the psychological impact of all military actions, operations, and individual acts of the HC armed forces.

In order to centralize control, the commander of the US PSYOP unit within the HC may be designated as the US command PSYOP staff officer, or he may provide a representative who can support the G5/J7 staff (CMO) mission in accordance with FM 101-5. The duties of this officer should include those of preparing annual PSYOP training, advisory, and assistance plans.

Budgetary restraints will limit the extent of PSYOP training, number of persons receiving training, and training areas. Monetary restrictions will also set limits on fulfillment of PSYOP equipment needs and procurement sources; i.e., in-country, CONUS, offshore.

Chapter Six

PSYOP IN SUPPORT OF UNCONVENTIONAL WARFARE

Unconventional warfare (UW) involves a broad spectrum of military and paramilitary operations conducted in enemy-held, enemy-denied, or politically sensitive territory. It includes, but is not limited to, the interrelated fields of guerrilla warfare, evasion and escape, subversion, special operations, and other low-visibility covert or clandestine operations. These interrelated aspects of unconventional warfare may be prosecuted singly or collectively by predominantly indigenous personnel.

US unconventional warfare forces, augmented by psychological operations personnel, may support and direct the indigenous personnel effort during all conditions of war or peace.



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ROLE OF PSYOP

US UW forces operating within the UW environment have a thorough knowledge of the national and regional social, economic, political, and cultural characteristics of the populace. They have a working ability in the language, communication patterns, and psychological sensitivities of the local populace. The US Army PSYOP element deployed by the US command assists US UW forces in meeting PSYOP requirements.

During UW operations, psychological operations are used to strengthen a weak cause and to make a strong cause even stronger so that its followers, by word and deed, become its dedicated propagandists. More specifically, PSYOP can create unity, maintain or boost morale, renew the resistance force's determination, and develop sympathy for the resistance among uncommitted segments of the population.

PASSIVE ROLE

The mere presence of US UW forces--their operations, official activities, and individual conduct--has a psychological impact on indigenous military and paramilitary forces and the civil population. Official activities and individual conduct in particular help to offset possible unfavorable attitudes of neutrals and uncommitted segments of the population.

US Army PSYOP personnel advise and assist UW forces in developing a favorable image, an image that will win the support of the neutrals, the uncommitted segments, and the resistance movement, its underground and auxiliary forces.

ACTIVE ROLE

With the backing of the United States and its allies, PSYOP policy guidance is directed by the US Ambassador, by the theater military commander, or by a higher level official. These policies, in conjunction with those of local leaders or a government-in-exile, are issued in the form of joint directives. These directives give the authenticity and momentum required to implement an active PSYOP campaign. Within these directives, US PSYOP personnel can actively support UW forces by:

Publicizing successful ambushes and raids, sniper campaigns, interdiction operations, and civil assistance such as sharing medical services and supplies and giving sanctuary to civilian supporters of the resistance.

Publicizing that UW forces are providing manpower and skills to assist the populace in repairing or building needed structures, harvesting crops, maintaining schools and places of worship, and organizing social activity groups. Only structures and activities that the civil population can and will maintain should be assisted. In addition, it is preferred that the idea for a project or other activity and the major input of labor therefore come from the local people.

Warning the civilian population of impending aircraft or missile attacks. These warnings give the impression that the guerrillas control the operation and strengthen the belief of the population in the might of the guerrilla force.

Encouraging some or all of the civilian population, as appropriate, to resist laws, regulations, and restrictions imposed by enemy authorities.

Organizing support elements in all target groups by conducting and supporting intensive education and indoctrination programs.

Meeting face-to-face with local civilians when a specific objective cannot otherwise be fulfilled. These meetings give tangible evidence of US support and appreciation of the objectives and problems of the local guerrilla force. The impact can be strengthened during all stages of UW organization and development.

Assisting in the development and perpetuation of front groups within the populace.

It is crucial that supporting PSYOP personnel have a thorough knowledge of the UW commander's operations environment. Successful employment of psychological operations will win the assistance of supporting resistance elements and build a viable organization.

PSYOP SUPPORT IN UW

PSYOP personnel will plan the type of campaign, themes, messages, media, and methods employed based on an analysis of the target audience. These plans must be integrated in the seven phases of guerrilla warfare--from the psychological preparation stage through the linkup with conventional forces to demobilization. (See PSYOP in the Seven Phases of Development of US-Sponsored Resistance Forces, page 6-6).

PSYOP ASSETS

Theater Command. US Army PSYOP facilities, external to the UWOA, are set up in the theater communications zone by US Army PSYOP units.

Theater UW Command. To support the seven phases of guerrilla warfare, the theater commander attaches a portion of the theater PSYOP resources to the theater UW command. The UW command headquarters coordinates with and supervises US PSYOP support within the UWOA, and coordinates this support with the unified command. Requests for additional PSYOP support are submitted to the unified commander.

Joint Unconventional Warfare Task Force (JUWTF). During hostilities, a psychological operations staff officer from theater headquarters should coordinate with the JUWTF to assist US UW detachments in their respective areas of operations.

Special Forces Operational Base (SFOB). Detachments receive appropriate PSYOP guidance prior to infiltration and are prepared to advise the SFOB commander on psychological opportunities as they arise, to train selected resistance members to apply PSYOP, and, if required, to initiate PSYOP campaigns in coordination with the JUWTF. If additional PSYOP support is required to accomplish tasks beyond the capabilities of the supporting PSYOP element, the SFOB must initiate the request.

Initial PSYOP facilities within the unconventional warfare operations area (UWOA) are austere. Reliance is based primarily on face-to-face communication, but printed media can be produced in enemy-controlled areas by auxiliaries and the underground if indigenous facilities exist. Radio and television coverage may be achieved in the UWOA by transmissions originating from adjacent secure areas.

In later phases, additional PSYOP facilities may be placed in secure areas within the UWOA.

PSYOP TECHNIQUES IN SUPPORT OF UW

Psychological operations techniques such as intelligence collection, target analysis, media selection, propaganda development, and feedback are generally applicable in a conventional or unconventional warfare environment. The task of the psychological operations personnel supporting the UWOA is to employ imaginatively and decisively these techniques in an unconventional warfare environment. To assist in this transition, the PSYOP personnel must be aware of those UW perspectives which differ significantly from conventional PSYOP techniques of employment (See chapter 3, (C) FM 31-20.)

INTELLIGENCE FOR PSYOP

Intelligence is the lifeblood of successful PSYOP. Without intelligence about the feelings and persuasions of the UW target audience, a PSYOP campaign is not likely to succeed. (See chapter 14.) UW forces, by virtue of their mission, deployment, training, and contacts, are able to gather intelligence relevant to the attitudes, allegiance, activities, vulnerabilities, and susceptibilities of the local population, guerrillas, underground, and auxiliary.

MAJOR TARGET AUDIENCES

Using the information supplied by UW forces and other intelligence agencies, four major target audiences may be identified (see pp. 196-198, section V, chapter 3, (C) FM 31-20, and pp. 5-6 to 5-7, chapter 5, this manual):

The Uncommitted

In the initial stage of hostilities, the general population may be neutral or may actively oppose the resistance effort because of fear or uncertainty about the aims of the movement and its success. PSYOP support, therefore, must stress that the resistance shares the political and social goals of the population; that the United States and its allies, in supporting the guerrilla (the military arm of the resistance), support these same goals; and that the resistance movement will be successful.

Enemy Sympathizers

Enemy sympathizers include those civilians in an operational area who are:

- Willing enemy collaborators.

- Unwilling enemy collaborators--those who collaborate under duress.

- Passive enemy sympathizers.

A PSYOP campaign aimed at this target instills doubt and fear. It may be conducted in conjunction with positive political action programs--programs which identify and discredit the enemy collaborator or weaken his belief in the strength and power of the enemy military forces.

It must be noted that punitive action against such collaborators may result in enemy reprisals and, consequently, in a loss of broad civilian support for PSYOP objectives. However, overreaction by the enemy can, when skillfully exploited, build popular support for the guerrilla cause.

Enemy Military Forces

Enemy military forces may be of the same nationality as the population, or they may represent an occupying power or one assisting the enemy government.

PSYOP campaigns are directed against these groups to make their members:

- Feel isolated.

- Improperly supported.

- Doubtful of the outcome of the struggle.

- Distrustful of each other.

- Doubtful of the morality of their cause.

By focusing on the enemy soldier's frustrations, PSYOP can lower his morale, reduce his effectiveness, and create feelings of inadequacy, insecurity, and fear, increasing his susceptibility to PSYOP and making him more vulnerable to persuasion to surrender, malingering, show disaffection, or desert.

Resistance Sympathizers

Resistance sympathizers include those civilians who are sympathetic to the goals of the movement but who are not active members of some element of the resistance force.

Psychological operations campaigns directed at this target audience stress appeals for the populace to actively (though generally covertly) support or passively cooperate with the resistance forces in achieving common objectives. Inherent in these appeals is a rigid personal code of conduct by resistance members which insures that the people, their sensitivities, culture, customs, and needs are strictly respected.

The words and deeds of the resistance must assure the people that the movement can always be counted on to help protect them from all enemies, and that it is the instrument of political, social, and economic progress--as visualized by the populace.

PSYOP IN THE SEVEN PHASES OF DEVELOPMENT OF US-SPONSORED RESISTANCE FORCES

PHASES	CHARACTERISTICS	PSYOP ACTIVITIES
I-Psychological Preparation	Inhabitants of the area are prepared psychologically to receive US forces.	A PSYOP campaign is planned and executed to prepare the inhabitants of the proposed operational area(s) for the presence of US UW forces. The campaign is planned at the highest levels of a government preparing to support a resistance movement. Citizens-in-exile; other popular, respected, and influential people; and key in-country sympathizers are used. US PSYOP units, under the guidance and supervision of the force/theater commander, have a major role in the campaign.
II-Initial	US nonmilitary agencies in coordination with the allied government-in-exile have verified that the populace is willing to accept sponsorship for their resistance efforts. Initial contact has been made with the resistance force (RF) whose leader requested assistance and sponsorship. The Special Forces Operational Base (SFOB) has been established and is fully operational. Operational elements are in isolation receiving extensive briefings and conducting studies.	<p>The emphasis of the PSYOP campaign is changed to support planned RF operations. The SF Group S5, with supporting PSYOP elements, is responsible for preparing the PSYOP plan. The S5 must:</p> <ul style="list-style-type: none"> With SFOB commanders and indigenous assets which have exfiltrated to accompany US UW elements, develop PSYOP campaigns for areas of operations. Conduct PSYOP orientation and training on target groups, communications characteristics and dynamics, themes, symbols, messages, propaganda production, use of media, and dissemination. Provide US personnel with an understanding and appreciation of the mutual relationship and interdependence of US and resistance forces. Develop themes, symbols, and PSYOP actions to support each phase of operations from infiltration to demobilization. Brief all operational elements on propaganda to be disseminated and PSYOP actions to be conducted in each area of operations. Coordinate with area specialist teams (ASTs) on PSYOP plans for each operational area.

PHASES	CHARACTERISTICS	PSYOP ACTIVITIES
III-Infiltration	Operational elements have been briefed on PSYOP. Infiltration is complete and contact has been established with resistance leaders.	<p>PSYOP is conducted in support of US UW forces/resistance force contact and development. The area assessment and a PSYOP program through face-to-face communications are initiated.</p> <p>Operational elements establish rapport, having been advised and briefed by the S5 and supporting PSYOP personnel prior to infiltration.</p> <p>Propaganda is supported by tangible evidence of sponsor support in the form of weapons, ammunition, medical supplies, and money provided to resistance leaders.</p> <p>PSYOP themes stress:</p> <ul style="list-style-type: none"> The ultimate success of the resistance movement. The need for mutual support, confidence, and working rapport.
IV-Organization	The operational element has succeeded in establishing rapport with resistance leaders. Tangible proof (money, weapons, medical supplies, etc.) and supporting propaganda have convinced the resistance force that with mutual support, confidence, and working rapport, fundamental goals and objectives can be achieved. Area and guerrilla organization is developed and training begins. Small-scale combat operations may be conducted. The requirement exists for the operational elements to implement unity programs.	<p>The PSYOP effort is expanded to assist in increasing and developing the resistance force.</p> <p>A major objective of the PSYOP program is to insure close cooperation between all resistance elements. Resistance leaders participate in the formulation of PSYOP objectives and are persuaded NOT to take any action which contradicts or interferes with the accomplishment of these objectives.</p> <p>Motivational campaigns targeting the guerrilla forces are initiated. They cover:</p> <ul style="list-style-type: none"> History of the country. History of the enemy and his objectives. The significance of and need for proper personal conduct of the resistance force toward the civilian population. <p>PSYOP indoctrination programs will cover:</p> <ul style="list-style-type: none"> Political, economic, and social objectives of the resistance movement. Ideological indoctrination of the resistance cadre. The practical impact of tactical operations on the population.
V-Buildup	Small-scale combat operations increase local support and attract recruits for the resistance force. Operational elements increase their activities to establish rapport, to promote cooperation and unified action, to provide tangible proof of support, and to motivate the resistance force.	<p>PSYOP campaigns (propaganda and actions) are conducted to support the expansion and full development of the resistance force.</p> <p>PSYOP must:</p> <ul style="list-style-type: none"> Encourage young people to join the resistance elements. Encourage and win general civilian support for the resistance movement.

PHASES	CHARACTERISTICS	PSYOP ACTIVITIES
V (cont)- Buildup		<p>Themes, directed to the resistance force, emphasize the rules of engagement. The rules should call special attention to targets whose destruction would impact adversely on the civilian population.</p> <p>The PYSOP campaign continues to stress and assure the success of the resistance force and allied operations.</p> <p>PSYOP must impress resistance leaders that producing favorable reactions among the populace is vital. (This PSYOP program must strongly impress upon them the need to indoctrinate their followers with the need for proper individual and official conduct toward the population. It must also point out the need for stringent disciplinary action against offenders.)</p>
VI Combat Employment	<p>Successful small-scale combat operations have attracted many recruits. The resistance force is now fully developed and full combat operations planned. Due to enemy propaganda, disruption of daily life, and destruction of property, many members of the populace do not understand the reasons for the resistance force's operations. The enemy is actively engaged in reprisals and counter guerrilla operations.* This phase continues until linkup with conventional forces or until cessation of hostilities.</p>	<p>PSYOP must support and exploit the combat capability of the resistance forces.</p> <p>Current propaganda efforts continue. Themes and symbols are directed at various target audiences.</p> <p>Resistance Movement: Assurance of resistance force success over the enemy is stressed. Emphasis is placed on the inevitability of complete victory.</p> <p>Populace: The major themes are nationalism and the support of the resistance movement.</p> <p>Guerrilla Forces: Motivational and indoctrination campaigns are increased. Emphasis is placed on the ability of the guerrilla forces to defeat the enemy; the enemy's frustration in counter guerrilla operations is exploited.</p> <p>Enemy Forces: The inevitability of the enemy's death and defeat by the resistance force is emphasized. The fact that the enemy is not safe in any area is stressed.</p>
VII Linkup and Demobilization	<p>Conventional forces have moved into range of designated UWQAs and linkup operations are imminent. Liaison parties (which include PSYOP personnel) from the SFOB have been attached to the conventional force headquarters with plans for PSYOP to support the linkup and demobilization of the resistance force. SFOB prepares and coordinates plans with the conventional tactical ground commander. Because of its extreme sensitivity and importance, plans for demobilization must begin in the early phases of operations and be continuous.</p> <p>When the resistance force is no longer needed, higher headquarters will order its disposition, to include demobilization. The practical problems of nationalization, i.e., political, economic, social, ethnic, racial, religious, and military, are surfaced.</p>	<p>PSYOP propaganda and actions (campaigns) support the linkup and the subsequent demobilization.</p> <p>Linkup: Information is widely distributed in the UWQA to prepare the populace to cooperate fully with the conventional tactical forces. The public is urged to remain in place in order not to hinder operations that will bring hostilities to a successful end.</p> <p>Resistance leaders are briefed on the importance of close cooperation with tactical force commanders.</p> <p>The resistance force is psychologically prepared to be incorporated into the national army or to be demobilized.</p> <p>Resistance leaders and guerrilla force commanders are psychologically prepared to accept new leadership from the conventional force on linkup.</p> <p>Troop commanders and staff officers inform the troops of the importance of proper individual and unit conduct.</p> <p>Demobilization: A PSYOP campaign is implemented to explain the demobilization process.</p> <p>The campaign provides for the orderly transition of the resistance force to peaceful civilians, preventing the formation of quasi-military or political groups in conflict with the objectives and policies of the recognized government.</p> <p>Loyalty to the post-hostilities government is stressed.</p>

*NOTE: PSYOP are offensive; they are not defensively reactive to enemy reprisals or actions designed to discredit the resistance force.

Chapter Seven

PSYOP IN SUPPORT OF SPECIAL OPERATIONS

COVERT OPERATIONS

Covert PSYOP are normally not a function of US military PSYOP elements due to their political sensitivity, extensive required compartmentation, and normal execution as a component of higher level special operations and planning. Covert PSYOP require exceptional coordination, integration, and direction. They do not disclose their source. The operations are planned and conducted in such a manner that the responsible agency or government is not evident, and if uncovered, the sponsor can plausibly disclaim any involvement.

To achieve maximum impact and to preclude compromise of the overt PSYOP effort, covert and overt operations should be totally separate operations. Personnel engaged in one type of operation must not be engaged in or exposed to the other. Black and gray propaganda are employed in cover operations. (Black, gray, and white do not refer to anything inherent in the content of the propaganda itself, but indicate methods used to carry out an operation.)



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BLACK PROPAGANDA

Propaganda which purports to emanate from a source other than the true one is known as black propaganda.

Black propaganda is best used to support strategic plans.

Advantages

Black propaganda may originate within or near the enemy homeland, or enemy-held territory, and may provide immediate propaganda messages for a specific audience.

The presumption of emanating from within an enemy country lends credibility to black propaganda and helps to demoralize the enemy by suggesting that there are dissident and disloyal elements within his ranks.

Through the skillful use of terminology, format, and media, messages appear to be a part of the enemy's own propaganda effort, making the enemy appear to contradict himself, and forcing him to mount an expensive, difficult, and exploitable counterpropaganda campaign that highlights the original black propaganda message.

The covert nature of black propaganda and the difficulty of identifying the true source also hinder the enemy's counterpropaganda efforts.

Disadvantages

Stringent and compartmented precautions are required to keep the true identity of the source hidden.

As covert PSYOP seldom use regular communications channels and must copy enemy characteristics, they are difficult to coordinate with the overall PSYOP effort.

Covert operations may be difficult to control because covert PSYOP operating agencies are decentralized.

Stringent security requirements and long-term campaign plans limit flexibility.

These operations are extremely vulnerable to discovery, manipulation, and elimination (of equipment and personnel) when operating within enemy territory.

These operations normally require special personnel, procedures, and equipment available from US agencies outside the US Army.

GRAY PROPAGANDA

Propaganda which does not identify with and cannot be identified with a source is known as gray propaganda.

Advantages

Skillfully used, gray propaganda can:

- Gain acceptance by avoiding the stigma of being "propaganda."

- Use unusual themes without reflecting on the prestige of the originator.

- Introduce new themes based on assumed vulnerabilities without identifying the true source. It can, therefore, be used for "trial balloon" purposes.

Disadvantages

- It is limited by the difficulty of keeping its origin unknown yet authoritative.

- It may be vulnerable to critical analysis, thereby losing effectiveness and making it highly susceptible to counterpropaganda.

COVERT RADIO OPERATIONS

Clandestine radio is a major medium for dissemination of black and gray propaganda. The radio transmitter is normally operated by indigenous personnel of the target country or by third country nationals. As US military personnel may have an advisory role in covert radio operations, they should be aware of the inherent vulnerabilities of this medium:

- All radio communications are susceptible to detection, identification, and location by enemy direction-finding equipment. Consequently, when operating in enemy territory, the operation must be flexible enough to allow displacement of the transmitter.

- Mobile transmitters are normally low-powered and so must be near the target audiences, or a higher powered conspicuous antenna system may be required. In addition, their power source, whether AC or DC must be maintained.

TACTICAL DECEPTION

Psychological operations have a major role in supporting tactical deception operations, which essentially are unique psychological operations. The basic targets of tactical deception operations are commanders and their staffs, whose perceptions and subsequent actions will determine the success or failure of these operations.

PSYOP support tactical deception operations by disseminating information that supports or confirms the deception story and its objectives. In order to lend effective support, it is essential that PSYOP personnel coordinate at all levels of command in the planning and execution of these operations, primarily with the G5, G2, G3, and commanders.

Propaganda supporting tactical deception operations is disseminated by a mix of all available and appropriate media and means. Support is rendered by employing tactics, techniques, and procedures that mislead the targets. For example, in night operations this can take the form of using loudspeaker teams to mislead or confuse the enemy by producing sound effects simulating battlefield noises and movements. PSYOP units can publish leaflets, pamphlets, posters, and newspaper items, and use a mix of all other media and means, including interpersonal communications and rumor, that will assist in achieving tactical deception objectives.

The national unit aspect of tactical deception operations can be assisted by judicious use of PSYOP media.

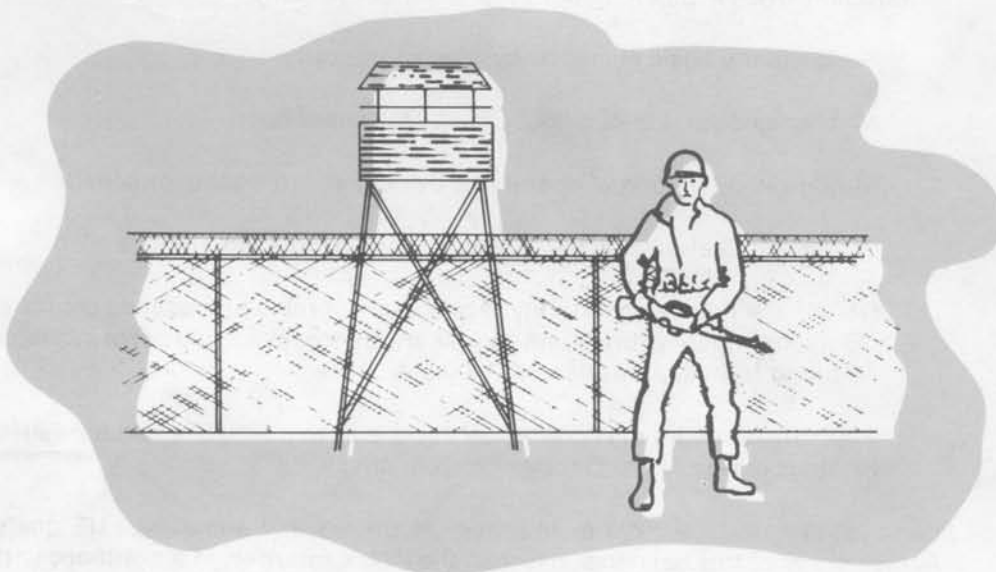
*Chapter Eight***8**

PSYOP IN SUPPORT OF PRISONER-OF-WAR AND CIVILIAN INTERNEE PROGRAMS

RESPONSIBILITIES

In accordance with US policy and international law, care and custody of prisoners of war (PW) and civilian internees are command responsibilities. The Staff Judge Advocate is responsible for providing guidance and staff assistance concerning the application of treaties and the law of war. The Provost Marshal at each level of command is responsible for the development of policies, plans, and procedures. The PW camp commander is responsible for all activities conducted within the PW camp.

The degree of PSYOP support required in the conduct of PW activities may be minimal or more extensive, dependent upon DA policy and other factors attendant on a specific conflict and PW attitudes in a given camp.



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PSYCHOLOGICAL OPERATIONS

The general objectives of PSYOP in support of PW and civilian internee programs include:

Conditioning individuals to accept camp authority and regulations during internment. The resultant smooth operation of the camp:

Supports the basic custodial mission of the camp.

Minimizes diversion of combat troops for guard duty.

Minimizes disruption of operations by activist pro-enemy prisoners.

Provides a useful basis for surrender appeals to enemy troops.

Denies the enemy opportunity to make unfavorable propaganda claims of US mistreatment of prisoners-of-war and internees arising out of incidents resulting from suppression of PW disturbances.

Supports US policy of encouraging the enemy to treat US prisoners well (at least according to the Geneva Conventions).

Persuading individual PWs or internees to understand and accept US goals. Achievement of this objective may lead the PW or internee, in accordance with US policy and international law, to:

Assist the in-camp PSYOP program.

Aid PSYOP aimed at other populations.

Contribute to the maintenance of order and discipline within the camp, and nullify hostile activity by pro-enemy activities.

Become, after repatriation, a supportive element of US objectives.

OPERATIONS

PSYOP personnel should work with interrogation teams. When applicable, interrogation personnel assigned to PSYOP FC (Current Intelligence) teams may be used to conduct interrogations and gather intelligence needed for media and operations. Timely intelligence for PSYOP use should be obtained as soon as possible after capture of prisoners of war. Prisoners of war, internees, defectors, and line crossers are representatives of broader target groups. They are, therefore, sources of intelligence for target research and analysis and can be used to pretest PSYOP material.

PRISONERS OF WAR

International law determines who will be given prisoner-of-war status. This category (PW) does not include all hostile personnel detained by US forces, but it does include many kinds of personnel other than members of the regular armed forces. A detailed definition is given in AR 633-50.

Treatment of prisoners of war is governed by the Geneva Convention Relative to the Treatment of Prisoners of War of August 12, 1949 (GPW). The GPW is a matter of international law. It is a treaty to which the US is a party, and, as such, it is a part of US law binding on the US Armed Forces.

Certain provisions of the GPW directly affect psychological operations by setting limits for permissible treatment. Pertinent articles are quoted below:

Article 7: Prisoners of war may in no circumstances renounce in part or entirety the rights secured to them by the present Convention.

Article 13: Prisoners of war must at all times be humanely treated... Likewise, prisoners of war must at all times be protected, particularly against acts of violence or intimidation and against insults and public curiosity.

Article 14: Prisoners of war are entitled, in all circumstances, to respect for their persons and their honor.

Article 38: The detaining power shall encourage the practice of intellectual, educational, and recreational pursuits.

Beside observing the prohibitions of GPW, PSYOP should exploit compliance with the requirements and proscriptions of GPW for specific kinds of treatment, including, but not limited to:

Healthful living quarters (Art 25, 29).

Clean messes and adequate rations (Art 26).

PW clothing suitable to the climate; that is, clean and in good repair (Art 27).

Camp canteens where PW may secure foodstuffs, soap, tobacco, and ordinary articles of daily use (Art 28).

Medical facilities and medical care (Art 30, 31).

Freedom of religious observance (Art 34).

Gainful employment of PW in suitable working environments at work having no military character or purpose (Art 50, 51).

Pay for work performed (Art 62).

For further information concerning handling of prisoners of war, consult Standardized National Agreements (STANAGs) 2033, 2044, and 2084.

POLICY AND PLANNING CONSIDERATIONS

Specific policy guidance governing the establishment, objectives, and conduct of PW and internee PSYOP programs is contained in Department of the Army directives published with the outbreak of hostilities. Appropriate guidance is forwarded through command channels to the PSYOP unit committed to the program and to the camp commander for implementation.

Prisoners of war, particularly after extended internment, constitute a highly volatile and sensitive security problem of a nature which is completely unique to PW camps. All PW doctrines and camp activities must therefore be evaluated critically in the light of this problem.

Procedures and programs which have been generally successful may have unexpected and undesirable results if applied without appropriate adjustment to special circumstances and individual target audiences.

GUIDANCE TO IMPLEMENT ADJUSTMENTS

Guidance at all levels of command to implement adjustments should be clear enough so that consistency is maintained, and there is no misunderstanding at subordinate levels. At the same time, guidance should be flexible enough so that subordinate operators are not overly restricted in adapting command guidance to the characteristics of the particular target population. Operations and procedures must be responsive to changes in the situation, to new information, and to lessons learned.

LIMITATIONS

Strict attention must be given in the planning process to limitations (explicit and implicit) in national policy and international law pertaining to the treatment of prisoners of war. United States policy is to place a broad interpretation on the Geneva Convention pertaining to prisoners of war, and to establish protection in excess of the minimum required by a narrow view of GPW.

PROHIBITIONS

Prisoners of war will not be used, even voluntarily, to contribute directly to PSYOP in such ways as preparing signed statements or tape recordings. Individual identifiable photographs implying active contribution to propaganda will not be used.

PROGRAMS FOR PRISONERS OF WAR

Subject to security considerations and camp discipline, PWs and internees are encouraged to participate in information, education, and recreation programs and activities. Programs include formal and informal instruction in basic educational subjects and vocational training.

INFORMATION PROGRAMS

Information programs are a sound basis from which to initiate other types of programs. Straight news reports may be the best first step in a phased operation aimed at pro-enemy and activist PWs and internees. Reports of enemy failures or losses should be published, posted, and broadcast. When possible, use enemy news sources without commentary. Permit the PWs to draw their own conclusions.

EDUCATION PROGRAMS

From a PSYOP point of view, appropriate courses for a PW and internee education program include:

- A history of the war and its causes.

- A comparison of the origins and developments of a democracy as opposed to a totalitarian form of government and ideology.

- Life in the free world.

- Leadership development and skills in group action.

- Reconstruction plans and the way they affect prisoners of war.

VOCATIONAL TRAINING

Vocational training, e.g., technical, agricultural, etc., is an important part of the education program.

Such training will assist the PW or internee in preparing for repatriation. This may motivate him to perform well and give him more favorable attitudes toward the United States.

At the same time, the program may supplement the camp food supply, contribute to camp construction and maintenance, and reduce the costs of internment to the United States.

Some nationalities or groups may resist many types of vocational training. To insure success, programs must be based on target analysis.

INFORMAL PROGRAMS

The informal program reaches into all phases of PW everyday life. Subject to the limitations discussed earlier, and the wishes of the PW compound commander, PSYOP informal programs should be carefully designed and conducted to achieve the objectives of the camp commander and the PSYOP program. These programs are continuous throughout internment. The general treatment of the PW and internee is a major part of the informal psychological operations program.

IMPLEMENTATION OF PSYOP PROGRAM

In general war, a PSYOP battalion (prisoner of war) may support the theater military police prisoner-of-war command.

The battalion advises and assists PW camp commanders in planning, implementing, and supervising the PW education program. It also assists in:

- Interrogating PWs for information essential and peculiar to PSYOP.

- Pretesting PSYOP material for possible effect before dissemination.

- Determining the effectiveness of selected PSYOP programs.

USE OF CIVILIANS, PW AND CIVILIAN INTERNEES

Where languages other than English are spoken, language-qualified teachers from allied countries are normally employed. This may, however, be undesirable when the available nationality is resented by the target population.

Carefully selected, qualified PW and civilian internees may be used as instructors as long as they are under the supervision of camp authorities and their use is in accordance with US policy and international law. This is desirable psychologically, because it involves the target population in the program. However, security considerations and lack of supervisors may curtail this type of program.

ANTI-ENEMY ORGANIZATIONS

In inclosures classified as "political defectors," "probable anti-enemy," or even "nonpolitical," formation of anti-enemy groups should be encouraged, but their activities controlled. Such groups make it easier to channel the energies of the PWs or internees to US purposes. Such groups also tend to counter the activities of pro-enemy groups and agitators.

Anti-enemy PWs and internees can be used as advisors in the administration, education, and exploitation of neutral and pro-enemy PW and internees.

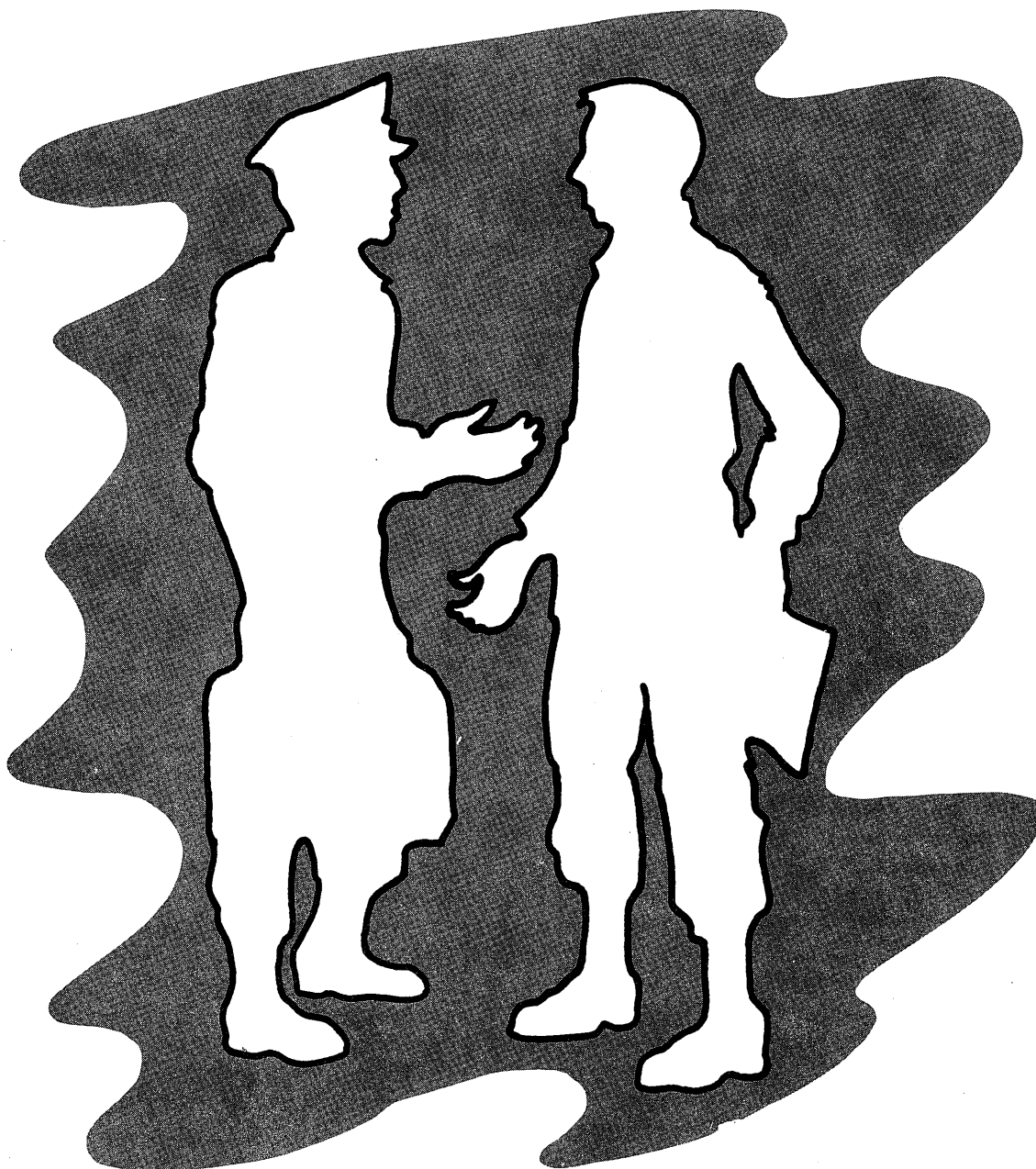
The training and performance of PW and internee instructors and other cooperating personnel must be closely monitored to insure that hostile elements in the group are not subverting the effort and using training sessions and facilities to harm US interests and to disrupt camp discipline.

Active pro-enemy PWs may deliberately destroy equipment, waste supplies, sabotage projects, subvert camp authority, and undermine US influence and control.

Educational and PSYOP equipment and facilities, such as classrooms, meeting rooms, and reproduction and sound equipment, must be secured to assure that they are not being used for anti-US activity. Sports and vocational training equipment should be controlled so that it cannot be converted to weapons.

PSYOP officers participate in contingency planning for control of disturbances in camp compounds. Designated PSYOP units participate in rehearsals and disturbance control.

PART TWO



PSYCHOLOGICAL OPERATIONS FOR THE PSYOP COMMANDER/ UNIT/STAFF

Chapter Nine

BEHAVIOR FACTORS

The psychological operator's key to success is knowledge--knowledge of why people behave as they do and how to persuade them to behave in a more desirable manner. This chapter presents a treatment of this subject. Technical terms, which are not self-explanatory, are found in appendix H.

The target audience is guided and limited by social and psychological factors. The psychological operator must recognize the factors influencing individual/group behavior, use these factors to gain the attention of the target audience, and communicate with and motivate the target audience to alter their behavior and attitudes. The principal psychological factors to be examined are **perception, motivation, frustration, and attitude**.



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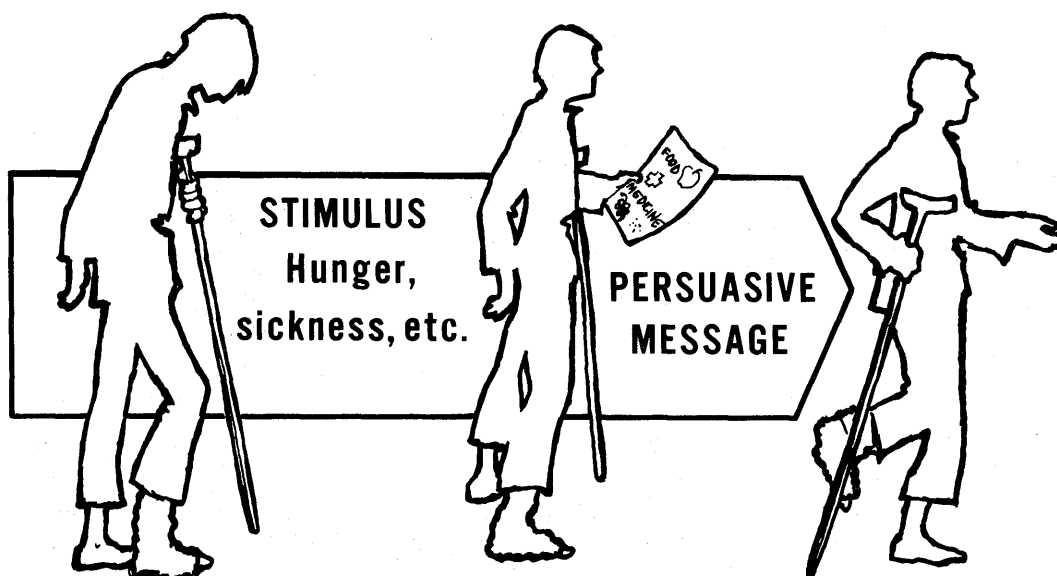
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PERCEPTION

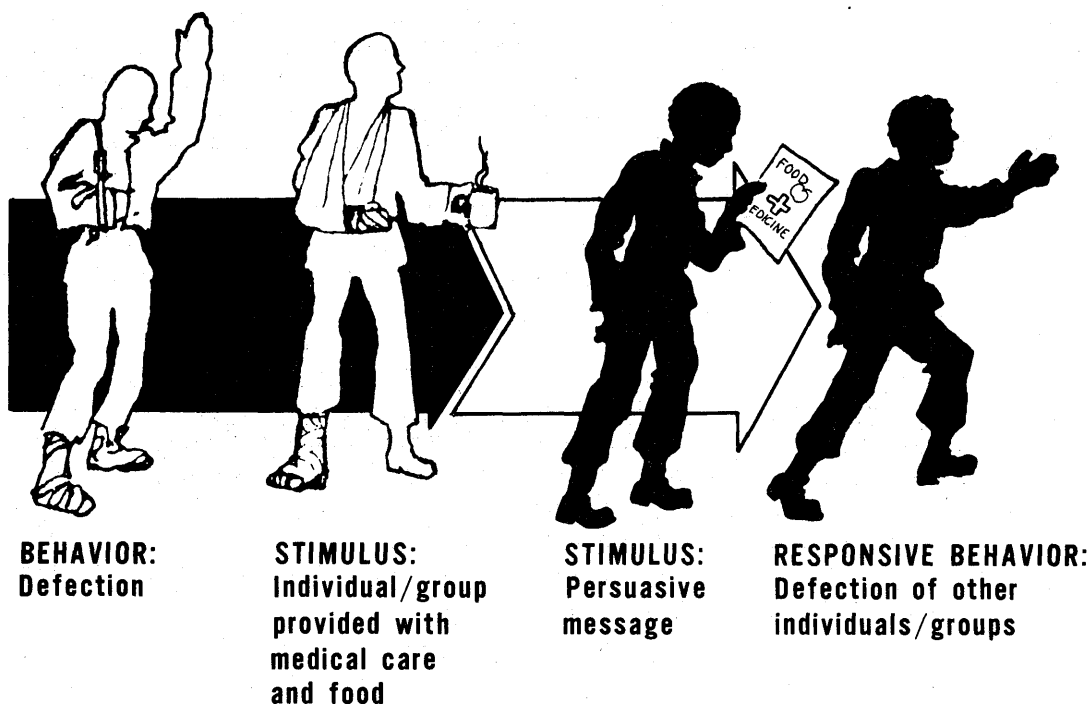
The perception of the target audience is influenced by biological (or physical) capacities, frames of reference, learning, past experiences, and cultural and social environments. Knowing these influencing factors helps in determining the stimulus which will affect the target audience.

The individual is in contact with his environment through the general sensory systems. The sensation acquired by stimulating the sensory systems is influenced by cultural preferences. For example, as the result of his cultural background, an individual will exhibit a preference for a given color (visual), a particular style of music (aural), a certain odor (smell), a special taste, and/or a particular touch. These sensory preferences enhance group unity and individual identification with the group. They have the power to act as a stimulus, causing desirable behavior to occur.

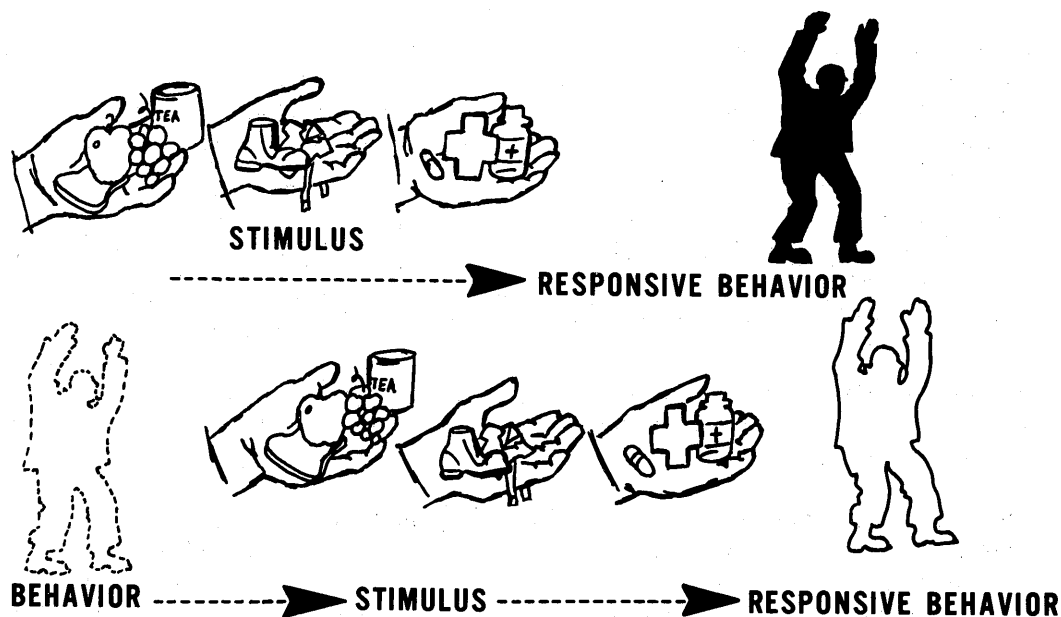
In determining the influencing stimulus, the psychological operator has two approaches. The first approach involves defining the behavior to be changed and identifying the cause of that behavior. By closely examining the target audience's language, customs, mores, tradition and habits (folkways), laws, and values, the behavior and its cause are properly interpreted within the target's culture.



The stimulus may not be found in the above cultural variables. To overcome this problem, a second approach suggests the behavior be observed and numerous stimuli be presented to an individual or group to determine which stimulus causes a desirable response. By providing medical care, food, or other stimuli after an individual or group has defected, other potential defectors will be prompted to defect, expecting medical care, etc.



In some instances neither the stimulus (cause) nor the behavior are observed, leaving the responsibility of presenting a stimulus and inferring a responding behavior to psychological operations personnel. The stimulus (cause) must be consciously evaluated (perception) after it is received by one or more of the sensory systems.



The key to influencing the evaluation process is found in the presentation of an attention-gaining sensory image. The attention-gaining factors may be categorized into those perceived externally and those perceived internally. The external attention-gaining factors are intensity and size, contrast, movement, repetition, and novelty. These factors when employed by the psychological operator may stimulate the target audience to a more desirable behavior.

The **intensity** of a loudspeaker or leaflet operation can strongly affect those near the loudspeaker or see the leaflet. The attractiveness/repulsiveness of the sound or the appealing/shocking color of a leaflet gains attention. **Size** is relevant. The fundamental principle is that the most stimulating intensity or size is defined by the culture of the audience.

Perception of a stimulus is often influenced by the degree of **contrast** between an object and its background. The conspicuous difference may be used to gain the attention of a target audience. Contrast may be created through differences in color, shape, or intensity between the propaganda and its background or between the propaganda and other disseminations. For example, orange leaflets are attention gaining when the operation is conducted in green jungle foliage. The factor of contrast is easily employed, but an effective contrast is dependent on the cultural definition of the degree to which contrast is tolerable.

The factor of **movement** involves the stimulation of the visual and aural senses. To gain the attention of a target audience, a perception of motion must be created. The best possible attention-gaining situation is the creation of movement against a motionless background. This factor may be employed for the visual sense by a television production, or by movement on printed matter created through suggestive eye direction or mechanical eye direction. Movement can be created for the aural sense by the use of a loudspeaker to duplicate the movement of a troop unit (cover/deception).

The attention-gaining factor of **repetition** is one of the most difficult to employ. The target audience's probability of perception is increased by repetition as well as their sensitivity to a particular sight or sound, but prolonged repetition may reduce the attention-gaining potential of the stimulus. To prevent this, an intimate knowledge of the culture must be available to sense when a stimulus is losing its potential.

A stimulus may be quickly perceived if it is a new sight or sound and is markedly different from the old, more familiar stimulus. It is the innovative approach of the psychological operations personnel that forms the bounds of **novelty**, for a new, markedly different stimulus may be the one perceived by the target audience.

The internal attention-gaining factors are motivation and set. In contrast to the external factors that attempt to create a predisposition, these factors concentrate their attention-gaining potential on the target audience's predisposition to a behavior.

The factor of **motivation** relies on the target audience's conscious, learned, and goal-directed predisposition. Members of a target audience may be predisposed to acquire security for their families. By explaining the benefits of defecting in a persuasive message, the attention of members of the target audience may be gained and this predisposition reinforced.

The **set** is an unconscious vague awareness that focuses the attention of the individual or group. For example, refugees wandering aimlessly along the main line of communications, suffering from cold, hunger, and other physical discomfort, will be attracted to a persuasive message that offers warm clothing, lodging, food, and medical care and will not be attracted by appeals to return to their homes or to conduct sabotage.

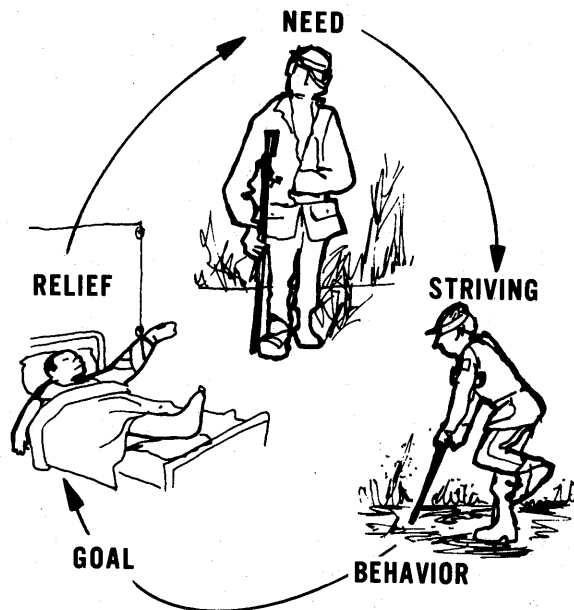
MOTIVATION

The psychological operator by utilizing the guiding components of perception can create **motivation** toward more desirable behaviors (i.e., individual defections or group surrender).

Research must begin with a close study of the target audience's culture. The research provides detailed knowledge of their needs, whether the needs are unconscious predispositions to sustain life (drives) or drives consciously learned (motives). The needs may not be perceived by the target audience, or its members may not know how to satisfy them. Psychological operations personnel are responsible for guiding and/or stimulating perception of the needs that are found in the form of drives to more desirable behaviors and for redirecting and/or stimulating perception of needs/motives to other more desirable behaviors. A behavior to relieve hunger may be stimulated and guided by a persuasive message. The message may state where and how food can be acquired if the individual or group surrenders. In each instance the need creates a behavior that is goal directed; an individual or group is driven or motivated toward culturally defined goals; i.e., a soldier is persuaded to surrender and receive food to satisfy his hunger.



The needs of an individual or group are continuously appearing in the form of drives and motives to stimulate behavior toward a goal and the simultaneous satisfaction of a need. As a need is satisfied, other needs may appear to be guided, redirected, and/or stimulated. The appearance of other needs begins the motivational cycle anew as shown below:



Motivation begins with a need. This gives rise to instrumental behavior which, if successful, leads to a goal. This, in turn, relieves the need.

FRUSTRATION

The target audience is not always successful in attaining its goals. When a desired objective/goal is not achieved, an individual or group tension/inner conflict is created: **frustration**. It is the task of the psychological operator to recognize the sources and results of frustration. With a deep understanding of these factors, frustration can be used to channel the target audience into more desirable behaviors.

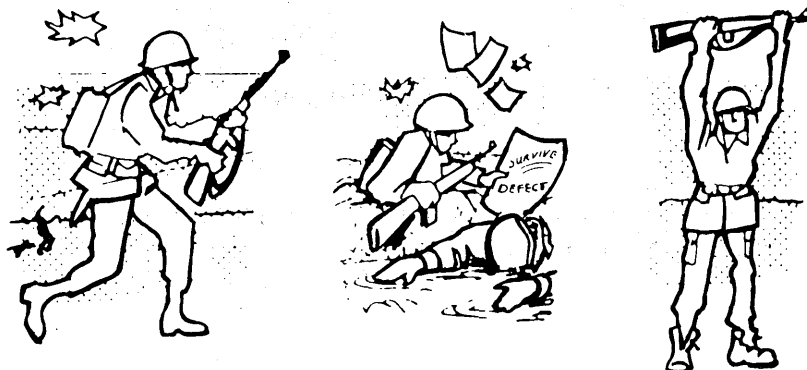
The individual's or group's frustration comes from three sources: environment obstacles, physical and/or mental limitations, and motivational conflicts.

The individual or group may perceive, unconsciously or consciously, a need for food, ammunition, and medical supplies. The psychological operator may utilize environmental obstacles to block access to these needs, such as communicating that friendly troops have captured the target audience's supplies or are otherwise preventing the target audience from satisfying its needs. The environmental obstacles are of benefit only if the obstacle channels the target to other need-satisfying behavior; i.e., defection or attacking a planned ambush site.

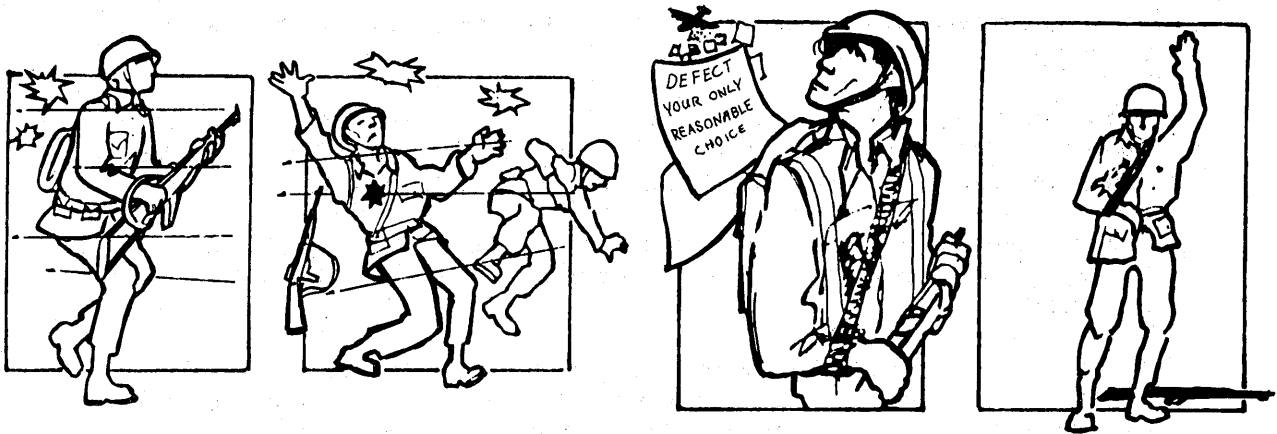
Members of the target audience may perceive a need but be physically and/or mentally unable to achieve satisfaction of the need. The persuasive approach to achieve needs must be physically and mentally accessible to the target audience to channel need-satisfying behavior. This implies a psychological operations message must be composed of the culturally determined language and words. The message presented must be culturally acceptable, it must be presented on the target's intellectual level, and any action required must be within its physical capabilities.

The internal tension or motivational **conflict** of the individual or group arises when two or more equally important needs are incompatible with its goals; when two or more undesirable but necessary needs are incompatible with its goals; or when one need is desirable and the other is not and the goals are incompatible, yet each need requires simultaneous satisfaction. These conflict conditions are categorized as approach-approach conflict, avoidance-avoidance conflict, and approach-avoidance conflict.

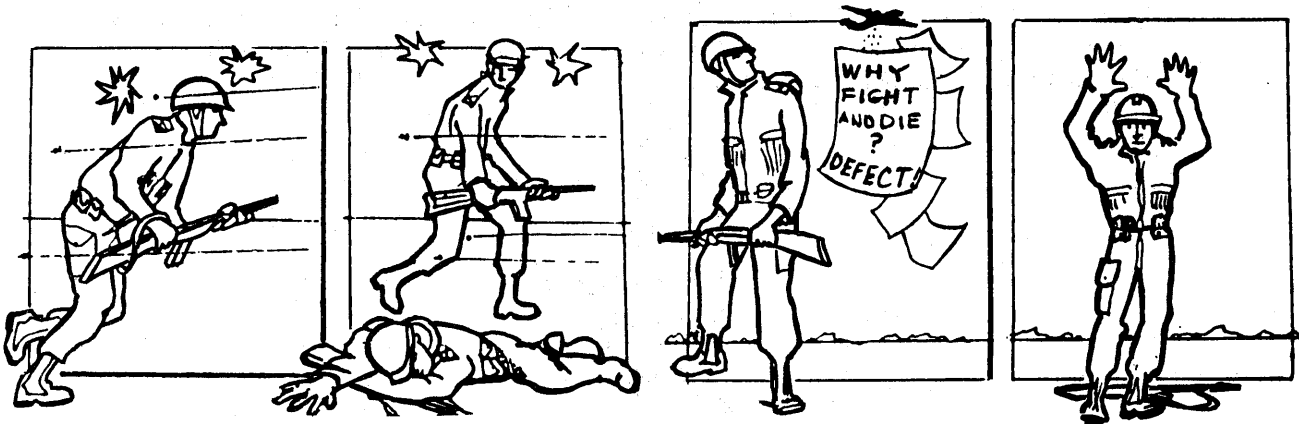
Under the condition of **approach-approach conflict** in which the needs are equally desirable with incompatible goals, one **need** must be presented as more important than the other, or one **need** as undesirable while channeling the target audience's need-satisfying behavior. Similarly, the incompatibility of goals can be brought to the attention of the audience to reinforce the need selected for a persuasive message. A group, for example, may desire to totally commit itself to fighting for its country and equally desire to survive. Both needs are equally important to the group, but the psychological operator may imply the goal of fighting is incompatible with the goal of surviving and suggest the group survive by defection rather than die fighting.



The condition of **avoidance-avoidance conflict** presents two undesirable needs and incompatible goals to the individual or group. For example, the individual may find it undesirable to fight (need) and undesirable to die at the hands of a firing squad for cowardice (need). Likewise, the goals of not fighting and not dying due to cowardice are incompatible. A persuasive message may imply that the individual should defect and avoid fighting; if he decides not to fight, he will die.



The **approach-avoidance conflict** is a condition in which there is a desirable need, an undesirable need, and a desirable goal. The individual may desire to fight (need) for the honor of his country but finds dying to be an undesirable aspect of fighting. The goal to survive brings fighting for honor and imminent death as a result of fighting into conflict. The psychological operations personnel may appeal to the individual's desire to survive, building up the need to survive and downgrading the need to fight.



By channeling need-satisfying behavior toward defection as a means to survive and avoid fighting, the PSYOP mission is successful.

The results of frustration can be constructive for our forces, disruptive for the individual or group, or manifested in defense mechanisms which draw the individual away from persuasive approaches.

The constructive results of frustration are:

If an individual or group is persuaded to perceive needs which neither he nor his group can satisfy, the individual may **intensify** striving to escape from the group or to make changes in the group.

The individual or group may be persuaded to such an extent that **the means are changed to goals**. Defection may have been a means to survive, but the persuasive argument may be so strong the individual or group may defect not for survival but to defect.

The frustration may cause the individual/group to **substitute goals**. This is a key result for the psychological operator if the substitute goals are provided by him (i.e., defection or surrender).

The individual or group may be persuaded by the psychological operator to **redefine the situation** (i.e., battlefield environment) to one that is undesirable, if not untenable. In which case, the target may be persuaded to defect or become subversive.

The disruptive results of frustration are:

If the individual is not given a means to satisfy his need/goal within his own culture, his frustration may be channeled **against himself**, his group, or into aggression against our forces. It is the responsibility of the psychological operations personnel to provide a means to satisfy his need/goal and thereby subvert the individual or group.

The individual or group may be blocked from satisfying needs/goals to such an extent **escape** is the only alternative. By knowing the needs of the individual or group, a persuasive message may offer to satisfy needs/goals as additional motivation to escape/defect.

The frustration of the individual or group may result in an increase in **anxiety/conflict**. By recognizing anxiety-producing situations, a means of relieving the conflict can be provided and a more desirable behavior acquired.



As anxiety/conflict increases, the group will unconsciously constrict its environment to protect itself from dangerous instinctual demands and conflicts. The protection is offered in the form of defense mechanisms which repress some aspect of reality and reconstruct that aspect in a manner helpful to the group's enhancement and approval. The objective of the psychological operator is to eliminate the reasons to develop mechanisms or to guide defense mechanisms to more desirable behavior. The most common mechanisms of defense are repression, displacement and sublimation, fixation, regression, projection, denial, reaction, formation, identification, and rationalization.

The individual/group may receive stimulation to perform a certain behavior. Due to the defense mechanism of **repression**, the stimulus and its associated behavior are forgotten and held in the individual's/group's unconscious memory. A defection message may be received, ignored (behaviorally), and held unconsciously due to the dangerous demands and conflicts defection implies.

The defense mechanism of **displacement** is characterized by repression of a source of anxiety/conflict and attributing the tensions to another source. A closely related mechanism, **sublimation**, applies the characteristics of displacement and the characteristic of anxiety/conflict being expressed in other than the routine manner. Displacement could be employed by an individual/group blaming the intolerable living conditions on other individuals/groups rather than the real source, the individual's/group's leader. The mechanism of sublimation could depict the target audience as physically striking out at other individuals/groups rather than using their routine verbal manner of expression.

In another anxiety/conflict ridden environment, the group may defend itself by **fixation**, a temporary or permanent halt to the group's development. This may mean the group will no longer follow the progression of persuasive messages due to the anxiety/conflict they produce.

The mechanism of **regression** results when anxiety/conflict cannot be reduced, forcing the individual/group to suppress the anxiety/conflict and return to a time when the tensions were not present. For example, the individual/group may be subjected to persuasive messages that stimulate the individual/group to think back to more pleasant times and block out the intolerable conditions the persuasive messages revealed.

The tendency of the individual to attach to others the motives which he senses within himself, but might be painful to acknowledge, is labeled as **projection**. A persuasive message could point out the benefits of defecting. The individual may not believe the message; if he were writing a similar message, he would use the same tricks to draw other individuals/groups out of hiding. The individual has, in this example, attached his devious motives to the persuasive messages of others.

The group may attempt to deny the existence of an anxiety/conflict-producing source. By employing the **denial** mechanism, the group may deny the need to defect; to it the problem of poor medical attention no longer exists. This feeling is in opposition to the reality that medical attention remains poor.

The anxiety/conflict produced is often repressed and new behaviors are developed to reflect an opposite side of the individual/group. This defense mechanism, **reaction-formation**, is characterized by extreme behavior inappropriate to the situation. This protective mechanism, when expressed in a persuasive message to defect and live for another day, may be met by an increase in aggressive resistance. The individuals want to

defect, but this is so foreign to their commitment that they must repress the desire and fight with renewed resistance.

The defense mechanism of **identification** leads the individual to repress his anxiety/conflict and model/imitate someone who is feared, loved, or admired. These factors could portray an individual/group repressing his inadequacies and imitating the successful approach of a feared leader.

The individual/group can protect itself by **compensation**; that is, failure is repressed and overachievement in a related skill is pursued. Failure to be a marksman could lead to the individual's/group's overachievement in the skills of supply, first aid, or communications.

By using the defense mechanism of **rationalization**, the group attempts to justify its behavior and presents itself to be righteous to both self and other groups. Through this protective mechanism, the group can defect honorably if the justification is accepted as best for the group or country.

ATTITUDE

The individual/group is so structured by culturally determined sensory perception, stimuli, motivation, and frustration that the psychological operator must find an influential key to their culture. This key is attitudes which positively or negatively orient the individual's perception, motivation, and frustration.

Attitudes are important for they influence reactions, are reflected in behavior, exert a consistent influence, are subject to change, and subsequently influence behavior. More specifically, attitudes influence an individual's/group's orientation to his/its culture. By closely observing the orientations, a consistent influence can be observed in a wide variety of behaviors directed toward someone or something. Conversely, as attitudes are reflected in behaviors, behaviors reflect the attitudes of an individual/group. A primary objective is to identify the key attitudes of a group that when changed will make it vulnerable and susceptible to a persuasive message.

The influence of attitudes can be distinguished on three major levels: the cognitive, the emotional/affective, and action/behavioral.

- 1 The **cognitive level** is the inner orientation of an individual/group which serves to construct a picture of someone or something. The orientation is particularly concerned with the perceptions, beliefs, and the common traits attributed to someone or something. The individual/group may picture others as lazy, mentally inferior, unpatriotic, treacherous, ruthless, bloodthirsty, or cowardly.
- 2 The attitude may orient the individual/group to express certain feelings when a given stimulus is presented. The feelings, found on the **emotional level**, may be presented by fear, anger, hatred, contempt, envy, pity, sympathy, or love. The appearance of a massive force may stimulate the individual/group to invoke the emotions of fear, anger, or hate.
- 3 The **action level** for the individual/group refers to the tendency or disposition to act. A persuasive message which exposes the intolerable living conditions may create a tendency for the individual/group to defect.

Having explained the concepts of perception and its attention-gaining factors, motivation and its origin and goal, frustration and its sources and results, they must be applied to influence foreign

policy decisions, the determination of military missions, the ability to govern, the ability to command, the will to obey and support, and the will to fight. Despite the magnitude of the task, the principles can be expressed in a single term, attitude change. This collective term represents the relationship between the psychological operator's desired attitudes (and more desirable behavior) and the individual's/group's attitudes as well as the degree of receptiveness between the individual/group and the psychological operator (change agent). The psychological operator may bluntly suggest the individual/group accept defection as a reasonable alternative to fighting, an action for which the individual/group has a negative orientation (attitude). In this situation, receptiveness has not been cultivated in the individual/group and an attitude change has been suggested that is in direct opposition to the individual's/group's orientation.

The more subtle approach to attitude change is expressed by the concepts of compliance, identification, and internalization.

The psychological operator may frequently employ coercion or force to imply the individual/group will be rewarded or will gain approval and avoid punishment/disapproval if his behavior complies with that specified by the psychological operator. The **compliance approach** allows the desirable attitude to replace the more traditional attitude; if a reward is not provided as implied or punishment does not cease, the individual/group will change back to the traditional attitude and behavior. This approach insures short-term behavior compliance but may produce a negative attitude in the target audience.

The **identification approach** depends on the receptiveness of the individual/group and the gratifying relationship between the psychological operations personnel and the individual/group. Under ideal conditions, the individual/group models itself after the psychological operator due to the desirability of the relationship. The willing commitment involved in this approach to change is more likely to persist for it is not dependent on reward or the avoidance of punishment.

The most significant attitude change, yet the most difficult to achieve, is internalization. The **internalization approach** identifies attitudes that can be used to accomplish our goals yet be consistent with the accepted attitudes of the individual/group. If consistency is gained, long-lasting individual/group attitudinal and behavioral changes will result.

In support of the approaches to attitude change, social support, support of experts, and support of experience can be used to lend credibility to attitude-changing messages.

The social pressure brought by **social support** forces the individual/group to conform to a more desirable attitude if a reward of social acceptance, prestige, increased status, esteem, praise, achievement, and recognition is expected. It is the psychological operator's objective to amass social support and build on that support; i.e., persuading a group to defect and using their name to illustrate to others the rewards received for their behavior.

The **support of experts** that are knowledgeable or powerful provides the stimulus for individuals/groups to change their attitudes. The psychological operations personnel can quote these experts or enlist their assistance as key communicators (see chapter 10) to bring about persuasive attitude changes.

The **support of experience** is the most powerful tool available to use in attitude change for it calls upon individual/group perceptions to point out their attitude is consistent with the attitude and behavior sought by the psychological operator.

*Chapter Ten***COMMUNICATING**

Communications can arouse needs and emotions and persuade a target audience to change attitudes and subsequent behavior.

This chapter will provide an understanding of communications and their importance to PSYOP.

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10

THE COMMUNICATION PROCESS

Communications, the exchange of information and ideas, is possible only to the degree that individuals have common knowledge and interpretation of the language used. It is the primary PSYOP method for arousing needs and emotions, and changing opinions and attitudes.

Social communication is the process of exchanging ideas, sentiments, and beliefs, usually by use of language, but also by visual representation and imitation. In human groups, it is largely a process of social interaction.

Words, the basic component of language, permit the expression of ideas and play a basic role in changing the environment, thus affecting culture and society. The planned use of words can bring about lasting changes in behavior, concepts, attitudes, and emotions.

Language, as the means of communication, performs three vital functions in every culture:

The most basic function is informing individuals and groups by using the stable and commonly agreed upon meanings of words, symbols, or actions.

The psychological effect of language is an extension of the informing function. By informing, it arouses the emotions of the target audience and produces a psychological effect on others. It influences them to react with a desired activity or attitude, such as fear, apathy, sympathy, pity, dissatisfaction, verbal confrontation, or aggressive action.

The ritual function creates and reinforces the attitudes strongly associated with particular institutions, such as the church, mosque, temple.

In practice, it is almost impossible to separate the functions of language. The difficulty arises when language has the primary function of arousing emotions and stimulating actions, while the target is led to believe that it is being given the facts about actual events. This is best illustrated in the fields of political and economic discussion where terms such as "liberty," "democracy," "imperialism," and "free enterprise" perform all three functions simultaneously.

In **persuasive communications**, attention must be paid to three important factors: transmission, interpretation, and the communications situation.

Communications must be transmitted and interpreted within the framework of a particular society or culture. Too often, an operator erroneously uses the most readily available means of communications, even though it is not the most effective channel for reaching a particular target audience. Each society is affected differently and in varying degrees by mass media, interpersonal communicators, and the numerous formal and informal groups, such as the family, church, occupational clubs, gangs, and cliques; work, pub, and cafe cronies; professional, art, and cultural societies and colleagues. Each serves a communications purpose within a society, differing in its credibility and impact according to subject matter.

The communications situation must be closely examined. The psychological operator must know who is listening to his appeals, who is looking at his visual and audiovisual propaganda, and who is reading his message. He wants to be certain that the target he wants to affect can be affected by the **communications channel** he intends to use. It is a waste of resources to use radio when newspaper or magazine articles have the greatest impact, or to use printed media when radio has the greatest credibility and effect.

Not only must the communication be based on facts and reality, and the media be appropriate to the audience, but the message must also be appropriate to the situation in which the audience finds itself. The psychological operator must also give thought to the options to act available to the target. The most effective message will be that which makes sense (is rational) to the target audience, furthers the target's self-interest, and is to it moral and ethical. The psychological operator should present his appeals in that light.

The communications process involves four steps: gain attention, hold attention, have an acceptable message, and acquire feedback.

GAIN ATTENTION! Prior to launching a persuasive message, the analyst must be sure the message will gain the attention of his target audience and stimulate perception. This demands a message that will successfully compete against other events, appeals, persuasion, threats, demands, etc. The impact of the message must focus attention on the message and be appropriate for each target. The opening that will gain the interest of the farmer may be completely ignored by the school teacher. The opening that will enthrall the religious leader may leave the union organizer apathetic. If the persuasive message has the desired attention-gaining quality, it will be evaluated by being read, listened to, and being looked at.

HOLD ATTENTION! Once gained, attention cannot be permitted to waver. The target must read it all--listen to it all--or view the entire visual presentation. This requires that the communication be couched in the common language of the target, the language which affects its emotions (individually and collectively). A basic means of accomplishing this is to use words, symbols, and actions similar to those associated with persons whom, in memories of youth, the target recalls as loved and respected authorities; i.e., parents, teachers, friends, clergy, etc.

HAVE ACCEPTABLE MESSAGE! Having been listened to, looked at, or read in its entirety, the message must be accepted. It must appeal to the dominant interests of the target audience, offering THE SOLUTION to the most urgent problems of its members. This requires that the message delineate lines of action appropriate to the target in his or her situation. Propaganda will be most readily accepted when it refers to feasible actions that the target can perform with integrity. The test is a simple one: The propagandist must put himself (figuratively) in the target's situation and ask himself (as the target), "What would I do under these conditions? Accept the message or ignore it?"

Use media that the target trusts and that has the greatest impact. The target will not readily accept messages in media that he or she does not trust nor consider authoritative.

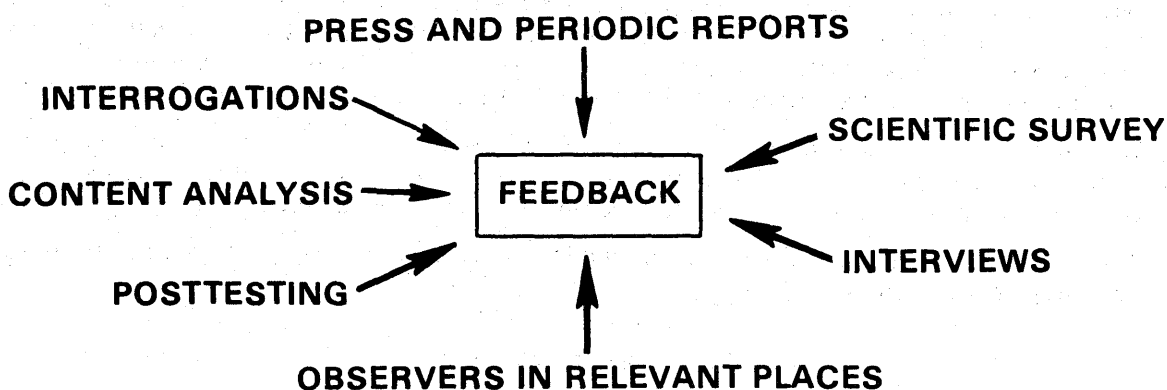
The message must be credible (believable) to the target. But it need not be unbiased in fact. Credibility is in the mind(s) of the individual or group who judge the message in terms of their own experiences, not solely on fact. The message that does not focus on the important interests of the target; does not offer the best realistic solutions to their problems; and is not presented in the appropriate language, in media and format, familiar to and respected by the target, will suffer from a lack of credibility.

The psychological operator cannot know whether his propaganda was incredible, credible with no impact, or credible to the point of affecting the actions and attitudes of the target, as desired, until he receives feedback.

FEEDBACK! Feedback is information that reports the effects, or discrepancies between the intended and actual effect, of a PSYOP campaign. Analysis of feedback should lead to modification of a campaign to improve its effectiveness.

Feedback must be target oriented, considering differences in the subgroups that may constitute a major target group and situational changes which occur with drastic rapidity in time of conflict.

Feedback requires systematic research:



Interviews conducted with carefully chosen members of the target groups should determine campaign results, and if possible the reasons for those results, by seeking factors such as morale, attitudes, overt behavior, and other indicators of the impact of the psychological operator and its propaganda. If the target cannot be reached, informed persons, e.g., refugees, exiles, scholars, reporters, and others intimately connected with and having in-depth knowledge of the area and target, should be interviewed, keeping in mind that each has a subjective point of view. These points of view may be justified, but, nonetheless, they are the basis for biased judgments and statements.

Although other types of feedback indicate success or failure, they will not always tell why a campaign, theme, or message failed or was a partial success. Posttesting will uncover the reason(s) for audience reactions. The techniques of posttesting and pretesting are the same. However, the same persons must not be used.

The propagandist must have total empathy with his target. This does not involve sentimentality nor sentiment. It involves the ability to understand people--the ability to project oneself into the other person's situation and be able to think, see, feel, and reason as he does. This ability is one of the most important requirements in giving common meaning to the message.

The US psychological operator has his message to communicate, but successful communications depend on certain basic requirements:

Personal contact. The success of personal contact with the target audience establishes the effectiveness of communications.

Identifying target audiences. The psychological operations personnel must employ skill in identifying target audiences; in determining their needs, attitudes, vulnerabilities, and susceptibilities; and in selecting the means of communication.

Selecting PSYOP personnel. The criteria for selecting PSYOP personnel should be capability and skill rather than their military versus civilian identification. Neither category has a monopoly on imaginative skill or the ability to influence people.

While the empathetic psychological operator has the skill to put himself into the "role of his target," he must also have the facts to enable him to do so under prevailing conditions. This intelligence must relate to the environment affecting the target. While the physical environment is important, the social attitudes and environment of the target are more important.

To fully understand the process of standardizing and exchanging subjective meanings using words, symbols, or actions, the psychological operator must analyze the components of communication. A means of analysis is a **communication process model** (figure 10-1).

A typical model consists of a stimulus, sender, receiver, message, transmitter, encoding, decoding, feedback, and noise component.

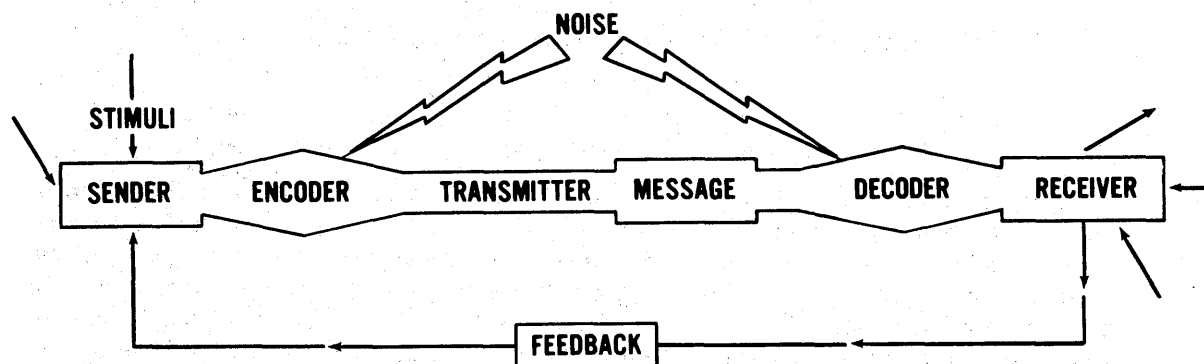


FIGURE 10-1
COMMUNICATION PROCESS

A **stimulus** is any change agent that causes a response.

A **sender** (encoder) is the initiator of the message.

The **receiver** (decoder) is the intended addressee of the message.

The **message** is a word, symbol, or action or a grouping of words, symbols, or actions used and controlled by a sender.

The **transmitter** is the means used for presenting the message; i.e., writing or the human voice.

The **encoding process** is the structuring of words, symbols, or actions to form a message having a shared meaning among individuals/groups.

The **decoding process** is the translation of a message to give it meaning. The ideal situation is to have the receiver translate the message with the shared meaning the sender used for encoding.

The **feedback** is the information returning from the receiver to the sender by the same communications process mode, signaling an acceptance, rejection, or noncommittal response to the message.

The **noise** factor is anything which interferes with the transmission or reception and subsequent perception of the intended message.

If psychological operations personnel are to be consistent in their efforts to form a persuasive communication, they must be concerned with the reasons for the success or failure of the message.

A persuasive message must incorporate variables of policy, intelligence, a general theme, and the command's desired results.

The target must be motivated to perceive a persuasive PSYOP communication (message), in spite of interference with its transmission, reception, and subsequent perception. To meet the challenge, an attention-gaining, stimulating, timely message must be transmitted.

The message is important to the target audience **only if it can be understood**. It is the objective of the psychological operator (encoder) to guide understanding by using words, symbols, and actions that have a known and accepted meaning to the target. For example, figure 10-2 shows the difference of meaning for terms given in standard American and Soviet dictionaries.

Word	Soviet Meaning	American Meaning
Individualism	The individual as a member of a collective.	The pursuit of individual rather than common or collective interest.
Freedom	The recognition of necessity.	Exemption from necessity, in choice and action; as, freedom of the will.
Charity	Help granted hypocritically by representatives of the dominant class in societies of exploiters to a certain fraction of the disinherited sectors of the population in order to deceive the workers and to divert their attention from the class struggle.	An act or feeling of affection or benevolence.
Initiative	Independent search for the best way to fulfill a command.	Self-reliant enterprise; self-initiated activity.

FIGURE 10-2
DIFFERENCES IN MEANING

The immediate goal is to cause desirable behavior which will satisfy **perceived needs**, arouse a perception of **dormant needs**, or stimulate a perception of **new needs**. To accomplish these, the persuasive message must stimulate an awareness of the behavior required to satisfy perceived needs, dormant needs and their satisfying behaviors, or new needs. If stimulation is successful, the individual or group may change their attitude(s) and behaviors as urged or implied by the message.

MASS COMMUNICATIONS

There are two types of message carriers: mass communications and face-to-face communications. **Mass communications** are directed toward selected target audiences with specific needs; the level of communication, the languages and dialects, and the content of the message are tailored to the society addressed; e.g., the blue collar worker versus the executive. Regardless, the individual or group retains the option to select the mass communications it accepts.

It can be looked upon as a two-step process as shown in figure 10-3. **Step one** occurs when the persuasive message is transmitted by mass media to the key communicator. **Step two** occurs when the persuasive message is transmitted from the key communicator to the individuals and groups composing the society.

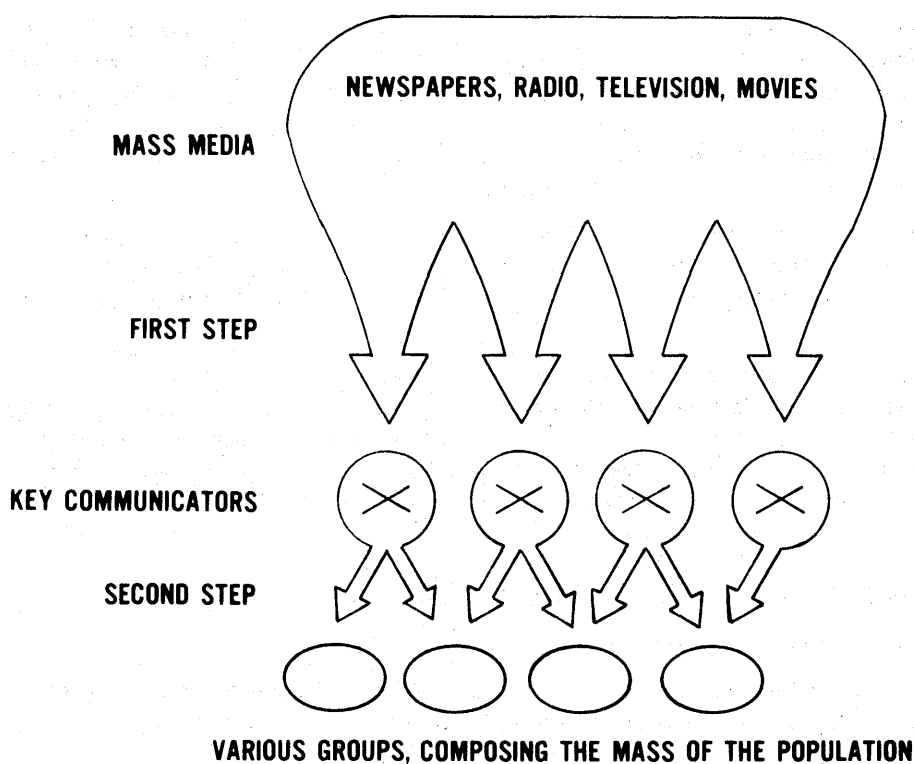


FIGURE 10-3

TWO-STEP FLOW OF MASS COMMUNICATIONS

The reason for the two steps is that mass media does not reach, nor is it internalized by all people. Many who receive the message do not have the desire to internalize it. The key communicator has the time, desire, and ability to receive a persuasive message. It is the intent of the psychological operator to exploit this receptiveness, enlisting the key communicator's help to reinforce mass media and face-to-face communications.

The key communicator furnishes the average individual secondhand information and interpretation concerning that which they have heard, seen, or read. He persuades the individual or group to change or reinforce their opinions, attitudes, emotions, and behavior. The key communicator can reduce the uncertainty of bringing about the desired behavior. He is the one to whom PSYOP messages should be directed.

INFORMAL COMMUNICATIONS CHANNELS

The communications process merely starts with the transmission of the message by way of the mass media. The important step is the penetration of the informal societal communications channels; i.e., the beauty parlor group, the women washing clothes on the river bank, the barbership coterie, the student clique, the luncheon club, the tea (coffee) house, etc. Discussion within these groups keeps the ideas of the propagandist alive and hopefully leads to acceptance and action.

A man's behavior, attitudes, and opinions are most strongly influenced by the groups to which he belongs. The stronger his attachment to the group, whether out of fear, awe, respect, or intellectual or sentimental attachment, the greater the group influences his lifestyle.

The most important institutionalized channels of social communication that must be penetrated are the family, religious center and school, and in totalitarian countries, the governing political party. These institutions are the centers of authority and social control, charged with the responsibilities relating to the primary functions of life; i.e., child rearing, education, companionship, marriage, morality, and death. They evoke the deepest sentiments, loyalties, and expectations.

ADVANTAGES OF MASS COMMUNICATIONS

Mass communications have many advantages:

The **instant** a persuasive message is constructed it can be transmitted great distances and received by a large number of people, individuals, and groups.

Mass communications can be **intensely emotional and unrelenting** to dramatize and lend credibility to needs and the desirable behavior to satisfy them.

Despite the selectivity of a mass communication target, numerous nonselected people are subjected **indiscriminately** to the message transmission.

The mass communication, due to its purpose of reaching wide ranges of audiences, is constructed to be perceived by the common denominator. Thus, a persuasive message may be constructed for transmission to the middle class with the calculated objective of gaining the attention of the lower upper class and the upper lower class.

People band together in a society to satisfy self-preservation and self-maintenance needs. Through mass communications, attention can be focused on these **broad societal needs** to change the attitudes of mass audiences as opposed to the limited individual face-to-face approach.

The psychological operator **must not assume** that audience needs are limited. Few societies exist whose needs are not expanded through exposure to mass communications.

INTERPERSONAL COMMUNICATION

Interpersonal, or face-to-face, communication is person-to-person contact within the range of

activities by which people communicate orally in direct face-to-face situations; e.g., rallies, groups, group associations, and social activities. It enables the psychological operator to select the target, rapidly disseminate the appeal, and immediately assess its effectiveness.

ELEMENTS OF FACE-TO-FACE COMMUNICATION

To be effective, the communicator must know specifically what he desires to say, how it should be said, to whom, and where and when to say it.

The Message. The communicator must be certain of the message he wishes to convey. In most situations themes for face-to-face communication seek to generate cohesive behavior. The themes or line of persuasion should be preplanned and questions anticipated.

Presentation. The manner of presentation is of utmost importance. The presentation must be in terms and language which the target audience understands and can relate to its own experiences. It is essential that the communicator know the audience, be fluent in their language, and be able to identify with them.

Audience Selection. Key personnel who influence the opinions of a wider audience are the more useful in spreading the message.

Time and Location. The time and place a message is delivered must be convenient for the target audience. The psychological operator is trying to sell the target audience; therefore, the audience's convenience has a higher priority than the communicator's.

METHODS OF EMPLOYMENT

Controlled face-to-face communication is best used when military forces are in direct contact with the target audience. In most cases, the face-to-face communications network already exists. In some circumstances, the communicator may or must create a situation conducive to face-to-face communication.

Rallies. People gathered to be informed and entertained are susceptible to persuasion and may be stimulated to support a cause. They are usually drawn to rallies by a common interest and a feeling of participation or belonging. Under such conditions, propaganda messages may be accepted by many people of different social and economic levels. Skilled use of rallies and meetings can involve the audience emotionally.

Groups. Small, tightly organized groups are highly effective in spreading appeals. By organizing such groups or exploiting existing ones, the communicator can extend his appeal to larger groups.

Group Associations. Associations, such as youth groups, religious organizations, women's clubs, etc., provide opportunities to expand the impact of the message.

Social Activities. Social activities appropriate to local customs and patterns can stimulate cohesiveness. Such gatherings may serve a propaganda purpose, as well as offering opportunity for social communication.

Person-to-Person Contact. There is no substitute for the intimacy of individual contact. A person is more likely to believe and accept what he hears in the course of a conversation than what he reads or otherwise learns. The propagandist can tailor his appeal to fit the individual's experiences and needs. This tailoring is more likely to achieve results than a mass appeal dependent on an approach targeted at the average intelligence level of the target audience.

Other media reinforce face-to-face communications. The leaflet, pamphlet, or magazine handed to a participant in a mass rally, the poster reminding all of a positive action program, the motion picture or television program to illustrate the speaker's purpose, the printed material given to the individual after an ideological discussion contribute toward the success of the PSYOP program.

TECHNIQUES

Some Tips to Remember

Make each meeting contribute to the entire PSYOP program.

Choose areas free from interruptions and distractions.

Set a time limit. Allow enough time for the meeting.

Choose topics important to the target.

Ask questions. Questions give the audience a chance to actively participate. The audience merely listens to statements. Questions encourage them to listen and speak. They cause action.

Understand responses. Be certain you understand any comment or answer. Repeat, in your own words, what you thought the other person said. If he agrees, you understood him. Do not discuss the point unless it is clear to you.

Be explicit. Explain precisely and make clear to the target audience the problem, the point of discussion, and the required action.

Use concrete words. Avoid words that the audience can or is likely to misinterpret.

Stress all points on which you agree with the target audience.

Avoid minor disagreements. If you disagree on important points, do so politely. Do not antagonize or make the audience sympathetic to the other side. The following techniques will help:

Politely point out that the other side is wrong about some important points. List them.

or

Politely point out that the other side is uninformed. Then make the point: If they had the information, they would change their opinion and agree with you. Give the correct information.

or

Prove the other side is reasoning illogically; and give the right idea.

or

State the other side's reasoning may be partially right but that it does not consider some factors. Then give the facts to support the point you want to make.

Know the subject thoroughly. If you cannot answer a question, **do not lie** no matter how minor or major the issue. Lying destroys credibility.

Make no promises you cannot or do not intend to keep.

Be confident. Control your emotions. Do not give way to emotions that will antagonize the audience.

Reinforce your point. Select evidence that supports your position. In order to avoid charges of bias, you may introduce minor points to support the opposing view.

Encourage the audience to think along lines that lead to the conclusions you want.

Present conclusions to the audience. Sometimes you may have to disguise them. The type of audience determines the extent to which you must do so. Emphasize conclusions on subjects that are unpopular with the target audience.

For the unfriendly or suspicious audience, disguise or present the conclusions as questions, making the desired answer or action appear to the audience to be the logical one. You must present clear, concise, and coherent conclusions to a less educated or apathetic audience. You will insult a well-educated audience by openly presenting conclusions to them. Use carefully phrased questions, making the response you want the only logical one.

Arouse the audience's emotions, but keep them under tight control. Attention-getters may make your appeals more attractive. The attraction must, however, be moderate to reinforce your message and not divert attention. Examples are attractive or popular persons--men or women, depending, among other things, on the culture--presenting a message, the political picnic, entertainment troupes at rallies, and background music.

Have the audience participate. The most effective appeal is that which requires audience participation, if participation verifies the message. For example, if you, the propagandist, tell an audience that a nearby area has been completely destroyed by our firepower, and this is verified by members of the audience, your future credibility will be enhanced.

Generate discussion. A frequent way to get audience participation is to generate discussion, either through questions to the audience or questions or comments from people planted in the audience. Once the discussion begins, the

psychological operator knows that he has awakened an interest, which is encouraged. The psychological operator is successful when the audience is moved from discussion to action.

Present new material or change style. An audience may become bored or resent hearing the same appeals or arguments. The chance of success for an appeal may be increased by presenting new material or by changing the style of presentation.

Rumor

Rumor can be spread by any medium. It can best be controlled or eliminated in face-to-face situations. Rumor thrives when general knowledge of the facts is limited and the conditions or situation which are the subject of the rumor may be subject to ambiguous interpretations. Rumor feeds on the hopes, fears, and desires of a population.

MASS AND FACE-TO-FACE COMMUNICATIONS

The psychological operator must view mass communications as a supplement to interpersonal communications, but he must understand they are **not a substitute** for a lack of knowledge of the culture and society. This dictates:

The absence of equipment must not be used as an excuse not to communicate.

The use of equipment to transmit a persuasive message must be proven necessary.

He must also understand that overdependence on equipment can result in the failure of a message. Success, on the other hand, can be assured if alternate face-to-face (interpersonal) communications are available as contingencies; i.e., rallies, meetings, show-and-tell demonstrations, rumor campaigns, social gatherings, etc.

While mass communications offer the most rapid means to reach the greatest number, the personal touch of face-to-face communications is the most effective way to "clinch the argument" and sell the product. It can be said, "There is a direct correlation between mass communications and face-to-face: The closer mass communications approximate face-to-face, the more effective they become." This is the major reason why famous, noted, popular, widely liked, admired, respected, or loved persons and personalities are widely used in mass communications selling campaigns--particularly in selling ideas.

COMMUNICATIONS BARRIERS AND THE PSYCHOLOGICAL OPERATOR

Barriers

Barriers to effective communications develop due to differences in the meaning of the words, symbols, and actions transmitted among individuals and groups within a culture (intracultural) and between individuals and groups of different cultures (intercultural).

One of the most critical aspects of working cross-culturally is **recognition of differences in cultural values and assumptions**. There are certain experiences

shared by most individuals within a society, so common reactions to an event can be anticipated. These values and assumptions are so much a part of the individual that the target audience will be unaware of how much their behavior is influenced by them.

Words, symbols, and actions being created within a cultural context create communications problems between people from different cultural backgrounds. They do not know the meanings attached to each other's words, symbols, and actions. The cultural influences act as constraints upon cross-cultural communication and can be analyzed as differences in cultural values and assumptions, objectives, and behavior patterns.

Psychological Operator

The psychological operator has learned to work for certain culturally-oriented life goals. His goals may vary significantly with the life goals of those persons selected as a target audience. For example, the objectives of one culture may be oriented toward achievement of harmony with the environment, while another may be oriented toward changing the environment. Such differences are obstacles to understanding and, therefore, to effective PSYOP.

The psychological operator provides the means to interpret only the behavior within his culture. He expresses this interpretation through words, symbols, and actions which, if transmitted by message, may not be acceptable in another culture. A clenched fist, for example, may be a gesture of anger in one culture and a salute in another. Innocuous words in some countries become foul vulgarities in others. In some societies, asking about the well-being of the female members of a friend's family is proper and desirable; in others, it is a serious breach of etiquette.

A possibility of being **culturally biased** must be recognized and every effort made to interpret behavior in terms of the target audience's culture.

In developing messages which will be meaningful to the target audience, the psychological operator must take into account both his and the target audience's cultural backgrounds. He must acquaint himself with the established customs and social taboos of his target audience to prevent inadvertent disparaging remarks or actions. Phrases, comments, expressions, and actions that are normal in our society may be offensive in other cultures.

A problem that deserves special attention is communications with the nonliterate or semiliterate audience. Collectively, this audience represents great potential power, constituting 60 to 80 percent of the population of some countries. The psychological operator must not assume that people identified in other cultures as literate meet his standards. A large number of people who are considered literate in their culture possess such a limited reading ability that they should be classified as semiliterate. In view of their numbers and low status, nonliterate and semiliterate groups are fertile for support of ideas and actions (insurgencies, civil war, revolutions) which promise to alleviate their suffering.

Knowing what this audience considers valid evidence and how they can be convinced is particularly necessary. And identifying individuals they accept as leaders or status people is extremely important. These leaders or status people, who can get the populace to accept an idea, should be the first target of the PSYOP

communication. However, consideration must be given to their traditional methods of decisionmaking. In many cultures, the leader may have no control over the final decision. He can only vocalize the decision reached by the group as a whole.

The psychological operator must recognize that the target has its own language to transmit cultural meaning. It may, therefore, be advisable or necessary to use members of the target audience to assist him in various ways; i.e., as propagandists, translators, advisors, etc. He may also use them, by means of discussions and social activities, to gain an intimate knowledge of their language, values, culture, goals, folkways, mores, customs, and laws. He must realize that for communications purposes the target audience is distinct from other individuals and groups, due to varying demographic, cultural, individual, and sociological characteristics.

Demographic characteristics provide statistics such as age and sex distributions, birth and death rates, race, religion, occupation, income, language, social class, and political affiliations of members of the target audience.

Cultural characteristics consist of all behavior that is learned, shared, and transmitted by words, symbols, and actions. To communicate effectively with the target audience, the psychological operations personnel must have a command of such target audience characteristics as language, customs and traditions, norms, values, ethics, mores, folkways, attitudes, opinions, the social system, the religious system, the political system, the kinship system, the education system, and the economic system.

Individual characteristics that may be available to the psychological operator for analysis and employment are individual and group stimuli, sensation, motives, needs, drives, perception, and frustration.

Sociological characteristics deal with those aspects of the group which can enhance or inhibit communication. These include, but are not limited to, demographic, cultural, and individual characteristics mentioned above.

It is through the group and group processes that attitudes and behaviors may be changed. Therefore, by using a group approach, a successful persuasive message that will be accepted by group members can be rapidly disseminated. Such acceptance will be greatly enhanced if the key communicators within the group are convinced of the importance of the message and convince others within the group.

The psychological operator must give continued attention to message feedback to determine the meanings given to his message by the target audience.

Translations and the Translator

The ideas to be included in a persuasive message must be thoroughly discussed with the translator. The translator must be given ideas and allowed to translate them into the language of the target audience.

By avoiding word-for-word substitutions, in translations, meaningful ideas are presented in the logical order of the target audience's language, as opposed to the fragmented meaning that word-for-word translations can create.

This approach allows the translator to use language that holds the most meaning for the target audience. It also makes easier the construction of persuasive messages in language that arouses the emotions of the audience.

*Chapter Eleven***PROPAGANDA AND
COUNTERPROPAGANDA**

Propaganda is the sales pitch. It's a message with a point of view. It is the deliberate spreading, by any means of communication, of doctrine, ideas, facts, argument, information, allegations, or appeals to advance a friendly cause or injure an enemy cause. This may be done by words, symbols, public action, or other deeds. For a formal definition, see appendix H.

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PROPAGANDA

The purpose of propaganda is to bring about behavior that the propagandist desires and to reinforce that behavior with favorable opinions and attitudes. In order to accomplish its purpose, propaganda must fit within the cultural context of the audience. It should also avoid direct attacks on the core beliefs and traditions of the target audience.

EFFECTIVE PROPAGANDA--CRITERIA

The tests for effective propaganda are simple:

Does the propaganda fit within the cultural context of the audience?

Has the propaganda avoided direct attacks on the core beliefs and traditions of the target audience?

To what extent did it influence the target audience to follow the course of action desired by the propagandist?

To what degree did it help the tactical commander? How? Why?

How successful was it in helping to defeat an insurgency and gaining the willing active support of the population? The armed forces?

To what extent did it succeed in enabling the United States to achieve its national policy objectives?

CLASSIFICATION

Propaganda is classed on the basis of source:

White: Its source is openly stated.

Gray: No source is given.

Black: Attributed to other than the true source. This type is normally used to support strategic objectives. It generally emanates from the highest levels of command or government and is disseminated by designated specialists.

White, gray, and black do not refer to the content of the propaganda message. **The terms merely refer to the methods used to carry out the operation.** See "white propaganda," "gray propaganda," and "black propaganda," JCS Pub 1.

BASIS FOR DEVELOPMENT

The following elements are basic to the development of propaganda:

Psychological Operations Objectives

One of the basic factors that determines what is said, how it is said, and to whom it is said is the psychological objective that the psychological operator wishes to achieve. The psychological objective is a statement of a measurable response expected of the target audience as the result of PSYOP.

Target Analysis

Target analysis seeks to identify, locate, and gain psychologically relevant insights about target audiences by a detailed analysis of intelligence. A detailed analysis of target analysis is found in chapter 14.

Target Audience Interests

In order for propaganda to appeal to an audience, it must be pertinent to the interests of that audience. It must satisfactorily answer the questions, "What do you want me to do?" "What's in it for me?"

Detailed Current Intelligence

Detailed current intelligence is needed for successful propaganda. For a discussion on the use of intelligence in PSYOP, see chapter 14.

Production

An important question facing the propagandist is the availability of media facilities; for example:

Are press, inks, paper, and other printing supplies available?

Are radio and television production facilities available?

Can audiovisual material be locally processed?

Dissemination

Not only must propaganda be produced, it must also be disseminated. The psychological operator must determine whether he has the means available to effectively disseminate propaganda. For example, is radio and television transmitting equipment available?

Credibility and Impact of Media

In planning propaganda campaigns, themes, and messages, the psychological operator must know the credibility attached to each medium by its target audience and the impact of that medium. He must also know media patronage profiles. Credibility and patronage vary with the target audience and the media used to spread the message. The psychological operator must also know the type of audience each medium attracts and its characteristics.

Suitable Language

Frequently the audience may take great risks to hear or read a message, and must do so quickly. The message must be worded to permit them to do so.

Priority of Interests

Not only will the language vary, but priority of interests must be considered. For example, the priority of interests of peasants are not the same as those of city merchants; nor are those of city merchants the same as those of university students; and none of these are the same as those of a soldier under artillery bombardment.

Pretesting

All propaganda must be pretested before it can be disseminated. Pretesting gives the psychological operator a good idea of the potential credibility and effectiveness of his message. The selection and use of a particular pretest method must be based primarily on the accessibility of the target audience to PSYOP personnel.

Survey sampling is the most reliable method of pretesting propaganda. This method requires personal solicitation of the members of the target audience. In this way, empirical data is obtained from the intended recipients of propaganda. The two major methods of obtaining specific information by survey sampling are the use of questionnaires and personal interviews. The primary purpose of using an interview is to present items of interest personally to the respondent, thereby precluding errors in interpretation, and to obtain replies from other individuals so that generalizations can be made.

Most personal interviews follow a prescribed pattern; both the wording and order of questions are decided upon in advance and rigidly adhered to. A less formal type of interview uses a detailed list of subject matter to be covered. It permits the interviewer to vary the wording and order of subject matter so that the maximum amount of information concerning specific topics can be obtained.

Survey sampling requires personnel trained to collect data, personnel skilled in its interpretation, and accessibility to the target audience.

When the target audience is not reasonably accessible, panels of representatives of the target audience may be used. These may include prisoners of war, refugees, defectors, and other available typical representatives of the potential target audience. Panels must be as closely representative of the target audience as possible. Pretests with such groups can indicate what appeals are likely to be effective, what to emphasize, and what to avoid. By being familiar with the backgrounds of panel members, the results of pretests can be interpreted in the light of differences between respondents and the intended target audience.

Panels of representatives may be configured in a number of ways. A panel may consist of as few as five representatives or as many as a hundred. The guiding consideration is that the number of representatives must be sufficient to provide an adequate cross-section of the intended target audience, and the number of responses must be sufficient to provide a reliable indication of effectiveness.

Pretesting may be done by using the following methods:

Group consultation. This method allows representatives (5 to 15) to observe and study an item of propaganda and exchange views among themselves. It requires the pretester to direct the discussion along prearranged lines to obtain information and preclude extraneous comments. Use of this procedure enables the respondents to exchange ideas; sets the respondents at ease, since they are among peers; and enables the pretester to utilize large numbers of representatives in a relatively short time. The disadvantages are that the respondents may tend to agree with the majority to avoid peer-group criticism. In addition, discussions may become long and extraneous unless carefully controlled. Care must be exercised to assure that comments which are relevant in the sociocultural setting of the respondents are not excluded by overcontrol.

Individual interview. This method allows respondents to observe and study a series of preranked, prearranged items of propaganda. By use of this method, several items of propaganda previously used on actual target audiences are given a decreasing effectiveness rating ranging from very effective, through moderately effective, to not effective. The new item is matched with the prescaled propaganda. The respondents are asked to indicate which items of propaganda material they feel are most effective and why. Choices are compared. If a majority indicate that the new item of propaganda is likely to be more effective on the actual target audience than the prescaled items of propaganda rated "not effective" or "moderately effective," the new item of propaganda may be used.

On the other hand, if a majority of the panel indicate that the new item is not likely to be as effective as the prescaled propaganda rated "not effective" or "moderately effective," the new propaganda material should be revised to conform with panel recommendations. The pretester must determine why each respondent makes his choice.

When using panels of representatives, it is essential that the individual conducting the pretesting give very explicit instructions. Some of the more important points to cover and actions to perform include:

Pretest instructions and actions:

Explain reasons for and the nature of the pretest.

Put the respondent at ease.

Inform the respondent that his identity will remain anonymous, if he desires.

Inform the respondent that his cooperation with the pretest will not affect his status.

Inform the respondent that he should consider himself to be in the status and position of the target audience he represents.

Convince the respondent to answer according to his convictions--that the purpose of the pretest is to identify weak as well as strong points--and explain the reasons.

After the pretest:

Express appreciation for cooperation.

Reaffirm that the respondent understands that he will receive no reward, financial or otherwise, for participating in the pretest.

Reaffirm that the respondent understands that his identity will remain anonymous.

When the target audience, or representative personnel, are not available, panels of experts can be used to pretest propaganda. These individuals, who need not be representative of the target audience, should possess current knowledge and be expert in pertinent areas of knowledge or learning; i.e., order of battle, sociology, politics, communications, etc.

Experts may be located near any PSYOP unit. They may be found in the United States Information Service, United States Agency for International Development, intelligence agencies, business firms, etc. These individuals should be used whenever the need for them arises.

Posttesting

This difficult but essential step in development of propaganda determines the next or new propaganda message. The questions that posttesting must answer are:

What did the propaganda achieve?

Was it effective?

How effective?

Why not totally effective?

What propaganda will achieve total effectiveness?

It is extremely difficult for the psychological operator to measure changes in conduct and intangibles, such as attitudes, opinions, and emotions, upon a physically inaccessible audience. The effects of propaganda upon such an audience may be gleaned from the reaction of the enemy government as determined by its actions and made known by various media. Prisoners of war, defectors, line crossers, and sometimes, press correspondents may assist in the process.

Evaluation of all factors influencing propaganda and the results must be objective. All propaganda must be evaluated on the basis of the results desired and the results achieved, but must be measurable by comparing the results desired with the actual change in conduct, attitudes, opinions, and emotions.

BASIC CHARACTERISTICS OF US ARMY PROPAGANDA

Success in PSYOP is impossible without credibility. Even in the most underdeveloped areas, or under the most adverse conditions, the truth becomes known to a target audience. If lies have been told, credibility is lost. Once lost, it can never be totally regained.

US Army propaganda is based on a strategy of truth. It seeks to strengthen or create a favorable image by emphasizing the credible truth. This is so because the complete truth is frequently not believable (is incredible) to the target audience. For example, in World War II it was incredible to the enemy that the prisoners of war we had captured were receiving regular rations of cigarettes (with tobacco in them), fresh oranges, chocolate bars, coffee, and other items not available to the general populace in enemy countries.

Dedication to the truth does not imply that a full recounting of facts is required or advisable. Facts to support certain themes may be selected while others may be excluded. The propagandist reports those facts that present his side in the best light. However, to maintain objectivity, he may present some views (generally minor) from the other side. This is done, in many cases, to reduce the impact of enemy propaganda and to increase the credibility of US/friendly propaganda, since people tend to believe a source if both sides of a position are presented, even when one side is dominant.

KEYS TO SUCCESSFUL PROPAGANDA

The first requirement for successful propaganda is a national policy that meets the needs of the target audience. The role of the psychological operator is to communicate that policy. Not only must the propaganda be credible and persuasive, it must also not be recognizable by the target audience as being propaganda:

News--commentary--discussion--instructions--facts--entertainment
--YES! Propaganda--NO!

Propaganda must be **based on reality**. Any gap between reality and propaganda will be quickly noticed. It does not require mass communications systems to reveal discrepancies. The jungle drum and the bamboo telegraph will do that quickly enough. With the transistor radio and even television reaching the most primitive areas, the time gap is even shorter.

Messages to different groups of people will vary according to their different interests, but the underlying themes--the substance of the messages--must be **consistent**.

Messages to different audiences may be different, but **never contradictory**. **The credible truth must be consistent to all audiences.**

Propaganda must gain attention--**IMMEDIATELY** open minds. It must be presented so that the target audience will open its mind (individually and collectively) to receive the message. Insults, harassment, and messages degrading the target audience have the unwanted effect of closing the mind.

After the mind is receptive to the message, **it must be held open**. This is done by appealing to the interests of the audience and by presenting better solutions to their problems than those presently available. If possible, the propagandist must create or awaken an awareness in the target audience to needs that only he, the propagandist, can satisfy.

The psychological operator must take into consideration the fact that not only does each target audience have its own specific interests, but these interests have a priority of importance. Propaganda will hold the attention of its target audience only so long as it appeals to the most urgent interests and needs of the audience, and so long as the solutions offered are realistic and safe.

The same factors that apply to overcoming resistance to propaganda also apply to **gaining and holding an audience**. With good propaganda, however, it is easier to gain and hold the attention of a new audience than one that has turned away from previously disseminated material.

The degree to which actions are influenced and the permanency of actions (when free from coercion) measure the success of the message. The most successful propaganda, with the longest effect, is that which **reinforces the actions** brought about by creating favorable opinions, emotions, and attitudes in the target audience. The favorable opinions, emotions, and attitudes give **permanency to the actions**.

ROLE OF THE ENEMY

The psychological operator must always bear in mind that the enemy government, with its civilian and military agencies, has a major effect upon the target audience. This effect places the US/friendly propagandist at a disadvantage which he must overcome. The following factors are of primary importance.

Enemy Control Over Audience

An enemy government generally has physical control over the target audience. This gives it the power and ability to punish those whom it considers to be criminals or nonconformists. Fear of punishment is a major deterrent to actions that the propagandist might desire; e.g., having a target audience listen to his radio broadcasts when listening is punishable by death.

It follows that a government that has physical control over a designated target audience also controls the total welfare of that audience. Aside from incarceration and the power to inflict death, the enemy government has lesser but, nonetheless, highly effective means of interfering with the propagandist trying to reach those within its jurisdiction.

The government might prohibit criminals and nonconformists from working. It can restrict travel, a serious penalty for those who must travel to work but who may be prohibited from doing so by government edict.

Those within the power of an enemy government are aware that their welfare depends upon compliance with the wishes of their government. They will hesitate to jeopardize their well-being and that of their families.

Enemy Interference With Friendly Propaganda

Propaganda does not flow freely into enemy territory. The enemy has the physical power and means to restrict the flow of communications within any territory it controls, even where there is an effective shadow government.

Enemy-Imposed Sanctions and Rewards to Informers

Not only can and will the enemy government impose sanctions upon those who defy its wishes, laws, and edicts, but it will also offer substantial rewards to those who inform on lawbreakers and nonconformists. These rewards may take any number of forms: money, jobs, rank, land, business opportunities, power, fame, etc.

Generally, the fear of being reported is as great as being caught transgressing by police or other security agents. This fear often inhibits individuals, groups, or even societies from freewill actions, such as listening to foreign radio broadcasts and speaking with strangers, nonconformists, or members of outgroups.

Enemy Popular Support

While it may be your enemy, a government or armed force is someone else's friend. The psychological operator who works on the premise that his enemy is everyone's enemy is deceiving himself. Every government has some degree of popular support. It has those who will take the necessary steps to support it. For example, the bureaucracy of government employees has a vested interest in aiding the government that employs it. There are also a great number of people who would fear change, and there are always those who believe in their government, right or wrong. None of these will assist the propagandist. In fact, they probably will actively oppose his efforts.

Enemy Propaganda Campaign

The last, but not least, effective weapon of the enemy will be its own offensive propaganda. This propaganda will strengthen the resolve of those who favor the cause of the enemy and will tend to weaken the resolve of those who are neutral. The enemy's propaganda may require the US/friendly psychological operator to divert time, energy, money, personnel, facilities, and other resources to counter it.

The psychological operator must not downgrade enemy PSYOP efforts; he must be aware that he does not have a monopoly on effective psychological operations and credible persuasive propaganda. **Never underrate your enemy** is as true for psychological operations as it is for combat.

The way to success is not a one-way street. The psychological operator must expect that his successful propaganda efforts will bring about an **enemy counterpropaganda campaign**. The results of the counterpropaganda campaign will depend on the effectiveness of US/friendly efforts. An enemy's irrational overreaction may work to the advantage of the US/friendly propagandist.

While US and friendly military, economic, and political sanctions will lessen the will of some members of the enemy forces to fight or the will of civilians to support their government, these same sanctions may strengthen the will of others to resist our efforts. Our propaganda may incite some members of a selected target audience to greater antagonistic effort.

Authoritarian governments are prone to overact; this may work to the benefit of the US/friendly propagandist. Overaction by blanket prohibition will generally help the US psychological operator. It will lead people who are naturally curious to take risks to satisfy their curiosity.

Prohibition from listening to US/friendly radio broadcasts or watching TV may, in spite of the risks, whet the desire to hear and see what we may have to say or show. Prohibition from reading leaflets, circulars, newspapers, and magazines may lead to a black market in these items.

The propagandist must make the target audience's risks worthwhile by disseminating propaganda that appeals to their needs and interests and helps them alleviate their situation.

If US actions are honorable and humane and its accompanying propaganda credible, acceptance by a few may lead to a bandwagon effect, and hostility may decrease. The effects of a sound, complete message (actions and words) can be contagious.

Resistance to Propaganda

The first step to overcoming resistance to propaganda is to determine the reasons why it is resisted. This may require thorough background research into the history of the target audience whose values, culture, and present conduct have a historical basis. All groups, cultures, and societies have events in their history that are particularly significant and are categorized by key slogans, phrases, events (e.g., Bastille Day in France), and religious ceremonies.

A basic ingredient in overcoming resistance to propaganda is a logical PSYOP plan that is **culturally accurate**. The most detailed PSYOP plan in the world is utterly useless if it is not appropriate to the environment, conditions, and culture of the target. Each target group is susceptible to specific appeals. A plan that considers the uniqueness of its target will, when implemented, more readily overcome resistance by the target audience.

While words may make promises, actions concretely prove intentions. A major role of the psychological operator is to communicate word of the **implementing efforts**.

Everybody likes a winner. This works to the advantage of every psychological operator. Success and victory have a bandwagon effect in that they bring more adherents to the cause. The greater the success or victory, the greater and more assertive the PSYOP campaign should be to **exploit the success or victory**. The uncertain and wavering will join the victorious cause. The ties of the strongest adherents to the losing side will weaken. Good PSYOP enhance the effects of victory and success.

PROPAGANDA LIMITATIONS

The following factors place limitations upon the effectiveness of PSYOP and propaganda:

Political

Political situations and conditions may be such that the aspirations of the target audience cannot be fulfilled. National policy may preclude offering even token fulfillment. Complete agreement among allies is seldom attained on policy affecting their goals, national interests, and courses of action. Conflicting needs of other agencies of government operating abroad and military necessity may make policy uncertain. This may result in courses of action that reduce credibility and good will below the level desired in psychological operations.

Military

The military situation may be adverse, thereby stringently limiting the use of effective propaganda. Even static military situations restrict the possible effectiveness of PSYOP. Military security may limit the use or timing of potentially sound and effective themes and messages.

Audience

Target audiences are suspicious. Under the adverse conditions in which they generally exist, they have every reason to be. Being suspicious, they are not disposed to believe that the propagandist really has their interests at heart, or even that his interests are compatible with theirs. Because of historical, social, cultural, and language differences, the target audiences may not respond to the propagandist's line of reasoning. Because the enemy regime has greater access to the people under its control, it can interpose barriers that will limit or destroy any chance of communication between the propagandist and his intended target audience. In addition to technical communications barriers, extensive political and security police organizations that control communications can impose sanctions on the intended audience.

Personnel

Ultimate success depends upon dedicated, proficient personnel who can do the job. Unfortunately, due to scarcity and great demand, they are frequently not available in time of conflict. Equipment is not a substitute for these people.

COUNTERPROPAGANDA

Counterpropaganda is propaganda directed at the target audiences of enemy propaganda; it is designed to counteract enemy or other foreign propaganda and to capitalize on vulnerabilities in their campaign. Through the use of counterpropaganda, enemy campaigns can be either neutralized or minimized. While counterpropaganda is basically defensive to limit the effectiveness of enemy propaganda, it is not so in a negative sense. Using imagination, a psychological operator can, and should, initiate a well-planned, aggressive, and effective counterpropaganda offensive.

USE OF COUNTERPROPAGANDA

The use of counterpropaganda must be based on intelligence, propaganda analysis, and the answers to the following questions:

How will the counterpropaganda affect the overall PSYOP campaign?

What is the current and potential impact of enemy propaganda?

What is the probability of success of counterpropaganda?

The psychological operator must be aware of the danger of becoming so involved in a counterpropaganda campaign that he loses the initiative.

COUNTERPROPAGANDA TECHNIQUES

The technique used will depend upon the current situation and the possibility of success. Some of the most common techniques are:

Conditioning

This involves the use of education and information programs to condition the target audience and thereby reduce the shock effect of anticipated enemy propaganda. This technique reduces susceptibility.

Forestalling

This technique is akin to "immunization." It is the process of counteracting or capitalizing on a subject potentially exploitable by enemy propaganda before the enemy uses it.

Minimizing the Subject

A subject may be minimized by the following techniques:

- Emphasize its favorable aspects to the target audience.

- Insinuate the entire story cannot be told at present, while suggesting that the full facts will prove the enemy story either inaccurate or totally false.

- Briefly mention the enemy story and drop it.

Direct Refutation

This is a point-by-point rebuttal of enemy propaganda. A danger of direct refutation is that it may, by keeping the subject in the "public eye," add strength and possibly credibility to enemy propaganda. Therefore, care must be taken to counter the enemy's story so completely and effectively that publicity will not give it credibility.

Indirect Refutation

Indirect refutation introduces new, relevant themes which refute the enemy propaganda by implication and insinuation. By using this technique, the psychological operator is less likely to reinforce the credibility of enemy propaganda than if he directly refuted it.

Diversionsary Propaganda

This is an attempt to divert the attention of the target audience from the enemy propaganda by using new themes or by intensified use of themes that have proven effective.

Imitative Deception

This technique involves the alteration of enemy propaganda so as to give it a different slant, a slant favorable to the United States and its allies.

Silence

The best technique may be to ignore the enemy propaganda, particularly when active counterpropaganda measures may be dangerous or the effect is uncertain. In the event that the enemy theme does not lend itself to successful exploitation, or the subject is not important enough to warrant rebuttal, IGNORE IT--REMAIN SILENT! Before using this technique, the effect of silence upon the public must be weighed.

Restrictive Measures

Restrictive measures may be used to deny the target audience access to enemy propaganda. This, however, calls attention to the enemy output and whets the desire to learn the enemy's story. It thereby encourages the target audience to listen to and read the denied propaganda covertly. Restrictive measures, generally used by authoritarian governments, are never completely effective. Total enforced isolation is virtually impossible. Restrictive measures are not recommended.

Chapter Twelve

PSYOP PLANNING

12

The key to the success of PSYOP, as with any military operation, is adequate planning. The need for detailed, long-range imaginative planning is critical.

To be successful a psychological operation requires:

- A complete, detailed, accurate data base arranged for ease of use.
- Detailed, timely intelligence.
- Centralized control.
- Sound and timely planning.
- Decentralized execution.
- Optimum use of available resources.



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Psychological operations planning is a continuous process requiring imagination and determination. It must be responsive to immediate change brought about by any new condition or circumstance affecting the target audience or the psychological objective. The resulting plan is also subject to change.

The **PSYOP planning process must be flexible**. Targets of opportunity should be exploited as they arise. Opportunities to exploit a vulnerability may be lost by inflexible insistence on implementing the original plan. Vulnerabilities, conditions, target audiences, objectives, and themes often change rapidly due to shifts in events and policies.

Planning may precede or follow the decision to carry out a course of action. Whether the planning precedes or follows the decision, the ingredients are essentially the same for any PSYOP plan. For example, contingency plans follow the same pattern; they cover a variety of situations, such as the end of hostilities, intervention by other nations, the use of new weapons, changes in political conditions, and changes in the military situation. Contingency plans are designed to be implemented immediately upon order when the anticipated and prepared for event occurs.

PLANNING CONSIDERATIONS

Realistic objectives that can be achieved within policy limitation.

Analysis of the existing military and political situation.

Sources of information.

Delineation of the target and its accessibility.

Themes to be used to achieve PSYOP objectives.

Themes to be avoided.

Media to be employed.

Formal staffing and coordination required to effect the plan.

PSYOP PLANNING SEQUENCE

The sequence of steps taken to plan a psychological operation will vary with the situation; however, the same steps apply to any PSYOP planning. The flow and sequence of major PSYOP actions which occur in both PSYOP units and staff sections are shown in figure 12-1 to guide those involved in planning and supervising psychological operations.

As a first step, PSYOP personnel constantly gather information relevant to the area of operations. This intelligence focuses on subjects of PSYOP interest. The material, gathered from numerous sources and analyzed, is placed in a Basic PSYOP Study (BPS). (For a detailed discussion, see chapter 14 and appendix C.)

Target analysis is a major action in campaign development. It is an examination of intelligence to permit the analyst to establish a list of psychological objectives to guide PSYOP personnel in conducting psychological operations. (For a detailed discussion of target analysis, see chapter 14 and appendix F.)

Mission Assignment

A PSYOP support mission can be given to a PSYOP unit at any time during the PSYOP planning sequence prior to the initiation of campaign control. Upon receipt of a PSYOP mission, the PSYOP personnel follow the routine decisionmaking steps outlined in FM 101-5.

PSYOP Estimate of the Situation

The ACofS, G5 is responsible for the preparation of the PSYOP estimate of the situation (appendix D). The commander's decision regarding PSYOP support of the mission is made from this document. The estimate should, above all else, make clear the psychological impact of the commander's proposed courses of action.

Plan Preparation

After the commander announces his decision, the ACoS, G5/S5 prepares plans/annexes tasking the major subordinate elements with the responsibility to accomplish the PSYOP tasks. The same plans provide the commander with sufficient PSYOP support to accomplish the tasks. The PSYOP unit commander makes recommendations for the employment of the PSYOP assets.

Media Selection

Selection of media to transmit messages is based on the information revealed during target analysis. The analysis determines the type of media that is acceptable and credible to the target audience. (See chapter 17 for further discussion.) The planner must also consider the availability and mechanical capability of the media to deliver the message. For example, if television is selected, the audience must have access to compatible receivers. Early in the planning stage, consideration must be given to the time required for production and delivery. The message must be delivered at the needed time.

Propaganda Development

Propaganda development is the process of taking information, knowledge, and material available, visualizing it all, and expressing it as artwork, words, symbols, texts, manuscripts, and actions.

Pretesting

A pretest to determine the probable impact of PSYOP material upon the target audience and unintended audience should be accomplished using the appropriate techniques. The best sounding board for pretesting is a cross section of the target audience. If these people are not available, a panel of those most similar to the target audience should be used. (See chapter 11 for techniques.)

Campaign Control

Campaign control involves the production and dissemination of PSYOP material. For a discussion of campaign control see appendix G.

Posttesting

Posttesting and pretesting techniques are the same, but the same personnel must not be used on both testing procedures. In addition, posttesting discussions must be concerned with the reasons for audience responses.

Feedback

This is the basis for modification of plans and operations.

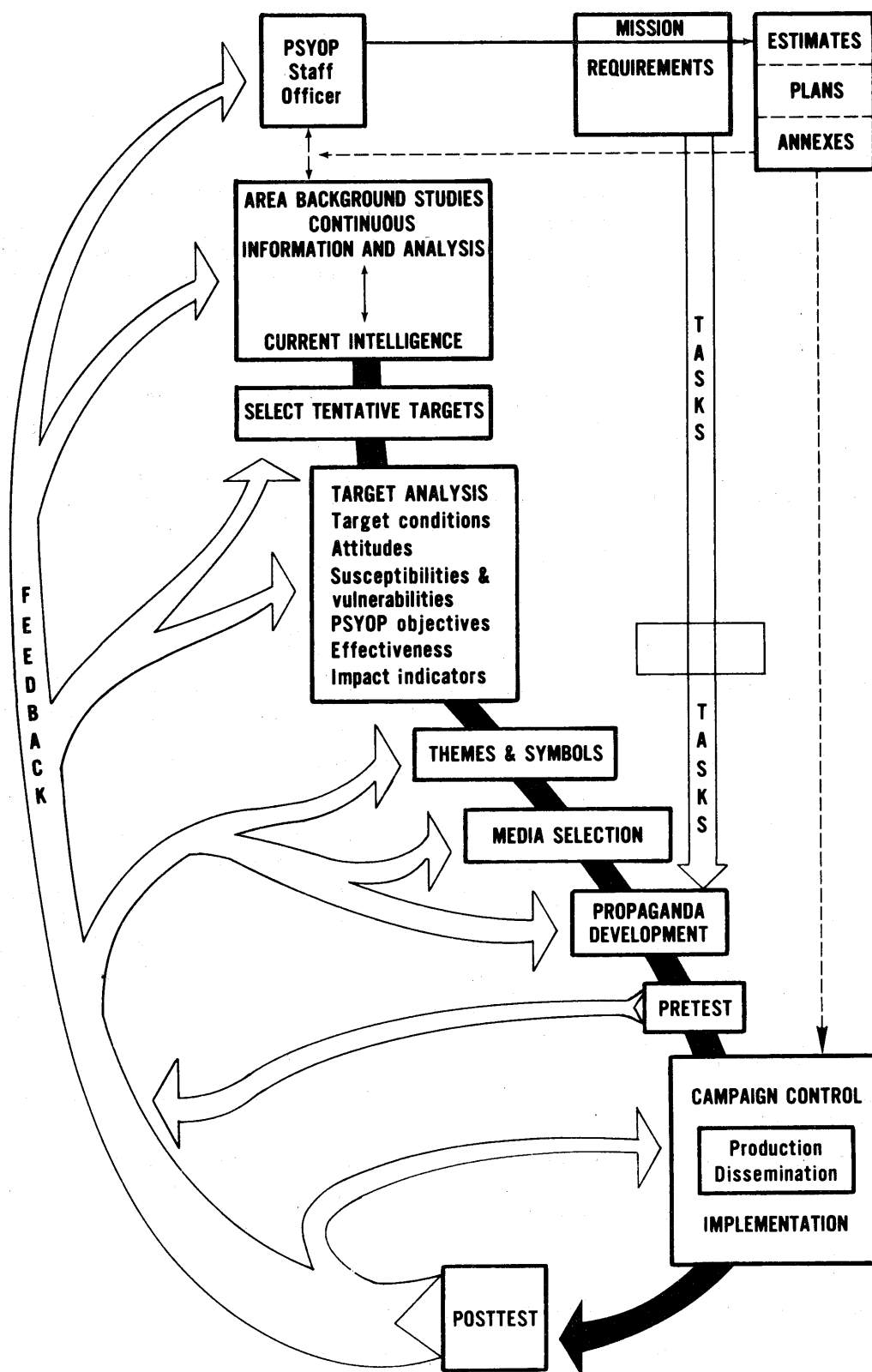


FIGURE 12-1
PSYCHOLOGICAL OPERATIONS FLOW

IMPROVING THE PRODUCT

Successful propaganda is both credible and persuasive. Building credibility requires consistency and time. Of the many factors entering into the establishment of credibility, one of the most important is an accurate target analysis. Credibility will be enhanced when the themes relate to the needs and wants of the target audience and are kept within their frame of reference. Experience indicates that the persuasiveness of propaganda to a hostile audience is increased when the propaganda is objective and indirect--the more hostile the audience, the more objective and indirect the propaganda.

Personal messages for delivery or transmission to individuals or groups in a target audience by a former associate or relative should contain intimate details known only to the source. They should be a means of identification to the intended audience.

In addition, the source must be clearly identified with sufficient information so there is no doubt as to his identity. This reinforces the credibility of the message.

AVOIDING THE COUNTERPRODUCTIVE

The following statements apply in limited, general, and cold war:

In a foreign internal defense situation, avoid propaganda that places the host country in a secondary position. US Army psychological operations support host country efforts.

Do not use terms, weights, or measures that are foreign to the target audience.

Do not translate directly from English to a foreign language. Instead, give the linguist an idea or concept and have the concept phrased in the local language.

Do not add credence to enemy propaganda through words or actions.

Make definite positive statements. Avoid the negative. Do not appear uncertain.

When preparing messages for dissemination, follow the rule **any statement or action that can be misinterpreted will be misinterpreted**.

Do not distribute propaganda that can be easily altered by the enemy to their advantage.

Avoid themes to which host country and enemy troops are equally vulnerable.

Do not insult or anger the target audience. Keep their minds open and their emotions friendly.

Do not use strong threats. Use threats only to meet or arouse a need, and present them as facts.

Do not give free publicity to enemy atrocities in the host country.

Use enemy atrocities to gain sympathy abroad.

Keep all promises; if uncertain of ability to deliver, don't promise.

Security permitting, warn civilians of impending artillery fires, naval gunfire, and aerial bombardment.

PSYCHOLOGICAL OBJECTIVES

A psychological objective is derived from the mission. It may be a single step or a series of steps designed to lead the target audience toward the behavior or attitude desired to accomplish the PSYOP mission. Changes in conditions may bring about changes in psychological objectives.

Psychological objectives are classified as:

Cohesive. Those whose achievement would strengthen or more closely unite the society or target group.

Divisive. Those designed to separate the individual from his group, separate a group from other groups or a society, or disorganize a group or society.

THEMES

A theme is a subject, topic, or line of persuasion used to achieve psychological objectives by exploiting existing vulnerabilities. Themes are the bridge between propaganda opportunity and the response which the psychological operator is trying to elicit.

Each theme should stand alone. It must, however, be coordinated with all relevant agencies to insure consistency and support for national objectives and policy.

Each theme should deal with only one subject. Do not complicate a theme by trying to achieve several objectives. Use separate themes for each objective.

Themes should be selected to persuade the target audience to adopt the course of action wanted by the psychological operator. The audience is motivated by telling them what action is desired, why it is desirable to them, and then showing how it fulfills their needs. Do not use negative themes to achieve positive action, as they tend to be counterproductive.

Make surrender/defector appeals on safe-conduct passes. Insure that the leaflets on which the appeals are made state that they are safe-conduct passes.

State that surrender may be made without a pass.

Stress that surrender may be made to any unit.

Inform all US/friendly units of the surrender/defection policy, so that those enemy who try to surrender or defect are not shot in the attempt.

Defection and desertion appeals are used to encourage individuals or groups among enemy forces to place personal considerations above group interests. Desertion/defection appeals should give absolute, specific assurance of good treatment, and cite honorable and worthy reasons for desertion or defection. When appropriate, use defectors to criticize their own government and military forces. Their message is personal and will have a greater effect than that of outsiders.

Family appeals are very effective, but should be disseminated in the enemy area only; if they are circulated where friendly troops prevail, they may cause desertion among host country troops.

Explaining the presence of foreign troops in the country is a major task. Items prepared to explain this presence should be pretested extensively to insure they cannot be misinterpreted as boasting. Similarities of culture and national goals between the host country and the US should be stressed. Differences between the host country/allies and the United States should be deemphasized.

THE MESSAGE

A propaganda message is a communication with the purpose of bringing about an action and an attitude. Before it can accomplish its purpose, it must get a hearing by the designated receiver (target). In brief, **a message must be received, be understood, be believed, offer a solution, and bring about a desired result.**

Given a policy, intelligence, a target, themes, and appraisal of the desired results, the propagandist composes his message. He must construct, time, and transmit his message so that, even though in competition with considerable other material being presented to the target, it gets a hearing. The target must understand the message and give it the interpretation intended by the propagandist.

A propaganda message must arouse or stimulate needs. It must cause an action or bring about an attitude desired by the propagandist. This requires that the message tell the target how to satisfy its needs--by following the course of action desired by the propagandist. This, in turn, requires that the actions (urged openly or implied) be appropriate and important to the target. In order to get the action or attitude desired, the message must, in the opinion of the target, offer the best solution (or the only logical one) toward solving the problem addressed or in fulfilling target needs.

In essence, the propagandist must take all necessary steps to assure that the action he desires will succeed and that the action he does not desire will have the least opportunity to appeal to the target; i.e., that the undesired action will fail.

MESSAGE STRUCTURE

The propaganda message should be clear, concise, and coherent--a precise item without extraneous material; everything in it must contribute to the whole message, providing a coherent flow without the use of filler material.

In preparing a message or line of persuasion, avoid abstractions if possible. Make maximum use of specific and factual examples and photographs.

If abstractions are used, define them in the simplest terms.

Relate the message to the everyday life of the audience.

Since the target is suspicious and will look for hidden unfavorable meanings, insure that only one interpretation, the intended one, can be given each sentence.

Since the target has a different background and frame of reference, do not use unfamiliar idiomatic expressions or jargon.

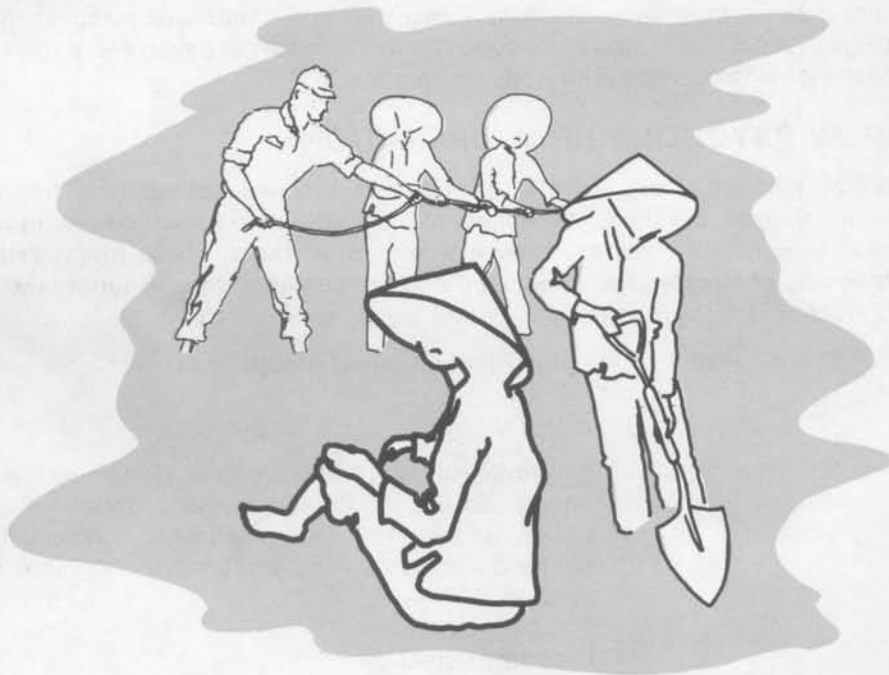
Use clear and complete statements.

Develop thoughts in the logical sequence of the language used by the target audience. Do not leave any thoughts for the target to fill in. The key question to ask is, "Does the audience understand what it means?"

Use the level of language that is correct for the literacy level of the target audience. For semiliterates, it is best to use their regional dialects and idiomatic expressions.

*Chapter Thirteen***13****CONCEPT OF EMPLOYMENT**

In war, the side which most effectively influences the psyche of man will have the strategic advantage, fight the better fight, and win the victory and the peace.

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ROLE OF PSYCHOLOGICAL OPERATIONS

Psychological operations are interrelated with national, ideological, economic, foreign, and military activities. They establish, maintain, and reinforce the effect and credibility of these integrated functions. Concerted, systematic, and comprehensive psychological programs support US military services and the government agencies and departments concerned with national security.

US ARMY PSYCHOLOGICAL OPERATIONS

PSYOP personnel support and complement planned operations. They also assure that the psychological impact of planned and executed operations and military activities are made known to the commander. These might include stationing of forces, deployments, official and personal troop expenditures and conduct, and storage of munitions and weapons.

PSYOP are aimed at three major foreign target groups:

Enemy

Psychological operations attempt to demoralize the enemy soldier or hostile civilian, undermine his cause, obtain favorable behavior, and develop opinions, emotions, and attitudes to reinforce that behavior.

Uncommitted

Psychological operations must develop favorable behavior in the uncommitted and reinforce favorable opinions, emotions, and attitudes.

Friends

Psychological operations must keep friendly groups and individuals assured of the eventual victory.

NATIONAL OBJECTIVES ABROAD

In the area of foreign policy, psychological operations may have the mission of supporting political objectives, gaining support and cooperation of neutral countries, strengthening or weakening alliances, deterring nations from aggression, and bringing about the final surrender of the enemy.

MAJOR MILITARY OBJECTIVES

Joined with the persuasive psychological pressures generated by combat situations, PSYOP can help to lower enemy morale, reduce combat efficiency, encourage defection and desertion, participate in deception operations, and add a multiplier effect to existing forces to bring about more efficient accomplishment of the mission.

Lower Enemy Morale

Sustained use of PSYOP stressing unfair treatment of ethnic, economic, social, political, and regional groups or minorities can produce a divisive and depressing effect upon the morale of enemy units and the civilian population. Exploitation of a deteriorating enemy military and political situation can also accomplish this.

Reduce Combat Efficiency

Steady psychological attacks upon morale, integrated with other military operations, can lower the combat effectiveness of enemy troops. This may be done by emphasizing the growing strength of allied forces, the lower civilian morale, enemy combat defeats, and destruction of enemy industrial capacity.

Encourage Defection and Desertion

Enemy soldiers subjected to psychological operations over extended periods can be induced to malingering, desert, defect, fail to perform their duties effectively, fight dispiritedly, and surrender.

Deceive

PSYOP can support tactical deception plans of the commander; e.g., convey deceptive information. But no deceptions which are contrary to the law of war (e.g., broadcasting falsely that an armistice or cease-fire has been agreed upon) will be conducted. Use of deceptive information requires that subsequent effects on the future credibility of PSYOP information be carefully considered.

These objectives are attained by propaganda and deliberate actions with planned psychological impact. Any means of communication may be used to deliver the message. Whether used singly or combined, the entire communications effort must be centrally coordinated and integrated. Messages may be transmitted overtly or covertly.

LIMITATIONS

The psychological operator must be aware of and overcome the limitations of PSYOP. These include:

Enemy Countermeasures

The effectiveness of PSYOP is limited by the enemy's ability to use political and military sanctions against people within its territory and its ability to intercept

communications, emanating both within and beyond its boundaries, aimed at people within its territory. Enemy counterpropaganda will also act as a damper against US/friendly psychological operations.

Incomplete Information

Lack of or incomplete information will limit the number of vulnerable targets.

Difficulty Evaluating Effects of Own Propaganda

Stringent enemy restrictions on news, public discussions, and travel limit accurate assessment of US/friendly PSYOP efforts.

Lack of Coordination

A lack of planning and operating coordination between military units, headquarters, and services and between civilian and military agencies will limit and adversely affect US/friendly PSYOP.

Lack of Qualified Personnel

Effective PSYOP require dedicated, imaginative people who know the language and customs of the target audience and are familiar with the political, economic, social, psychological, and ideological conditions of their society. Such people are scarce.

Law of War

The psychological operator is limited in his actions and words by the proscriptions (listed in FM 27-10) of the laws of war set forth in the Hague Conventions, Hague Regulations, and Geneva Conventions of 1949, and other sources. These proscriptions constrain the actions of the United States in conflict situations and must be observed by US military personnel.

MAJOR OPERATIONAL CONSIDERATIONS IN STRUCTURING A PSYOP FORCE

MISSION

The PSYOP mission is derived from that of the supported force; therefore, the mission of the supported force is the major factor in structuring a PSYOP force.

Realistic appraisals must be made of PSYOP capabilities within the limits of national policy and command directives, and available personnel and material resources. The ability to plan and execute a PSYOP campaign may be limited by a number of factors, such as:

- US/friendly nation national policy.

- The realities of unit, service, or agency priorities.

- United States vis-a-vis friendly nation priorities.

- Deficiencies in number and quality of personnel.

- Lack of and deficiencies in material resources: facilities, equipment, parts, and supplies.

TARGETS

The primary targets of PSYOP are groups: political, social, economic, cultural, ethnic, racial, religious, military, intellectual elites, farmers, laborers, government employees, white collar workers, etc. But knowing your target is not enough; the type of media through which the target audience can be influenced must also be known.

Accessibility of the target will determine the type of campaign to be implemented and the propaganda mix. The major factors determining target accessibility are political, geographic, literacy rate, and communications media available to the source and to the target. These factors play a key role in determining the type campaign to be implemented and the media mix.

MEDIA

Among the major factors determining the proper media mix are the present or anticipated political situation, geographic restraints, the literacy rate, and the availability of a particular medium. National sovereignty, national policy, international relations, the location of the target within political boundaries, and whether the target is under US, friendly, enemy, or neutral political control must be considered.

The geographic area of operations is as important in planning and executing a psychological operation as it is for all other operations. The location, climate, physical features (large bodies of water, high mountains, extensive desert, swampland, vast plateaus, low mountain ranges, great prairies, etc.) not only determine the type of propaganda that can be disseminated and the means, but, more important, the type, density, and availability of target audiences.

The psychological operator must keep in mind that within a geographic or political area, the literacy rate of target groups may vary from almost complete illiteracy to complete literacy. The literacy rate of the target audience will determine whether printed material should be distributed, and, if so, what type. It will determine the type of radio, television, audiovisual, and theatrical programs to be presented as well as the level and type of interpersonal (face-to-face) communications.

While the most effective medium is face-to-face communication, major reliance must be placed upon use of mass media in PSYOP campaigns. Logistical considerations and message authenticity and credibility force the PSYOP planner and operator to look to "on-the-ground" facilities, equipment, personnel, and supplies.

Use of local media: Policy, agreements, and legal contracts must permit the use of local mass media resources, and funds must be available to obtain their use.

Except for normal business agreements and contracts, use of local mass media resources in foreign areas requires joint US/HC approval. Legal clearances must be obtained before planning for, or attempting to use, local media.

Availability of receiving equipment: Two of the major mass media, radio and television, require both transmitting and compatible receiving equipment.

It is not enough to know that radio and television equipment are available (and perhaps in widespread use). The planner and operator must also know whether they are compatible with his transmitting equipment. He must know whether the equipment in the hands of the target will receive the message. For example, radio communications

may be under strict, closely policed government control, which limits radio receivers to a single government channel. It may not be feasible nor economical to slide into this channel. Thus, radio cannot be used.

Television: Throughout the world, there are several television transmission systems requiring specifically designed receivers: the receivers compatible with one particular system are not compatible with others.

LOGISTICS

Use of locally available supplies not only lends authenticity to propaganda, but also alleviates the logistical burden of transoceanic or transcontinental shipment. The best sources for locating local material are indigenous people who have worked in the communications field. US and host government and private personnel and agencies can render great service in locating facilities, equipment, and supplies.

In an overseas operation, the breakdown of a simple part may put a vital piece of equipment out of operation for months. If locally produced equipment is used, parts are usually readily available for installation, thus reducing the downtime. Maintenance is always a factor in using complex mass media equipment. Use of locally manufactured equipment that can be readily repaired by indigenous mechanics who have been factory or dealer trained simplifies maintenance problems and eliminates the costly, nonproductive process of training local mechanics to repair unfamiliar US-produced equipment.

CONTROL

The missions and location (geographic spread) of supported units must be considered in determining the management responsibilities of PSYOP command and control personnel. Supported forces may be so widely spread out that additional PSYOP command and control personnel are required. Due to the nature of PSYOP management (central policy guidance with decentralized execution), the span of control must not be strained. An overly wide span of control can result in an uncoordinated policy that is counterproductive to psychological operations.

LANGUAGE

Spoken and written languages must be authentic. The final product of propaganda reaches the target as language, written or spoken. It is not enough that the language be scholastically accurate. It must also be currently authentic for each target group. This is particularly true of dialects. The target subconsciously weighs the language used; if it isn't authentic, the message fails.

FOREIGN NATIONAL AUGMENTATION

Augmentation is the rule rather than the exception. The US soldier who can get the message across to a foreign target audience is a rarity. Communications, even between people having a common language, heritage, and way of life, are less than perfect. The problems of communicating are compounded in intercultural communications with differing basic concepts of time, divergent core values and objectives, and different interpretations of phenomena and meanings of words. The job can best be done by local nationals or persons formerly resident in a target area (or among a target group) long enough to acquire the cultural traits of the target.

Knowing the language of the target audience does not mean a person has a thorough understanding of the target. For effective PSYOP, the psychological operator must have complete empathy with and be totally immersed into the total current environment (life) of his target audience. His background must enable him, intellectually, emotionally, and culturally, to visualize the circumstances of the target audience from their point of view, situation, and condition. He must know what is most important to the target audience at the particular time his message reaches them. **He must know his target thoroughly.**

The spectrum of requirements for foreign personnel augmentation ranges from idea men, researchers, writers, professional communicators, administrators, artists, and announcers, through translators/interpreters, technicians, artisans, and skilled personnel, to maintenance and service personnel, skilled, semiskilled, and unskilled workers. It may be difficult to find a sufficient number or any persons who have the required education, ability, expertise or skills to meet the needs of the unit. One possible means of overcoming this deficiency is to break the requirement or job into simple components as is done on industrial mass production lines.

Foreign social scientists required to learn the psychological characteristics of a target audience may be unavailable. In this case, empirical observations may be taken from policemen, reporters, political figures (mayors, village or tribal chiefs, etc.), doctors and other healers (shamans, witch doctors, nature healers, etc.). Use of this technique enables the psychological operator to meet a practical need by practical means, with realistic feedback having a practical use.

The idea man must have an intimate, firsthand knowledge of the target people. He must project himself into the target area. He should be well educated by practical experience and background. If he does not have a better than normal education, he must be well read and have an intimate contact with a broad spectrum of the target. Above all, he must know how to put ideas into words, symbols, pictures, and action. In addition:

He must know how to write.

He must be able to make people react.

He must anticipate the reactions of his target.

He must be politically aware.

He must be fluent in the language or dialect of the people.

He must have empathy with the target.

FOREIGN PERSONNEL AVAILABLE

There are three basic sources of foreign personnel:

Local hire.

The majority of foreign personnel employed will be locally hired civilians.

Seconded government personnel.

Another source will be host country government employees whom the host country makes available for use.

Host country military personnel.

A third, excellent source is indigenous military personnel. These individuals who may function across the entire spectrum of PSYOP skills can be more readily deployed and be used in more dangerous areas than civilians.

Another source of foreign personnel is third country nationals. Use of these people may be limited because of potential friction with host country nationals and possible legal problems. They may be limited to a few otherwise unobtainable experts and used for only short periods. In some cases, third country personnel could be nationals of close allies of the host country, and their use would thus pose no particular problem.

Authorization for use of host country personnel is generally proscribed in US/HC agreements and by theater directives. The agreements and directives spell out the precise details of employment--how, when, and where the personnel may be used; wages, bonuses, and other compensation; vacations, leaves, health, and fringe benefits; meals and other privileges; and termination compensation.

ROLE OF FOREIGN PERSONNEL

Almost all propaganda material will filter through the foreign augmentation personnel--from the raw material received as unprocessed information, through the processing stage, to final dissemination and presentation to the target audience--whether as propaganda acts or deeds, interpersonal communications, audio, visual, audiovisual, or printed propaganda.

This is true throughout the entire spectrum of conflict and psychological activities--in pursuit of strategic or tactical objectives; in consolidation operations, FID, UW, or PW operations; or in advisory, training, and assistance missions.

Security Clearances

Ideally and normally, foreign augmentation personnel must be investigated and cleared by appropriate host country and US security agencies. (This is also by US/HC agreement.) Circumstances may arise, however, when personnel may be hired who do not have the desired personnel clearance. The US psychological operator must be aware of the security requirements and procedures and must adhere to the letter and spirit of directives and regulations covering this facet of his responsibilities.

Allegiance of Foreign Personnel

Foreign augmentation personnel owe primary allegiance to their own country, political entity, region, ethnic group, culture, and self-interest. Such allegiance will undoubtedly take precedence over that given to the United States. Normally, allegiance to the United States will extend to those areas and to the extent that the US interests coincide with those to which the foreign personnel give primary allegiance. This may best be summarized by a statement of a foreign employee: "... after all, you Americans must realize that I must live and work here after you are long gone."

Conversely, some local augmentation personnel take on a US orientation (coloring), identifying primarily with their US employer. In so doing, they lose their local perspective (so vital to the success of the operation), perceiving the local target audience from a pseudo-US point of view. The work of such personnel loses its original, essential authenticity and accuracy. This situation sometimes cannot be avoided, and it is difficult for the person(s) having assumed this point of view to regain their original perceptions. Members of host country minorities and of outgroups are particularly prone to this type of identification.

A third, not uncommon, situation is that in which foreign augmentation personnel attempt to "please" the US Army psychological operator, by producing work or a propaganda product which they believe he desires, regardless of its authenticity, accuracy, or potential effectiveness.

Constant Evaluation Required

Because of the problems inherent in intercultural production of propaganda, and the absolute need for authenticity and accuracy, the work of foreign augmentation personnel requires continuous, objective evaluation and cross checking. This must be done to assure that themes are appropriate, symbols correctly interpreted, cultural and social factors accurately evaluated and placed in proper perspective, and that messages are relevant to the interests and frames of reference of the target audience and the psychological objectives.

Duties and Responsibilities of US Personnel

The use of foreign augmentation personnel in the most sensitive and important positions and duties, and in the most menial, does not relieve the US Army psychological operator of any of his supervisory responsibilities or duties; of his responsibilities for assigned tasks, objectives, or missions; nor of his security responsibilities.

On-the-Job Training

Among the major responsibilities, and one whose fulfillment will pay great dividends, is that of implementing an on-the-job training program for local employees. Not only does it build esprit de corps, but it also results in greater efficiency, a better product, and less downtime equipment. It builds a cohesive organization that gets the job done.

*Chapter Fourteen***INTELLIGENCE FOR PSYOP****14**

Effective psychological operations are dependent on the availability of timely, continuous, accurate, detailed intelligence at all levels of command. Only with timely, accurate intelligence can target audiences be identified and analyzed, effective PSYOP campaigns implemented, and persuasive messages prepared and disseminated. The major areas of intelligence activities in support of psychological operations are:

- Research
- Target Analysis
- Propaganda Analysis
- Effects Analysis

Improperly conducted intelligence activities can cause PSYOP campaigns to fail. Target groups may be incorrectly identified, vulnerabilities not properly perceived, inappropriate themes selected, incorrect media chosen, and improper dissemination techniques used.

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TYPES OF INTELLIGENCE FOR PSYOP

PSYOP require information concerning or affecting the attitudes and behavior of any target group, military or civilian. This includes information on the social, political, economic, psychological, and ideological environment within the target area. PSYOP have the same combat intelligence requirements as other elements of the force.

CATEGORIES

Intelligence required by PSYOP is divided into two categories: area, special, and basic PSYOP studies; and current data.

Area, Special, and Basic PSYOP Studies: The area, special, and basic psychological operations studies of countries represent an established data base.

Area studies are descriptive in nature and are written for the specific purposes of the proponent agency (e.g., unconventional warfare, civil affairs, etc.). They are usually updated periodically.

Special studies are conducted in response to special requirements and generally contain information of greater depth than other studies. By focusing on one aspect of a country or society, special studies can identify communications patterns and potential target groups, and may contain indicators of the effectiveness of previous PSYOP. They are usually updated on an as-needed basis.

Basic PSYOP studies (BPS) are oriented toward issues of PSYOP relevancy in given countries or areas. They are updated periodically according to priorities established by JCS. A basic PSYOP study, in conjunction with the National PSYOP Policy, is then used as a basis for tactical PSYOP programs. Potential target groups are identified in the BPS.

Current data is used to analyze and select specific target audiences and to determine their susceptibilities. Current tactical intelligence is the information needed to conduct day-to-day operations successfully. It is used to:

- Determine PSYOP essential elements of information (EEI) and other intelligence requirements (OIR) which will later become part of the overall collection plan in conjunction with the operational plans and needs of the supported commander.

- Select themes.

- Provide a basis for developing messages.

- Supplement and amplify existing background data to pinpoint vulnerabilities.

The intelligence required to conduct PSYOP is generally obtained from **unclassified** material. Most of it comes from newspapers, magazines, books, academic journals, studies, and foreign broadcasts. Information obtained through military channels is often classified, not because of the sensitive nature of the material but to protect sources or to conceal the fact that military intelligence personnel are interested in certain unclassified, easily obtained information.

Most of the information in intelligence reports classified for the latter two reasons can be found in unclassified references, and these references should be used as much as possible. Although classified information cannot be used, it is useful as background and reference material.

THE INTELLIGENCE PROCESS

The intelligence process is generally the same for PSYOP as for any other activity requiring intelligence data. PSYOP intelligence needs are integrated into the intelligence efforts of the command by the staff intelligence officer (G2/S2). The PSYOP staff officer and PSYOP units use established intelligence channels to obtain intelligence. They also collect information for the command.

A PSYOP unit has an organic research and analysis (R&A) section to process information. It also collects intelligence during operations when teams are engaged in face-to-face communications. **There is no fixed PSYOP organization to collect intelligence.**

For PSYOP to be effective, qualified PSYOP and intelligence personnel must work together as a team. Individuals with a social science or political science background are ideal; however, training and experience are often more important than educational background.

PSYOP ESTIMATE OF THE SITUATION

Intelligence is needed to form a realistic PSYOP estimate of the situation. This document (or thought process) is designed to determine the best course of action. The estimate of the situation is the end product of the R&A process. It gives a current picture of potential vulnerabilities, susceptibilities, and the psychological impact of the proposed courses of action. The estimate may be written or presented orally. It is normally prepared after receipt of the commander's mission and is based on the commander's planning guidance.

The PSYOP estimate of the situation is valid only for the specific area for which it is prepared.

Since conditions change with events and time, it must be continuously updated as changes occur. Also, different estimates will be needed for operations in different areas. (See appendix D.)

DIFFERENCES BETWEEN THE BASIC PSYOP STUDY AND THE ESTIMATE OF THE SITUATION

The Basic PSYOP Study

The BPS is a detailed background document which describes the PSYOP-relevant vulnerabilities, characteristics, insights, and opportunities that are known about a country susceptible to exploitation. It contains all known political, social, military, and economic factors relevant to PSYOP, the psychological implications, and possible ramifications. It provides sufficient information on a country to prepare and conduct a PSYOP campaign. It is a source document for preparation of the estimate.

The PSYOP Estimate of the Situation

The PSYOP estimate of the situation portrays the current situation in the target country and considers any specific tactical mission or planning guidance.

ORGANIZATION TO SUPPORT PSYOP

To perform adequately the intelligence research and analysis functions required to conduct PSYOP, the intelligence personnel assigned to PSYOP units should be functionally organized. A suggested type organization could include:

Research desks, each staffed by one or more people, with primary responsibilities for areas or regions. Activities include propaganda analysis, preparation of BPSs, target analysis, and furnishing information to support media output. Desk personnel should perform quantitative and qualitative propaganda analysis and establish research files.

An Effects Analysis Section, which is generally concerned with analyzing the effects of US PSYOP on the enemy. It may also be concerned with the effects of enemy PSYOP. Some specific duties should include pretesting and posttesting, review of intelligence reports for signs of enemy reaction to US PSYOP, analysis of captured directives and documents, and the conduct of attitude surveys.

An Editorial and Production Section, which prepares PSYOP material for printing.

A Collection and Publication Section is recommended. It would function as a reference library and distribution center, acquiring, storing, routing, and disseminating all documents in the unit.

ESSENTIAL ELEMENTS OF INFORMATION (EEI) AND OTHER INTELLIGENCE REQUIREMENTS (OIR)

(See FM 30-5)

Essential elements of information are the critical items of information regarding the enemy and his environment needed by the commander by a particular time to relate to other available information and intelligence in order to assist him in reaching a decision.

Essential elements of information consist of a series of specific and pointed questions designed to get the information needed on target groups. These questions should cover the basic psychological, sociological, politico-military, and economic environment of the area and target, such as:

- Attitude of target toward present situation.

- Complaints.

- Ethnic origin.

- Frustrations.

- Languages used.

- Problems.

- Tensions.

These are just a few of the areas about which definite information must be obtained before the vulnerabilities and susceptibilities of the target group can be determined.

Other intelligence requirements derive from command requirements which do not qualify as EEI and from staff requirements. OIR consist of information (other than EEI) on other capabilities, vulnerabilities, and characteristics of the area of operations which may affect the accomplishment of the mission.

Many of the EEI and OIR are of a recurring type, even though the subject (target group) may vary. The areas above can and should be broken down into subelements when developing EEI and OIR.

The intelligence officer developing the requirements should not assume that the collectors know the situation and what information to seek. For example, the EEI/OIR needed on a hostile civilian population will differ from the EEI/OIR needed on enemy troops. The requirements should be explained as clearly as possible and coordinated with other sections involved. Coordination should be effected with the PSYOP sections involved in planning operations; preparing and disseminating media, and developing PSYOP campaigns, to insure that their information needs are included. (For formulation of EEI and OIR, see p. 4-1, para 4-2; p. 4-2, para 4-5; and index, FM 30-5.)

Vulnerabilities and susceptibilities of the target are identified from target analysis, which is a combination of information gained from the EEI, OIR, and R&A.

Vulnerability

A vulnerability is a condition which can be exploited by the psychological operator. Vulnerabilities can be developed from either strengths or weaknesses. They exist within friendly, enemy, and neutral targets. They may be based upon situational or cultural factors.

Susceptibility

Susceptibility is the degree to which the target can be influenced to follow the course of action desired by the psychological operator. Susceptibilities determine the lines of persuasion (themes) which can be used to influence the target. Susceptibilities are determined through the use of intelligence, information, and objective reasoning.

If susceptibilities and vulnerabilities are not properly assessed and identified, themes (the basis of successful PSYOP campaigns) will be inappropriate to the target audience, resulting in inappropriate, ineffective campaigns.

Using all of the above properly, intelligence personnel must develop and recommend specific themes that will have the desired effect on the target groups. Themes must conform to US PSYOP policy and be timely, consistent, and credible. Appropriate symbols (visuals signs or objects used to convey a message or idea) increase the impact of themes.

The decisions on the media and techniques to be used will be based on the initial research and the intelligence gathered. Media development and dissemination are discussed in chapters 17 and 18.

INTELLIGENCE ACTIVITIES

Basic Psychological Operations Study (BPS)

The BPS, a basic source of valuable information, is a systematic description of the factors that affect PSYOP in a country. The format and guidance on what to include in a BPS are presented in appendix C.

When either reading or writing a BPS, certain terms pertaining to the BPS must be kept in mind:

Relevant event. An observed behavior of a type which can be described in terms of "who does what to or with whom." It has implications affecting the behavior of a large segment of the country's population or the political system. A relevant event has five essential components: an actor, a target, some activity, an issue area, and time. It does not ordinarily, by itself, constitute an issue.

Relevant issue. A highly emotional issue, deeply rooted in the country's history, customs, fears, and foreign policy, which, under certain circumstances, could cause either change or resistance to change in the population or political system.

Relevant data. Events of importance to large segments of the population because they are sources of conflict.

Intelligence Analysis

Collected information must be analyzed before it is intelligence. The analytic process relies heavily on mechanical devices and quantitative techniques so that all information on related subjects can be identified and compared. Some frequently used aids are charts, maps, tables, periodic digests, cataloging, and filing systems.

Completeness and standardization are essential because the collected information must be categorized and carefully evaluated against other related information. Each piece of information is scrutinized to determine its relationship to the whole picture and the extent to which each bit of information confirms, supplements, or contradicts others. If the analyst has any doubts about the truth or relevance of any information or reports, he should state these doubts clearly. No analyst will ever write a perfect report, completely accurate and unbiased. To make allowance for human error, as many independent reports as possible should be gathered on each item to either confirm or deny its probability.

In interpreting information, an analyst must always consider:

What is the relationship of this information to what is already known?

Does it alter, confirm, refute, or add to the information previously received?

Does it tend to confirm or refute the existing estimate of the enemy situation?

Target Analysis

Target analysis supports the development of PSYOP estimates, plans, orders, and directives. It is covered in detail on page 14-10.

Propaganda Analysis

Propaganda analysis supplements the more conventional forms of intelligence. It is valuable because it indicates conditions or attitudes that exist within an area of operations. Conclusions based on propaganda analysis should be checked out by other intelligence methods before being fully accepted. See chapter 16 for a detailed study of propaganda analysis.

THE RELATIONSHIP OF THE PSYOP INTELLIGENCE OFFICER WITH THE INTELLIGENCE STAFF OFFICER, G2/S2.

Since PSYOP is a user and producer of intelligence, the PSYOP intelligence officer must work closely with the G2/S2 both in collecting intelligence for the command and in acquiring data which specifically support EEI and OIR of PSYOP interest.

Some PSYOP abilities and factors that the commander and his staff must be aware of and take into account while planning their operations are:

The ability of PSYOP personnel to forecast situations which may be exploited by either US and friendly forces or by the enemy. If a proposed course of action will create a situation or event that could serve as the theme for an enemy propaganda campaign, the commander and his staff must be aware of this before they make a decision.

The ability to explain US objectives, goals, and policies to the enemy and to hostile civilians.

The ability to contribute knowledge of the psychological vulnerabilities of enemy units and populations to meet order of battle, combat, and strategic requirements.

Some specific tasks which can be levied upon PSYOP in support of intelligence operations are:

Determine if war weariness exists among the military and civilian population, and, if so, how to exploit it.

Identify and exploit enemy mistakes with propaganda.

Find PSYOP opportunities to support the command.

Identify enemy propaganda, its approaches and themes.

Identify differences and hostilities in enemy groups.

Determine how to overcome the effects of enemy indoctrination.

SOURCES OF INFORMATION AND INTELLIGENCE

Intelligence Collection Requirements (ICR)

Information and intelligence needed on a continuous basis, over a long period of time, can be designated as an intelligence collection requirement (ICR) to be automatically added to

all future collection plans and sent to collection elements. Unless a specific termination date or event is given, this will continue until the ICR is cancelled by the originator.

Interagency Document Request

The Interagency Document Request, DD Form 1142, is a convenient and common way to request information or intelligence, in documentary form, from components of the US Government. When this form is used to request classified information, it is sent through intelligence channels for proper validation and transmittal. This is done to give higher intelligence authorities a means to keep aware of intelligence and information requests from lower level units. If the requested document is not held in a repository at a lower level, the DD Form 1142 will go to the Defense Intelligence Agency (DIA) library. A PSYOP unit must have a DIA customer number before such a request will be honored. The Interagency Document Request must cite the particular document wanted and length of time wanted.

DIA Dissemination Center

The DIA Dissemination Center mails documentary materials directly to its customers. Materials are accumulated according to the stated subject interest and periodically mailed directly to DIA customers. All DOD components conducting or involved in intelligence research and analysis, collection, processing, and storage are entitled to become customers of the DIA and to be mailed documents that meet their interests.

Need for Specific Information

If a specific item of factual information is needed and not available, the PSYOP unit may fill out an Intelligence Collection Requirement form, DD Form 1365, in accordance with DIA Instruction 58-1. This request must go through the staff intelligence officer and through intelligence channels to an approving official. The ICR will then go to all those intelligence collection agencies able to collect such information. This is a time-consuming process appropriate only for information of strategic value.

In all dealings with the intelligence community, PSYOP personnel must realize that intelligence is collected on a combat priority basis, and generally, PSYOP is not given the highest priority. For this reason, documentary information obtained from the intelligence community on issues of interest to PSYOP may be incomplete or perhaps nonexistent.

Written and Human Intelligence

The PSYOP researcher can evaluate and determine the current issues of primary concern to the target from newspapers and magazines. Since they are published regularly, changes in attitudes and issues can be recognized and incorporated into propaganda campaigns.

Bibliographies, such as the Reader's Guide to Periodical Literature and Public Affairs Index, list articles appearing in magazines and other publications. For a current topic, or for one with depth in time, the researcher can use these bibliographies to compile a list of publications on a particular subject. Some publishers issue bibliographies which deal only with one publication. For example, the New York Times Index permits the researcher to search out and locate articles on a particular topic that have appeared in the New York Times.

Captured documents, official and unofficial, are a good source of information on enemy plans, weaknesses, policies, and needs. Official documents are plans, orders, maps, manuals, government studies, and other such items. Unofficial documents include diaries, pictures, and personal letters.

PSYOP personnel conduct interviews and interrogations to obtain information peculiar to PSYOP.

Prisoners-of-war and defectors are normally able to provide information on the attitudes and conditions within their units. This includes such information as the quality of leadership, personnel policies, disciplinary problems, medical conditions, and other facts and opinions which can be used in PSYOP planning. It is important that the PSYOP interrogator has early, direct access to these individuals (the interrogees). If possible, it is best to sit in with the intelligence interrogator during his briefing. This saves time since the intelligence man will be interested in many of the same areas as the PSYOP interrogator.

Refugees can give a grass roots view on conditions and attitudes of the populace and the area they come from.

Civil administrators, aware of the needs and attitudes of the people for whom they are responsible, can give information on the plans and means to solve local problems and can identify problems which have not yet been solved.

Civil and paramilitary police are knowledgeable of the area, its people, their habits, political leanings, and every aspect of community activities.

Liaison

Liaison with agencies and groups outside of the Department of Defense to make them aware of PSYOP information needs often can produce much needed information. Some agencies which can assist PSYOP in obtaining information about local conditions and the situation in a target area, or among target groups, are:

- Treasury Department
- Federal Bureau of Investigation
- Central Intelligence Agency
- Political Section, US Embassies
- International Communication Agency
- US Agency for International Development
- Drug Enforcement Administration
- Foreign Broadcast Information Service
- Library of Congress
- Publication Procurement Officers

PSYOP AUTOMATED MANAGEMENT INFORMATION SYSTEM (PAMIS)

PAMIS is covered in chapter 15. It is a source of information which can be used in PSYOP for

various purposes. It can help the PSYOP unit to:

- Prepare PSYOP estimates.
- Prepare PSYOP annexes.
- Analyze enemy target groups.
- Identify enemy vulnerabilities.
- Analyze media from the target area.
- Analyze propaganda received from friendly areas.
- Insure propaganda appropriate to the target.
- Prepare Basic PSYOP Studies.

TARGET ANALYSIS

Target analysis is a detailed and systematic examination of processed intelligence to identify and locate target audiences, identify conditions, pinpoint vulnerabilities, establish objectives, and obtain pertinent information to guide PSYOP personnel. It is the basis for the development of PSYOP estimates, plans, orders, directives, and campaigns. It is also the basis for selection of themes, symbols, and media and for the development of persuasive messages.

Identification and Location of Target Audiences

The initial step which is undertaken by the research and analysis teams is the identification of tentative target audiences. After selection, each one is systematically examined to determine its suitability. This profiling of each target is the core of the target analysis process.

To aid the analyst in identifying and locating potential target audiences, a general guideline has been established:

Target audiences are collections of people who share the same predispositions, which, when successfully manipulated, will lead to the accomplishment of the desired psychological objective.

Of particular importance is the phrase "share the same predispositions." For PSYOP purposes, target audiences are classified as groups, categories, and aggregates.

Groups. Groups are the preferred target audience because they normally are functional, with members bound together by common activities and goals. Since there is a specific reason for its existence, the group can be studied more precisely than any other collection of people. Moreover, more valid and definitive statements can be made concerning group conditions and attitudes.

Categories. Often it will be necessary to direct persuasive communications to large collections of people not classified as groups. To satisfy this requirement, the target analyst may identify a category as a target audience. Unlike groups, members of categories have no clearly definable reason for gathering and normally would carry on no personal interchange, thus limiting the persuasion possibility.

When studying categories, the analyst may find only very tenuous common interests, such as economic, education, social mobility, and ethnic identity among the members. Therefore, information obtained about categories will be more general than that obtained about groups.

Aggregates. A collection of individuals identified by a common geographic location may also be used as a PSYOP target audience.

Possible Results of Persuasive Communications

Persuasive communications should cause the members of a category or aggregate to form common points of reference. Should these people develop sufficient interest, however, they will technically become a group. As a group, this assortment of people will make a better PSYOP target.

As a general rule, the target analyst should attempt to analyze both categories and aggregates precisely by seeking to identify primary and secondary groups within each collection.

Selection of target audiences. Target analysis is conducted to determine if each tentative target is susceptible and will be effective in the achievement of specific psychological objectives. Even though several target audiences may be vulnerable, they may not be equally susceptible and effective in this respect.

Target analysis worksheet. To assist in deriving specific and useful information for the conduct of PSYOP, a systematic procedure has been devised. This procedure calls for the use of the target analysis worksheet (appendix F). The worksheet is a guide for systematically analyzing data relative to tentative targets: the national objective, mission, target audience, target conditions, attitudes, susceptibility, psychological objective, target effectiveness, and impact indicators.

The national objective is obtained from US policy statements and documents. Sources for US objectives relevant to US Army PSYOP might be unified command military plans, ICA Country Program memorandums, Departments of State and Defense policy statements, and other related command and PSYOP guidances. The PSYOP mission may be directed or derived from a stated mission, or, for planning purposes, it might be deduced from operational objectives.

STEPS IN TARGET ANALYSIS

Step 1: Select a tentative target for analysis.

Select one tentative target from those identified in the Basic PSYOP Study. This selection should be based on:

- The supported tactical commander's needs and plans.
- The PSYOP mission as directed by the supported tactical commander.
- The factors which indicate the tentative target's vulnerabilities which can be breached with persuasive communication.
- The target's predispositions relative to a mission.
- Other situational factors which indicate the suitability of the group as a susceptible and effective target audience.

Step 2: Determine conditions affecting the target.

Conditions of the target refer to the external elements which affect the target but over which they have no control. These circumstances are the result of social, economic,

political, and military pressures and the physical environment.

Each condition selected must be considered in view of the target audience's awareness of the condition. The analyst must surface positive and negative influences to insure that a biased image of the target audience is not formed. The analyst must also consider the PSYOP task to be accomplished.

Step 3: Analyze attitudes of the target audience.

Attitudes may or may not coincide with behavior. They are the determinants of noncoerced behavior. For this reason, a major goal of a campaign is to reinforce or develop attitudes which support US psychological objectives. In addition to determining positive and negative attitudes, the psychological operator must determine their intensity; i.e., how strongly the target audience is predisposed to respond to the conditions which affect it.

Step 4: Determine target susceptibilities.

Susceptibilities vary with each PSYOP objective because the target responds in different ways and intensities to different appeals. Susceptibility will depend in large measure upon the values, needs, motivations, and drives of the group.

Values which must be taken into account when dealing with susceptibility include:

By whom do they expect decisions to be made? Do they accept decision from a single, all powerful source and believe that this is the way things should be done? Is there individual decisionmaking in the target group without regard for external authority, or is the democratic approach used?

How does the target regard man's relation to the physical and supernatural elements of nature? Is he superstitious, a stoic, or a fatalist?

What regard do members of the target audience have for time? Are they preoccupied with the past, present, or the future? If the time perspective is oriented toward the past, appropriate appeals might stress the need to preserve the customs and practices of the past.

Step 5: Formulate the psychological objective.

The psychological objective is based on the specific and implied tasks obtained from the mission and from target analysis. A psychological objective might be a single step or a series of intermediate steps designed to lead the target audience towards the desired behavior or attitude.

Should it be necessary to have a series of intermediate objectives, each one must be measurable and must accurately define the specific behavioral or attitude change desired. Each intermediate objective must be completed in logical order.

When establishing measurable activities for the target audience to accomplish, present activity levels must be determined and changes brought about by the psychological operations noted. Changes in attitude are more difficult to measure quantitatively than changes in behavior.

Attitude changes cannot be measured directly; they must be inferred through changes in the observed behavior of the individuals who constitute the target group. The psychological operator must, therefore, identify the relevant behavior indicators, determine the existing pattern of such activities, and establish methods by which to measure subsequent changes.

Psychological objectives are classified as cohesive and divisive.

Cohesive objectives: Cohesive objectives, whose successful achievement would strengthen or more closely unite the total society or particular target groups, encourage the individuals of the target audience to place the collective good above the individual good. Example objectives are good will, encouragement, compliance, and cooperation.

Good will is used to promote feelings of friendship toward the country or agency sponsoring the PSYOP effort and to convince the target audience of the desirability of the programs and goals of the sponsoring country.

Encouragement is used to foster confidence in the target audience in the success of the policies of the sponsoring country or agency and its allies, to sustain the morale of elements in the friendly country, and to identify the aims of the sponsoring country or agency with the popular or national aspirations of the people.

Compliance and cooperation are used to win acceptance of the policies of friendly authorities and the sponsoring country's military, paramilitary, and public safety forces; to encourage and stimulate support and participation in national programs; and to attract support of the country's aims and programs.

Divisive objectives: Divisive objectives are designed to separate the individual from his group, to separate a group from other groups, to separate a group from the society, or to disorganize a group or society. These objectives encourage the individuals in the target audience to place their self-interest above the interests of the group. Examples of divisive objectives are discouragement, defeatism, apathy, hostility and non-cooperation, discord, withdrawal, panic, subversion and resistance, surrender, defection, and desertion.

Discouragement, defeatism, and apathy are used to depress the morale of the target audience in order to reduce the degree of effectiveness of groups supporting popular or national aims dangerous to the interests of the sponsoring country.

Hostility and noncooperation are used to promote disbelief in the policy and ideology of the local and national authority hostile to the sponsoring country.

Discord is used to stimulate dissension and conflict within or between specific groups.

Withdrawal is used to intensify concern of the individual with his personal situation in order to reduce his support of group and national goals.

Panic is used to promote disorganized or confused behavior.

Subversion and resistance are used to encourage divisive and antipolitical acts, thereby undermining the political structure of the country, and to promote and support resistance movements against authorities hostile to the sponsoring country.

Surrender, defection, and desertion are used to encourage individuals or groups, among enemy military forces, to place personal considerations over group interests, thereby undermining military authority.

Step 6: Determine target effectiveness.

If it is determined that the target audience can be persuaded, its relative ability to implement a psychological objective must be assessed. The most obvious consideration pertains to the environment of the target audience. The constraints on the target audience which limit its ability to attain a significant objective must be determined. The analyst must also evaluate the ability of the target audience to act on suggested solutions.

In determining the effectiveness of the potential target audience, its relative power to influence other groups must be assessed. This requires a study of the power structure and of the relative positions of the potential target audiences within this structure; that group to which the potential target audience responds and under what circumstances it responds are given particular attention. Other groups in the area that respond to the dictates and desires of the potential target audience must also be noted. Any circumstances under which the standard relationships between the potential target audience and other groups in the area may be altered should also be determined.

The use of key communicators to reinforce the propaganda message and influence members of the target audience must be considered. In the military, especially among hostile military targets, key communicators are most likely to be political officers or the most courageous or aggressive members of the unit. When selecting key communicators, certain characteristics must be identified; among these are prestige, numbers, dispersion, and power.

Prestige: The individual who has prestige is called upon for guidance and leadership by virtue of his position. The prestigious person may rise to power or position because of age, influence, title, or other factors. Because other members of the group expect the prestigious positionholder to provide guidance and make decisions, they are prepared to follow him.

Numbers: There must be enough key communicators within the target audience to influence the audience. If there are only two communicators in a group of 500, their influence may be nullified by the will of the majority.

Dispersion: To be effective, key communicators must be adequately dispersed among the target audience. Dispersion insures maximum influence over the majority of the audience.

Power: The most critical characteristic of the key communicator is power which must be viewed from several perspectives of power: coercive, reward, legitimate, and referent.

Coercive power is the influence that an individual or group exerts over another, based on the ability of the persuader to punish. **It is effective only so long as the power to punish exists.**

Reward power stems from the persuader's ability to reward desired responses. **Reward power provides more satisfactory results over an extended period of time than does coercive power.**

Legitimate power refers to the mutually acknowledged right of an individual or group to control others. It is exemplified by platoon leaders, elected political officeholders, kings, parents, and supervisors.

Referent power is that influence carried by a particular social status, usually based on wealth, political position, birthright, and other factors that have no legal status. It is a common factor in day-to-day life, stemming primarily from the efforts of individuals to identify with a group.

When selecting key communicators, PSYOP personnel must keep in mind that key communicators are not supposed to interrupt the flow of communications. Their job is to receive the message and, by their interpretation, reinforce it among the people in the target audience.

If a potential target audience is not effective, the best course of action is to maintain a link with the group for future utilization.

Step 7: Determine campaign impact indicators.

Before the target analysis is complete, the target analyst must record the behaviors which indicate changes from existing activity levels. The specific behaviors (events) are referred to as campaign impact indicators. Campaign indicators assist in evaluating the effectiveness of PSYOP.

A PSYOP campaign is designed to produce a desired effect (some action, behavior, or perhaps, inaction) upon the target audience. The success of a campaign can only be judged by its effect. Effects analysis determines the impact of a propaganda effort on an audience. It assesses the relative success of propaganda and the reasons why a particular effect was achieved.

Propaganda effects analysis is a difficult task. Even under the best circumstances, it is hard to judge whether attitudes and opinions have been changed by propaganda. During limited or general war, analysis is even more difficult because the effects of propaganda often cannot be seen until the area becomes accessible. In a cold war situation, internal defense and development (IDAD), or consolidation operations the task is somewhat simpler and results are more accurate because the audience is generally more accessible. (See chapter 16.)

FACTORS WHICH CONTRIBUTE TO THE FAILURE OF PSYOP

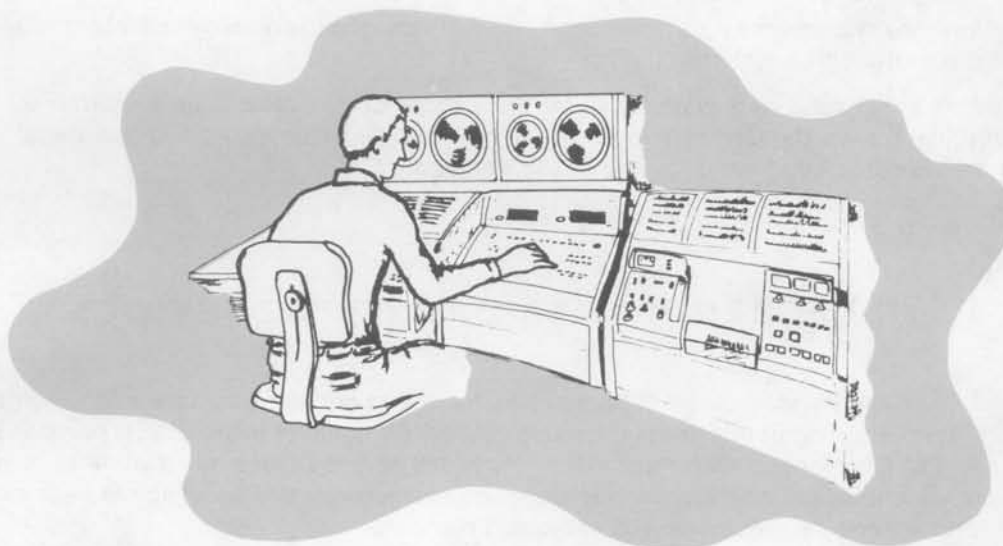
Information may be difficult to find and requires a subjective (personal) evaluation. Failure to search all sources thoroughly for this information and lack of experienced personnel to make the required seasoned judgments will contribute to the failure of PSYOP campaigns.

Target groups frequently are not properly identified. PSYOP personnel must continuously study information to identify and define target groups clearly. This information is acquired through the submission of good intelligence requirements (EEI/OIR) to the appropriate collection agencies and repositories.

*Chapter Fifteen***15****THE PSYOP**

AUTOMATED MANAGEMENT INFORMATION SYSTEM (PAMIS)

One of the day-to-day problems which can directly affect the quality of work is the massive amount of information that must continually be processed. Without electronic assistance, the information is limited to the content of a file supplemented by personal knowledge. Therefore, an electronic, systematic means of accumulating and presenting large quantities of relevant information is of value to PSYOP personnel.

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The PSYOP Automated Management Information System (PAMIS) is designed to assist the PSYOP staff officer, intelligence officer, propaganda analyst, propaganda officer, and others in obtaining, maintaining, and using large amounts of information. It is a set of three interrelated information handling systems:

The PSYOP Foreign Area Data (PFAD) System - An automated means of storing and retrieving textual information, such as analyses, abstracts, extracts, and summaries about a country or region.

The PSYOP Foreign Media Analysis (PFMA) System - An automated means of storing and retrieving coded content analysis data about the mass media of countries of interest to the PSYOP unit or staff.

The PSYOP Effects Analysis System (PEAS) - An automated means of storing, processing, and presenting information pertaining to the effectiveness of PSYOP campaigns, media, themes, and programs.

These three systems are interrelated in that information from one can aid in analyzing data from the other systems.

PAMIS is managed and maintained by the Officer of the Joint Chiefs of Staff in conjunction with the Department of the Army. It utilizes computers and peripheral data processing equipment located in the Pentagon.

PSYOP FOREIGN AREA DATA (PFAD) SYSTEM

The PFAD System provides uniform procedures for the collection, storage, and automated retrieval of PSYOP-relevant information about a country or region of the world. Its purpose is to provide the PSYOP planner with information on which to base plans and estimates, and to provide the psychological operator with information and intelligence on which to base target analysis, propaganda development, and campaign planning.

The PFAD System does not duplicate area handbooks, intelligence annexes and estimates, or other similar materials. Rather, it supplements these with PSYOP-specific information, concentrating especially on facts and data which lead to the discovery of PSYOP vulnerabilities and opportunities.

Sources of material for the PFAD System

The PFAD System accepts material from a variety of agencies or sources: active and reserve PSYOP unit personnel, individual researchers and research institutions, and experts obtained specifically to meet PAMIS intelligence needs. The material references a source (e.g., a book, intelligence report, newspaper, cable, etc.).

PFAD System Contents Records

The PFAD System contains two basic computer records:

Source description record--the essential facts needed to describe adequately the nature of the source publication or document.

Subject narrative record--summary narratives of information about specific PSYOP subjects.

The purpose of the source description is to present to the user a brief overview and description of PSYOP-relevant material, such as books, periodicals, dissertations, government documents, cables, and the like. The user of the PFAD System can evaluate the source description printout (see figure 15-1) and determine whether to obtain the basic source document or to request the appropriate subject abstracts from the computer. He can request a computer printout (bibliography) that contains information on a given country, political group or movement, ethnic, social or religious group, or definitive subject or subjects.

The purpose of the subject narrative is to provide the social, cultural, economic, political, communication media, and other special information needed to make decisions on all aspects of PSYOP. Each entry is a short one-page abstract. Each narrative record, consisting of one or more abstract entries, is coded so the user can request subject data from the PFAD file in any combination of information elements. For example, the user can retrieve all subject information about a given nation or region of a country; he can select those subjects about electronic media relevant to specific population groups; or he can retrieve all PFAD data records on a given PSYOP target. Figure 15-2 is an example of a subject narrative record. In the case of translations into English, the entries may be larger than in the original language. The location and date of publication of the original source will be included, permitting further research.

Information for PFAD System

The agency which does the original research on a given subject provides the information by typing it in specific format on a magnetic typewriter tape. This tape cartridge is then mailed to the National Military Command System Support Center (NMCSSC); there it is converted and transferred to computer tape, and the information is checked and stored in one or two PFAD files: BIBLIOGRAPHY and SUBJECT.

Electronic data processed reports are provided on request. They consist of selected retrievals of key information used to prepare PSYOP estimates of the situation and basic PSYOP studies. Figure 15-3 is a coversheet for a PFAD System output report.

Using the PFAD System

The PFADS programmer is able to review and upgrade the data base by removing information of little or no value. In addition to the review process, the data base is structured to indicate areas in which information is missing so that research and intelligence priorities can be assigned to fill out these areas. By these two processes, the PFAD System provides a means for increasing the quality and quantity of information available for PSYOP uses.

UNCLASSIFIED

PSYOP DESCRIPTIVE SOURCE BIBLIOGRAPHY

COUNTRY - LEBANON

ARTICLE

TITLE - POLITICAL STRUCTURE OF A MIDDLE EAST COMMUNITY

CLASSIFICATION - UNCLASSIFIED

AUTHOR - AYOUB, VICTOR F.

DATE OF PUBLICATION - JAN 1, 1955

PLACE OF PUBLICATION - CAMBRIDGE, MA, USA

SOURCE - LOCATION HARVARD LIBRARY

PAGES - 149

RELEVANCE - APPROXIMATELY 50 PERCENT PSYOP RELEVANT

DESCRIPTIVE ABSTRACT OF SOURCE

THIS UNPUBLISHED DOCTORAL THESIS DESCRIBES AND ANALYZES THE SOCIAL ANTHROPOLOGY OF ONE TYPE OF DRUZE VILLAGE IN LEBANON AS IT WAS IN THE EARLY 1950'S. MANY OF THE BASIC SOCIAL STRUCTURES AND RELATIONSHIPS DESCRIBED ARE COMMON TO OTHER VILLAGES IN THE ARAB MIDDLE EAST. HOWEVER, THE RELATIONSHIPS BETWEEN BOTH HORIZONTAL AND VERTICAL GROUPS ARE CHANGING, AS THE AUTHOR NOTES, AND THUS SHOULD NOT BE CONSIDERED NECESSARILY TO REFLECT THE 1973 CONDITIONS IN THIS OR OTHER VILLAGES IN LEBANON AND THE MIDDLE EAST.

SUBJECT(S) EXTRACTED FROM SOURCE DOCUMENT

LOCAL RURAL GOVERNMENT, STRUCTURE AND ACTUAL OPERATIONS	PAGE(S) - 109-122
FAMILY, KINSHIP, OR HOUSEHOLD GROUPS--DEFINITION	PAGE(S) - 48-90
FAMILY, KINSHIP, OR HOUSEHOLD GROUPS--BASIS INCLUSION/EXCLUSION	PAGE(S) - 48-90
UNIFYING FACTORS IN FAMILY, KINSHIP, OR HOUSEHOLD GROUPS	PAGE(S) - 48-90
CURRENT RELIGIONS OR SUBORDINATE GROUPS	PAGE(S) - 91-104
PRINCIPAL TYPE OF ECONOMY--DESCRIPTION	PAGE(S) - 32-43

UNCLASSIFIED

FIGURE 15-1

UNCLASSIFIED**PSYOP SUBJECT REPORT**

SUBJECT - MODERN HIGHER EDUCATION AND SCHOOL SYSTEMS (UNIV/GRAD LEVEL)

COUNTRY - GERMAN DEMOCRATIC REPUBLIC

CLASSIFICATION - UNCLASSIFIED

DATE OF LATEST - UPDATE FEB 4, 1975

RELEVANCE - APPROXIMATELY 50 PERCENT PSYOP RELEVANT

SUBJECT NARRATIVE

(STUDY IN FOREIGN COUNTRIES)--SINCE THE ESTABLISHMENT OF THE GDR, ABOUT 10,000 GDR CITIZENS HAVE COMPLETED THEIR EDUCATION AT UNIVERSITIES AND ADVANCED SCHOOLS OF THE USSR, THE CSSR, THE POLISH PEOPLE'S REPUBLIC, AND OTHER SOCIALIST COUNTRIES. THESE GRADUATES ARE NOW RESPONSIBLY FULFILLING IMPORTANT TASKS IN VARIOUS BRANCHES OF OUR SOCIAL LIFE. MORE THAN 600 GRADUATES ARE EMPLOYED AS PROFESSORS AND LECTURERS IN THE GDR ADVANCED SCHOOL SYSTEM. IN 1974 THE NETWORK OF STUDY LOCATIONS WAS CONSIDERABLY EXPANDED. THUS, AT THE PRESENT TIME, ABOUT 5,000 GDR STUDENTS ARE RESIDING AND STUDYING IN 18 CITIES OF THE USSR, IN 9 CITIES OF THE POLISH PEOPLE'S REPUBLIC, AND IN 5 CITIES OF THE USSR.

(TEXT) (EAST BERLIN ARBEIT UND ARBEITSRECHT IN GERMAN JAN 7 P 16)

SOURCE

TITLE - JPRS (JOINT PUBLICATIONS RESEARCH SERVICE)

CLASSIFICATION -

DATE OF PUBLICATION - FEB 4, 1975

PAGES - 021

UNCLASSIFIED

FIGURE 15-2

UNCLASSIFIED

JCS--J3--SPECIAL OPERATIONS

PSYOP FOREIGN AREA DATA SUBSYSTEM (PFADS)

SUBJECT COUNTRY FOR THIS REPORT IS -- LEBANON

THIS REPORT CONTAINS INFORMATION ABOUT THE FOLLOWING SUBJECTS

PERTAINING TO -- LEBANON

--GOVERNMENT STRUCTURE AND AUTHORITY	PAGE -- 2 --
--DISTRIBUTION OF POLITICAL POWER	PAGE -- 4 --
--POLITICAL SOCIALIZATION, PARTICIPATION	PAGE -- 7 --
--POLITICAL GROUPS	PAGE -- 9 --
--SOCIAL STRATIFICATION	PAGE -- 13 --
--SOCIAL STRUCTURE-INDIVIDUALS IN GROUPS	PAGE -- 16 --
--SOCIAL STRUCTURE-INSTITUTIONS	PAGE -- 20 --
--CHARACTER AND STRUCTURE OF GENERAL ECONOMY	PAGE -- 23 --
--MASS MEDIA COMMUNICATIONS-GENERAL	PAGE -- 25 --
--THE PSYOP (POLWAR) OBJECTIVES AND STRATEGY	PAGE -- 27 --

THIS REPORT DOES CONTAIN AN ANNOTATED (DETAILED) BIBLIOGRAPHY

ABOUT -- LEBANON

PAGE -- 29 --

THE MOST RECENT DATA IN THIS REPORT IS -- MAR 01, 1973

PRINTED AT NMCSSC -- OCT 28, 1975

UNCLASSIFIED

FIGURE 15-3

FOREIGN MEDIA ANALYSIS (FMA) SYSTEM

The Foreign Media Analysis System provides a means of storing, retrieving, and processing information obtained from analysis of foreign communication media. Selected media are analyzed by foreign language coders (normally part of a PSYOP unit) to determine the amount of media space or time devoted to significant subjects or propaganda themes.

The basic unit for the FMA System is the dominant subject (or propaganda theme) of the printed article or news broadcast related to a specific country or government. The coder/analyst is required to follow established conventions and rules in classifying and coding each input unit according to the following queries:

What is the main thrust or manifest content of the printed article or news item?

What governments, international organization, or political movements are the subject of the article or news item?

What is the tone of the article toward the governments or institutions, or international organizations?

How much space (in square centimeters) or time (in minutes) is devoted to the subject?

Does the article or news item contain information of significant personalities, events, or subjects important to PSYOP? Such articles or news items are summarized for the FMA textual file.

This information is checked to insure validity and uniformity of coding and is then keypunched on 80-column cards. The data are transmitted by AUTODIN to the NMCSSC computer site in the Pentagon where it is audited, edited, and stored.

The FMA System provides both standard and special request reports. The standard reports are identified as:

PSY1-01 - Major Subject Categories by Source

PSY1-02A - Report About Theme Countries

PSY1-02B - Report About Other Countries

PSY1-03 - Coverage by Rank Order of Foreign Governments by Tone

PSY1-04 - Coverage by Regions of the World

PSY1-05 - Subject Index to FMA Media

PSY1-10 - Clear-Text or Narrative Abstracts

The purpose of the PSY1-01 printout is to give the analyst a knowledge of:

The square centimeters of space or time (measured in minutes) allocated to broad FMA domestic subjects by each medium over a designated period of time.

The percentage of total coverage allocated by the media to foreign events, governments, and institutions.

The purpose of the PSY1-02A and PSY1-02B printout is to provide analysts with:

A statistical analysis of the amount and tone of media coverage for each country or international organization.

A statistical analysis of communication trends by subject and tone.

A correlation analysis of these data with each of the 700 FMA subjects.

A comparative analysis by content and tone of media directed at the domestic as compared with international audiences.

Hypotheses and inferences from trend data confirming or denying other intelligence.

The purpose of the PSY1-03 printout is to sort by media and tone (critical, neutral, favorable) FMA data on foreign countries. A comparison of three time periods can be processed for any one PSY1-03 report. Any combination of these time periods can be specified by the user.

The purpose of the PSY1-04 printout is to summarize foreign media data about all foreign governments in specific geographic regions. The PSY1-04 printout provides the analyst with a one-page summary of media coverage of foreign governments in relation to other governments according to geographic regions.

In order to adequately analyze foreign communications media, it is necessary to examine the qualitative aspects of a news item or feature article, as well as the quantitative data. In other words, the actual story or news item must be read to obtain the "flavor" of the presentation or arguments in a qualitative sense. The PSY1-05 provides information about the location of articles in the source document or audio tape. It provides a "library" index similar to the New York Times Index for each FMA source. Another purpose of the PSY1-05 printout is to provide analysts with a consolidated listing of FMA data about a particular country or government.

The purpose of the PSY1-10 printout is to provide users with a synopsis of those articles or news items of major interest to PSYOP programs.

In addition to the PSY1-series reports that have been described above, statistical data can also be processed by using the Online Data Processing System (ODPS) available to users of the FMA system. A variety of data processing routines, such as histograms, line graphs, trend analysis, and tabular reports, are available at NMCSSC. Also, special processing can be requested in order to use data contained in FMA computer records concerning a particular inference or hypothesis. (See figure 15-4 for a schematic of the FMA system.)

PSYOP EFFECTS ANALYSIS SYSTEM (PEAS)

The PSYOP Effects Analysis System is designed to collect and process data on a target audience to measure the impact or effect of US and allied PSYOP. In addition, PEAS will store and process data about friendly and hostile PSYOP activities and actions. Figure 15-5 presents the relationship of the PEAS with the PFAD and FMA Systems.

Data Worksheets

Data worksheets are used to collect and organize the data in accordance with an 80-column punch card format. Data are organized in PEAS by:

Units or activities responsible for initiating US/allied propaganda and PSYOP activities.

Units or activities delivering or disseminating US/allied PSYOP messages and actions.

Military intelligence, civilian, PSYOP, and other interrogators.

Units or activities responsible for monitoring hostile propaganda and actions.

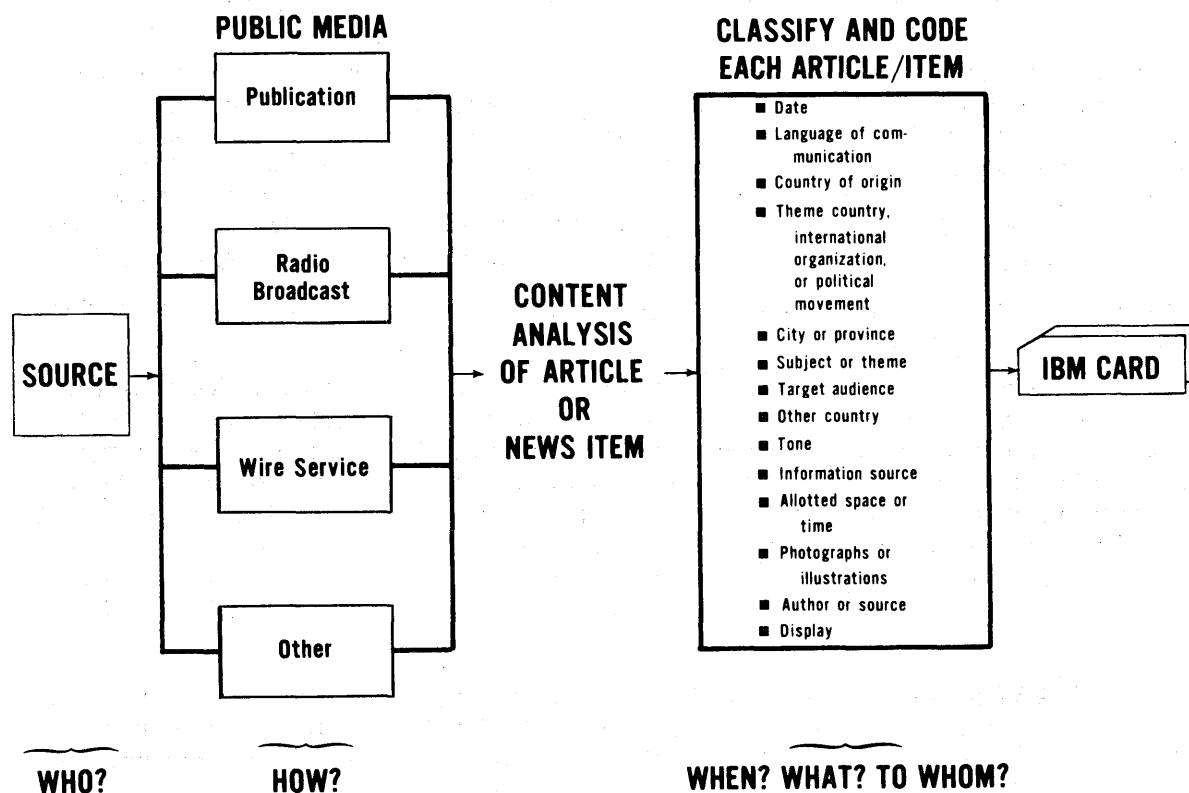
PEAS Worksheets

The PEAS worksheets have been designed so they can be completed in two stages:

Initial data collection by non-PAMIS-trained personnel.

Coding by personnel trained in PEAS methodology and coding conventions.

The data are compiled by answering a series of questions on appropriate worksheets. The worksheets are then sent to a PSYOP unit for insertion of punch card transcript data codes, verification of data, preparation of data cards, and submission to an electronic data processing (EDP) support facility for processing and storage.



Who says what, how, to whom, under what circumstances, for what purpose, and with what effect?

FIGURE 15-4

THE FMA APPROACH TO CONTENT ANALYSIS

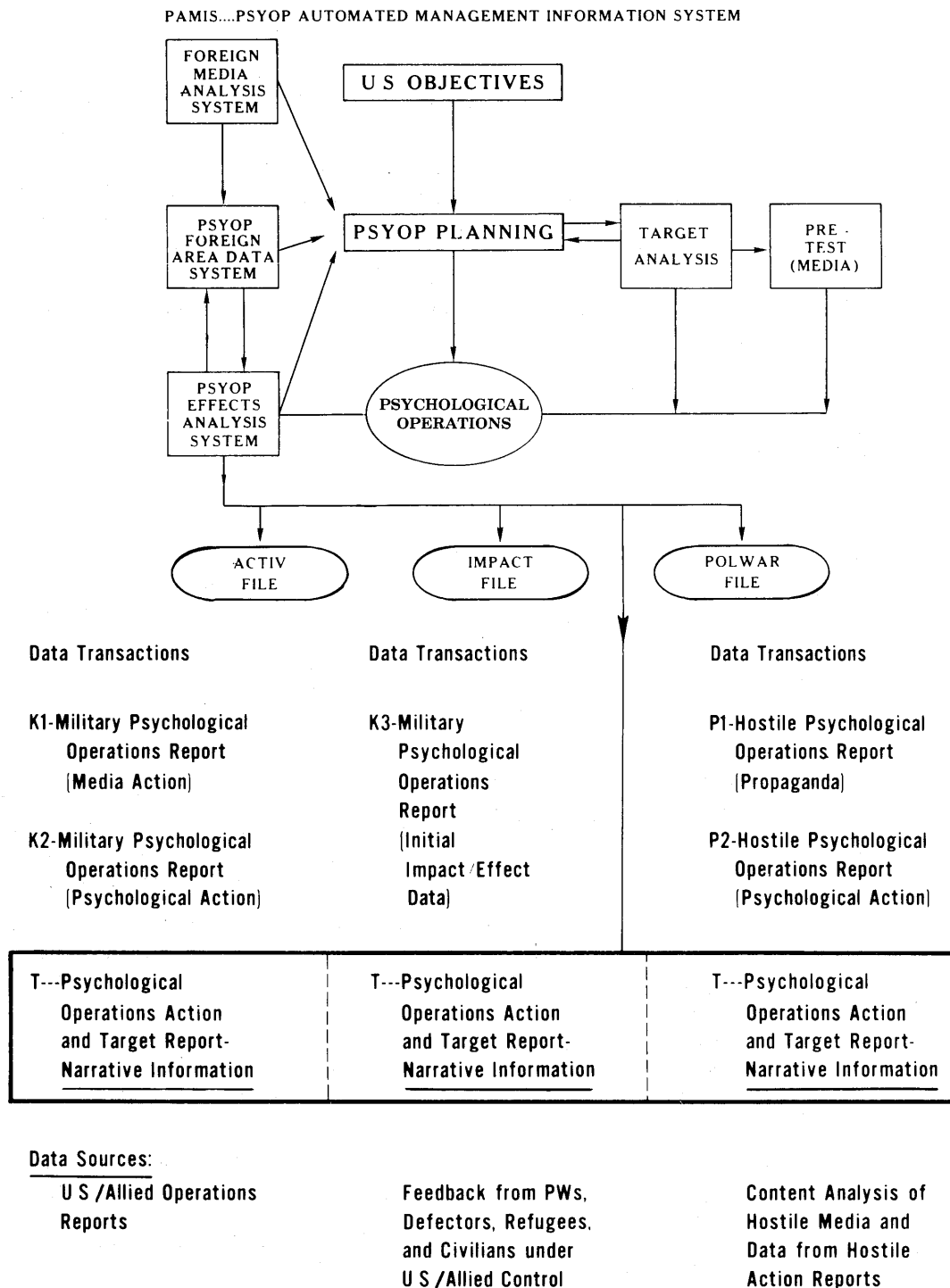


FIGURE 15-5
RELATIONSHIP OF PSYOP EFFECTS ANALYSIS
SYSTEM WITH PFAD AND FMA SYSTEMS

Storage and Retrieval

Following validation, transaction cards are converted into a format suitable for digital storage and retrieval and stored on one of several PEAS data files. (See figure 15-5.)

File ACTIV (Activities). Data from this file provides information about the effort devoted to the various mass media channels and other methods of communication. Information about other types of action is also available; i.e., those that are designed primarily for psychological effect, such as show of force, supply drops, medical relief, etc. File ACTIV also provides PSYOP commanders with uniform procedures and methods for reporting and analyzing US and friendly PSYOP activities. It provides data on the effort supporting:

- Specific campaigns.
- Various PSYOP objectives and tasks.
- Propaganda themes.
- Target groups.
- Military units and civilian agencies.

PEAS Impact File. The PEAS Impact File provides PSYOP commanders, target analysts, and others with systematically collected feedback about US and allied propaganda messages and PSYOP actions. Data collected for the Impact File is only one element in determining the overall effect of PSYOP. It does not replace the collection of data about propaganda messages from panels or data collected by means of in-depth interrogations.

Use of PEAS Worksheets (Impact Data Records). The PEAS data collection format is useful for prisoners-of-war interrogations at the brigade and division levels of command. Each PEAS impact record pertains to a respondent's reaction to an electronic or printed PSYOP message. In the interrogation process, the respondent is required to select or identify the PSYOP message(s) that he has seen or heard.

PEAS impact data messages (worksheets) are then completed for those US/allied propaganda messages identified by the prisoner or other respondent. A combination of casual statistical data and clear-text narrative information is used to evaluate the impact of PSYOP campaigns, objectives, tasks, and themes. The PEAS computer program can correlate that portion of the PSYOP record containing effect data with information about target groups, PSYOP objectives/tasks, PSYOP themes, and other actions. These data should provide commanders with indicators about the success or failure of military PSYOP.

The PEAS POLWAR File. The POLWAR File of the PEA System provides uniform procedures and methods for reporting and analyzing hostile propaganda and actions directed at US and allied populations. Data from the file allows continuous monitoring of the hostile POLWAR at the tactical command level. This file of the PEAS interfaces with the Foreign Media Analysis System of PAMIS.

The POLWAR File is concerned with those communications and actions that take place in a combat environment. This contrasts with the FMA System whose interest is primarily strategic and is concerned with those media directed to the domestic audience. The operational objectives of the POLWAR data file are to:

Pinpoint those military units that are the target of hostile propaganda and psychological actions.

Highlight and quantify enemy propaganda objectives, tasks, and themes.

Highlight enemy propaganda to friendly ethnic groups and other special targets.

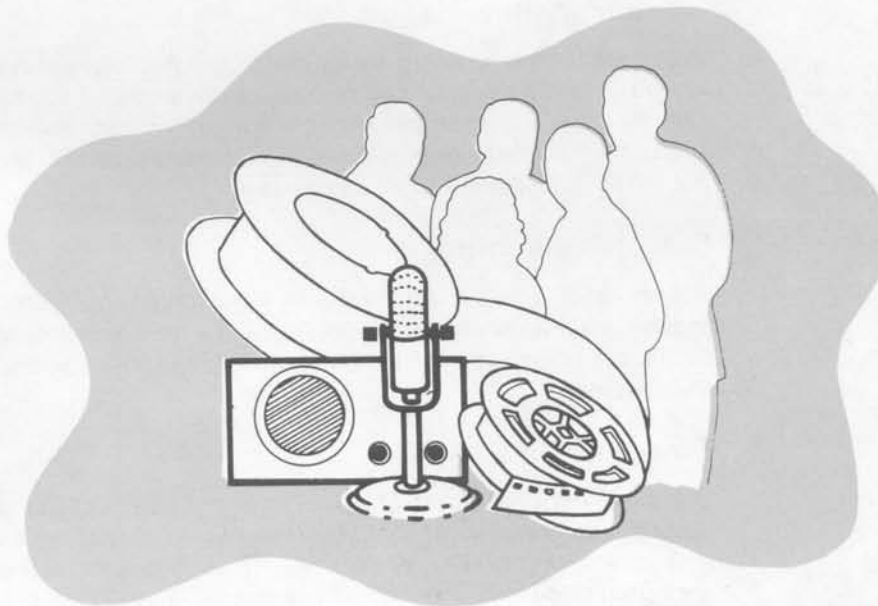
Provide indicators of the impact of hostile PSYOP on US and allied military populations.

In addition, a systematic analysis of hostile POLWAR activities provides valuable clues concerning the impact of our own PSYOP programs on the enemy. Standard practices and operating procedures should be established by the theater commander to monitor hostile propaganda and to collect data. An 80-column punch card format is used to collect and organize the POLWAR data. It can be completed by military PSYOP teams, military intelligence, radio monitoring teams, special police, national information agencies, and others.

*Chapter Sixteen***PROPAGANDA ANALYSIS**

The psychological operator uses propaganda analysis to:

- Reveal opportunities for PSYOP exploitation.
- Assess the effects of enemy and friendly propaganda.
- Collect intelligence related to PSYOP.
- Obtain intelligence for other uses.
- Supplement other intelligence.

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16

TOOLS OF THE ANALYST

The propaganda analyst works primarily with foreign mass communications that attempt to influence the conduct, attitudes, opinions, and emotions of groups. A foreign country's daily output of official printed media, radio and television broadcasts, and wire service releases provides the greater portion of material. This material assists in analyzing:

Morale.

The level of morale of a nation may be determined by its domestic propaganda. For example, domestic propaganda quietly and unemotionally delivered generally reflects high morale, while silence, bluster, or strident propaganda suggests low morale.

Involuntary Information.

Propaganda may contain news, opinions, and entertainment. Valuable information can be obtained from a careful analysis of this material. For example, the space a government gives to its leaders in its propaganda is often a measure of the relative power of individuals within the hierarchy.

Biographic Information.

Events may provide biographical information on particular individuals. For example, the presence of a new personality at a publicized ceremony may indicate a shift in the power position of that person.

Economic Data.

Economic information may be derived from statistics reported in propaganda, even if the statistics are false. Comparisons with previous data often give valuable clues about industrial or agricultural output, manpower shortages, or other economic conditions.

Propaganda Inconsistencies.

Any inconsistency in propaganda may provide insight into conditions in the source's homeland, including the condition of its combat forces.

Intentions.

Propaganda may be used to conceal the real intentions of the source. An example is an attempt to convey the impression that any future outbreak of hostilities will be the fault of the other nation.

SCOPE OF PROPAGANDA ANALYSIS

Propaganda analysis is the detailed examination of the source, content, audience, media, and effects of propaganda. Propaganda analysis permits the analyst to arrive at valid conclusions that will result in effective PSYOP campaigns. These elements are interrelated and cannot be analyzed independently. In short, propaganda analysis provides answers to the basic questions: WHO says WHAT, to WHOM, in WHAT MANNER, for WHAT REASON, and with WHAT EFFECT.

A word of caution: To distinguish minor, transient themes from those that are basic (major) and continuing, the analyst must collect sufficient information over an extended period of time.

METHODS AND PROCEDURES

The first step in the propaganda analysis process is to analyze the communication system. At the basic level, a communication model consists of a source, message, and destination. The relationship of the items for analysis (source, content, media, audience, effects) to the basic elements of the communication system (source, message, destination) are illustrated in figure 16-1.

COMMUNICATION ELEMENT	SOURCE	MESSAGE	DESTINATION
COMPONENT OF PROPAGANDA ANALYSIS (ANALYTIC FUNCTION)	SOURCE ANALYSIS	CONTENT ANALYSIS MEDIA ANALYSIS	AUDIENCE ANALYSIS EFFECTS ANALYSIS

FIGURE 16-1

RELATION OF COMPONENTS OF PROPAGANDA
ANALYSIS (ANALYTIC FUNCTIONS) TO
COMMUNICATION MODEL ELEMENTS

Each type of analysis (source, content, audience, media, effects) has its own procedure. For example, when the audience is accessible, it is possible to analyze effects by the use of personal (structured) interviews and questionnaires. If not accessible, less direct procedures must be employed. On the other hand, source and audience analyses are more dependent on specific information about the source and the target audience than on procedures.

Once the universe of communications has been defined and the analytical categories selected, quantitative analysis can be performed. This is done by counting the number of entries in each analytical category from each unit of analysis of the media. Statistical comparisons and analyses can be performed from these counting operations. Qualitative or interpretive analysis is required to illuminate or supplement these quantitative findings.

Source analysis. The source is the individual or organization sponsoring the development and dissemination of the propaganda. Analysis of the source gives the analyst an understanding of the credibility of the source and its proximity to the center of government, military command, and other important persons.

Actor and authority.

Actor refers to the persons or entity apparently initiating the propaganda. Authority, on the other hand, refers to the person or entity in whose name a statement is made. Sometimes the actor and the authority are the same.

Author.

One of the major reasons to analyze propaganda is to establish authorship--to determine where in the spectrum of power the propaganda originates. The author and authority may be the same, especially if the author is well known to the target audience; e.g., Winston Churchill.

Content analysis. Content analysis, the most important element of propaganda analysis, depends on sound analytical methods and reliable, accurate information. It is the analysis and evaluation of statements to determine the motives and objectives of the source. It reveals the meaning and reasons why the message(s) was disseminated. Because content (what is said) is the major element of communications, content analysis constitutes the major effort of propaganda analysis. Direct access to the target audience is not required.

Procedures for content analysis range from the application of objective, quantitative techniques to the application of entirely subjective techniques. Objective techniques systematically analyze content over a period of time by classification systems and statistical tables.

Subjective content analysis is based on the background, "gut feeling," and judgment of the analyst.

A combination of both methods is required for a valid product; statistics, equations, and tables must be interpreted.

How it's done:

STEP 1

An assumption (hypothesis):

Whichever approach is taken (objective, subjective, or a combination), the first step is to set up an assumption (hypothesis) to be proved or disproved. The hypothesis is actually an educated guess as to what the analyst believes to be the motive for some psychological action or propaganda message. It may be necessary to change the hypothesis as the analysis develops. In some cases it may be necessary to repeat the entire process.

STEP 2

Sampling:

The next step is to decide which specific items to examine for content. The analyst will seldom have free access to all the propaganda produced by a source, so he must take samples of the source's propaganda. The sample must be large enough to provide an accurate indication of the propaganda produced. It must also be representative, having the characteristics of the propaganda output. Sampling for content analysis involves the following operations:

The analyst must determine which communications (publications, commentary, etc.) to examine--which newspapers, which magazines, which radio or TV stations.

Having decided which titles he will examine, the analyst must next decide which issues he will analyze. For example, having decided to examine a particular newspaper, he must decide which issues--Monday? Tuesday? etc.

Having made these decisions, the analyst must decide what part of the publication or broadcast he will examine--the front page? editorials? evening newscasts? etc.

Next the analyst determines the unit of analysis for counting the content elements. The original assumption will help to determine which are appropriate. Major units of measure are:

Words. The word is the unit of analysis. Use of this unit results in a list of relative frequencies of selected words.

Phrases. A variation of the word is the phrase. Phrases generally fall into the categories of cliches, idioms, or slogans.

Sentences. This category is an extension of phrases.

Topics and themes. Topics are appropriate when only the subject matter is considered without any embellishment by value judgments. Lists of topics can be prepared without any reference to actual propaganda content. Themes are more appropriate when the subject matter and the value judgments (positive or negative) associated with the subject matter are addressed. Themes tend to be derived more from the actual content than do topics. **A theme implies a topic, but a topic does not necessarily imply a theme.**

Examples:**TOPIC****THEMES**

Military maneuvers

The unbeatable
division

Farm production

Five percent feeds
the world

The farmer

The backbone of
the country

Item. An item is a complete unit of a medium devoted to a specific subject. The item will differ according to the medium used. It may be a news story, an editorial, a magazine, a book, a radio or TV program, or any other complete, self-contained expression of ideas. Items are convenient units when using broad, general content categories covering a large range of subjects over a relatively long period of time.

Space-Time Units

Number of lines, paragraphs, pages, chapters, square centimeters.

Column inch.

Footage (film or videotape). This translates to time measure (minutes).

Minutes; e.g., broadcast time (loudspeaker, radio).

When using units of count or measure, more than one unit can be used for any given analysis. The purpose of the analysis determines the units to be used.

STEP 3**Basis for classification:**

The next step is to consider the characteristics of propaganda messages that can be used for classification or category formulation. Message content may be broken down into two major categories: what is said and how it is said.

On the basis of what is said, the following breakdown is appropriate.

Subject matter.

Most information is classified on the basis of subject matter.

PAMIS FMA.

The PAMIS Foreign Media Analysis System categorizes propaganda on the basis of subject matter (among other categories).

Values of the message originator as reflected in content.

Values are the ideals and goals of a society or other group; they affect the behavior of members of that society or group. Themes such as "freedom of

speech," "freedom of religion," and "freedom of press" are examples of content categories which represent values.

Direction--pro or con.

Propagandists are either for or against something. This is apparent in the content of their propaganda. The directional approach (pro or con) may be combined with the subject matter category, or it can be used alone. In this approach, the subject matter is indicated and judgments are made as to how the subject matter was treated by the propagandist; i.e., positively, neutrally, negatively.

Regionalism.

Propaganda may be classified on the basis of its geographic origin (regionalism). This classification and analysis depend upon the ability to monitor regional publications and broadcasts. The emphasis is on associating subject matter and its treatment with geographic areas.

On the basis of how a message is stated, the following categories may be used.

Form or type of communication.

Forms or types in newspapers include editorials, news, features, comment, letters to the editor, fiction, etc. Radio and TV content may be classified as music, news, commentary, special features, drama, variety, and talk.

Form of statement.

Much propaganda consists of arguments or appeals; i.e., a conclusion with supporting rationale.

Intensity.

From the strength of an appeal or argument, an analyst might determine the potential impact on audiences as well as how strongly the source feels about a specific issue. One technique is to measure intensity involved by identifying emotion-laden terminology, classifying the expressions in terms of direction (i.e., positive, neutral, negative), and counting the frequency of such terms.

Propaganda tricks of the trade.

In those instances when the logic of an argument or appeal is weak, propagandists revert to techniques known as tricks of the trade. These techniques may also be used to bolster valid arguments and appeals. In many cases, certain techniques may be used to address specific target groups or subject matter areas. A good reason for analyzing tricks of the trade is that they may give the first indication that the material being analyzed is propaganda. (See appendix I for more complete coverage of tricks of the trade.)

Language used.

The language and dialects used, the most obvious features of propaganda, are the best indicators of the intended target audience and its characteristics.

Mode (as a reflection of intent or purpose).

A particular manner or style can sometimes be used as a basis for classifying propaganda output. Four possible categories (others may also be used) might be image enhancement, image destruction, persuasive, and threatening.

As in all intelligence analyses, the results must be presented to the users. Normally, a tabular chart indicating totals for each category for each period of time would be used to permit comparison of coverage. These totals can be converted into charts, bar or pie graphs, etc. In the case of pure qualitative content analysis, the results are primarily word pictures based on impressions rather than numbers.

STEP 4

Analysis of results:

The analyst takes the results of his study and examines them in the light of his hypothesis. Using quantitative content analysis techniques, the analyst reviews any charts or graphs depicting the final results of the count and decides whether the hypothesis (original assumption) is supported or not. By this means the analyst determines trends in a time series and relative emphasis in comparative studies, depending upon the hypothesis.

STEP 5

Final inference:

The final step, based on the proof or lack of proof of the hypothesis, is drawing the inference which can be used by the analyst to reach useful conclusions on current conditions or future actions.

Audience analysis. Audience analysis is the study of the total audience that the propaganda reaches or seeks to reach. An audience may include those persons who were not the intended target for propaganda but who have received the message. Audiences may range from a highly general category, such as the Russian people, to a specific category, such as a rifle company. They may be defined as specific groups in terms of income, nationality, geography, ethnic, political, religious, social, economic, classes or castes, etc.

Should propaganda content be classified according to audience, decisions must be made as to whether the apparent or inferred audience (or both) should be considered. In case of inferred audience, stringent specific criteria must be spelled out for making the inference. Tables and matrixes may be constructed to make the analysis more valuable.

Media analysis. The analyst is interested in the specific medium used, why a particular medium was chosen, what media capabilities an adversary has, and how consistent the message content is in the various media.

A minimum requirement for message effectiveness is that it be received and perceived by the intended recipient. The sensory mechanisms required to perceive a message are used as the most fundamental classification of media. Briefly, messages can be perceived visually, aurally, or aurally and visually. The breakdown of receptor mechanisms and corresponding media are as follows:

VISUAL	AUDIO	AUDIOVISUAL
Books Magazines Pamphlets Leaflets Posters Handbills Calendars Novelties Photographs Newspapers Signs (fixed and mobile) Banners	Radio Loudspeakers (carrying live or prerecorded messages)	Sound motion pictures Tape and slide combinations Cassette and filmstrip combinations Television Activities (e.g., military civic actions, show of force, rallies, demonstrations) Interpersonal (face-to-face communications)

Periodicity.

Time or periodical patterns of operation can be used as a basis for classification. Printed media are generally classified according to their periodicity; e.g., daily, weekly, biweekly, monthly, etc. Radio and television programs can be classified on the basis of their broadcast times within a broadcast day or on other time schedules; e.g., a daily feature, a weekly feature, a morning or evening feature, and a feature at 1800 hours, etc.

Placement of content.

The physical position or placement of content within a medium may be used as a basis for classification. Printed material might be classified as lead stories, cover stories, center spreads, front page news, etc.

Place of origin.

Sometimes origin is openly acknowledged, and other times it must be inferred. The origin of radio and television broadcasts may be established by direction-finding techniques. The precise source of material contained in other media may be more difficult to pinpoint.

Technical characteristics.

Radio and television broadcasts can be classified on the basis of the frequencies or channels employed, modulation, and the strength of the signal (the likely power at which the signal was transmitted).

Printed material (also signals) can be classified on the basis of methods used to reproduce the material. The number of pages, quality of paper, and typography might be used as a basis for classification.

Printed media and television may also be classified on the basis of color or black and white.

Media are sometimes linked with delivery systems, which also serve as a basis for classification. For example, loudspeakers can be stationary, hand-carried, truck-mounted, tank-mounted, or aircraft-mounted. Leaflets may be delivered by fixed or rotary-wing aircraft, balloons, sea floats, artillery, bombs, and mines, or they may be disseminated by hand.

Mode of transmission.

Media can be classified as overt or covert. Covert transmission would include surreptitiously delivered leaflets, handbills, posters, and broadcasts from clandestine radio stations.

Acknowledgement by source.

The extent to which a source acknowledges its output may be used as a basis for classifying media (and content). White, gray, and black propaganda fall within this classification category.

Legal status of disseminator.

By international convention, countries broadcast on assigned frequencies and power output. Not all broadcast facilities adhere to this convention. Thus, broadcast stations can be classified on the basis of their registration and the extent to which they adhere to regulations. Some clandestine stations are clandestine only because they do not adhere to international broadcast codes.

Some indicators of problem areas.

Supply shortages may be indicated by poor grades of ink or paper used in the source's printed propaganda. Weak radio signals, interrupted programs, poor program production, or a lack of operating stations suggest a lack of signal equipment, facilities, supplies, and trained personnel.

Effects analysis. In analyzing hostile and friendly propaganda effects, the analyst attempts to determine the effect of the source's propaganda upon the target audience and the reasons why it was effective, partially effective, or totally ineffective. Four general types of evidence help to ascertain if propaganda has or has not been effective. These are responsive action, participant reports, observer commentaries, and indirect indicators.

Responsive action is behavior which can be more plausibly attributed to propaganda than to any other stimuli in the environment of the target audience. In the ideal case, a one-to-one ratio can be established; e.g., immediate surrender of troops precisely as directed by a combat loudspeaker broadcast. Rarely, however, can responsive action be attributed to propaganda appeals alone; often the appeal, at best, has crystalized an existing tendency for action.

Participant reports are accounts received from members of the target audience on how they were affected by the propaganda. These reports may be emotion laden and are less reliable evidence than responsive action; they may not truly reflect the individual's response. In accessible areas, participant reports are valuable because a great variety of participants can be asked how they felt about the propaganda.

Observer commentaries are reports by witnesses to a situation in which they were not involved. Depending upon the perceptiveness of the observer, his assessment of the situation may or may not be accurate. Information from observers may be taken at face value. Observer commentaries may be taken from such persons as agents stationed within the target area, PWs, escapees, defectors, reporters, businessmen temporarily in the area, etc.

Indirect indicators are the events that occur in the area of operations and appear to result from PSYOP although not directly suggested by PSYOP. Indirect indicators fall into four major categories:

Physical actions barring reception. These are actions taken by the enemy to prevent the audience from receiving external communications. Barring of entry of printed material and jamming of radio stations are examples.

Psychological conditioning. A government or military commander might initiate actions which, while not physically preventing reception of external communications, are designed to cause the audience to avoid them. For example, the government or military commander might try to convince the audience that the source cannot be believed, or harsh penalties might be enforced for listening to, viewing, or reading communications from external sources.

Persuasive efforts. If the audience did receive the communication in spite of the efforts of its government or command, a counterpropaganda program might be initiated. Content analysis could reveal this effort.

Apparent related events. Events may occur that can logically be inferred to be associated with the psychological operations or propaganda although they were suggested. Before these events can be accepted as indirect indicators, all causative external factors other than propaganda must be accounted for.

Several techniques are available to analyze the relative effectiveness of US Army propaganda campaigns. These often indicate effective and ineffective themes and the principal concerns of specific audiences.

Public opinion polls, if properly used, present a fairly reliable index of propaganda effectiveness. Do not assume, however, that the results of polls precisely mirror the views of the people.

Prisoner-of-war interrogations and surveys can furnish valuable data regarding US Army propaganda effectiveness. Selected prisoners should be given specific written or oral questions regarding themes, format, color, appropriateness, programing, location where seen or heard, steps taken by recipients, actions taken by local authorities, and other feedback information to be used to improve the overall program.

Prisoner-of-war panels are valuable in determining propaganda effectiveness. A planned message is presented to the panel, and members are questioned as to the credibility or validity of the message. Weak propaganda may be detected and corrected

before it is used. The panel may point out poorly composed propaganda messages caused by a lack of full understanding of enemy psychology, terminology, and customs. This technique may suggest ways to strengthen particular themes into account previously unknown factors.

Other sampling techniques may be employed. One technique involves sampling of opinion leaders; i.e., those persons whose positions enable them to influence public opinion. This technique is particularly useful in occupied areas. Analysis of personal letters and captured personal documents is often rewarding because the writers usually express their true sentiments regarding their immediate environment, conditions at home, enemy propaganda techniques, and other pertinent factors.

Disintegration of enemy groups suggests low morale. An enemy group which was subjected to intensive propaganda attack and which is now disintegrating may provide clues to the effectiveness of propaganda operations. The number of enemy soldiers who surrender is generally not an accurate measure of propaganda effectiveness because of the many factors involved which actually induce surrender.

Current information on enemy morale--number of defections, increase in political arrests, strikes, mutiny, etc., as determined from PW reports, monitored radio reports, and other information--should be used by the psychological operator.

Chapter Seventeen

17

FACE-TO-FACE/AUDIOVISUAL/ VISUAL/AUDIO COMMUNICATIONS

Media are categorized by methods of dissemination: face-to-face (interpersonal), audiovisual, audio, and visual.



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Face-to-face (interpersonal) communication is the most effective means of transmitting a persuasive message. It is employed in rallies, rumor campaigns, group discussions, lectures, show-and-tell demonstrations, social organizations, social activities, entertainment, and individual person-to-person contact, all providing a participating experience for the individual or group to recall later.

Audiovisual media such as television, electronic tape recordings, and sound motion pictures are the second most effective means of communication available to the psychological operator. Effectiveness is based on seeing and hearing the persuasive message. These media are an excellent means of transmitting persuasive messages and eliciting a high degree of recall.

Audio media (loudspeakers and radio) lend themselves to the transmission of brief, simple messages and to personalization by use of the human voice. They require little or no effort by the audience, and generally, they have more appeal than visual media. Also, the barrier of illiteracy may be more easily overcome with audio media than with visual media (printed material).

Visual media can transmit long, complex material. Animated or still cartoons may be used to convey themes to illiterate and preliterate target audiences. Visual media generally have the least amount of popular appeal.

Themes are reinforced and the target audience given broad coverage by using several media to deliver the same basic message. For example, radio and television can augment leaflets; face-to-face communication can support newspaper circulation.

CRITERIA FOR SELECTION OF MEDIA

Acceptability and credibility.

A complete target analysis will indicate how acceptable and credible a particular medium is to the target audience.

Availability.

The availability of media, the mechanical capability of message production, and the capability to deliver the message, as well as the ability of the audience to receive and understand it are important.

Timeliness.

Production and dissemination lag for each medium must be considered. For example, a medium requiring a long production or dissemination time would not be suitable for a message exploiting a target of opportunity.

Quantity.

The media selected should be mixed, one medium reinforcing the other, and delivered in sufficient volume to insure that the entire target is exposed to the message. Care, however, is required to prevent counterproductive oversaturation of the target audience. This requires analysis of intensity and timing of propaganda dissemination.

Themes.

The theme to be conveyed will have a bearing on the selection of the best media to transmit the message.

Suitability.

The media selected must be suitable for the target. The language selected, vocabulary, and level are also important factors. For example, it would not be appropriate to use newspapers or other printed text to deliver a message to an illiterate audience. A professional journal might be the most suitable means of reaching a professional audience.

CATALOGING

PSYOP units should prepare catalogs of media material which applies to recurring themes and general audiences. These catalogs should include printed material, loudspeaker and video tapes, motion picture films, and specialty items available to PSYOP.

FACE-TO-FACE COMMUNICATION

Face-to-face communication ranges from two or more individuals in informal conversation to planned persuasion among groups. The credibility of the PSYOP messages delivered by face-to-face (interpersonal) communication is increased when the communicator is known and respected.

Advantages

Relationship	It employs an interpersonal relationship.
Audience selection	The audience can be deliberately selected and the appeal directed and tailored for it.
Assessment of impact	Feedback is immediate. The communicator can immediately assess the impact of his message and adjust his approach to obtain the desired response.
Limited support required	Limited technical and logistical support are required.
More credible	It can be more credible than other methods because the target audience can evaluate the source.

Presentation	Complex material can be presented in detail. Frequent repetition and slight variations can be readily used to influence the audience.
Expeditious	In some instances, particularly in primitive areas, it may be the most expeditious method of disseminating propaganda.

Disadvantages

Limited use in tactical situations	Use is limited in general war due to the inaccessibility of the target individual or group. It has limited use in tactical combat since the psychological operator has little face-to-face communication with opposing forces until they are captured or defect.
Close control necessary	It must be controlled, especially at the lowest levels where each communicator has the responsibility to interpret policy and objectives. The control factor is best illustrated by trying to pass an oral message, one person at a time, throughout a group. By the time the message reaches the end of the group, it does not resemble the original message. Reinforcement by other media is necessary to eliminate this problem.
Limited by insecure areas	Security considerations limit the conduct of face-to-face communications. As the security situation improves and more areas are secure, area coverage can be extended.
Requires able communicators	It requires knowledgeable, orally persuasive individuals who can convince the target audience that the program and policies are irresistible and inevitable.
Normally require indigenous personnel	For effective communications, indigenous personnel are normally required.
Range of voice limited	The range of the human voice and the need for visual contact limit this method to relatively small audiences.

TELEVISION

Television, including video tape recording (VTR), is one of the most effective media for persuasion. It offers many advantages for PSYOP, and its wide application in other fields contributes to its acceptance and use. It is appropriate for use in limited, general, and cold war and is particularly effective in FID and consolidation operations.

In places where television is not a common communication medium, receivers may be distributed to public facilities and selected individuals. A possible limitation in enemy countries, however, is that television receivers may be set to allow reception on only one or two channels under government control.

Television is an all encompassing-mass communication medium. Like radio, it makes use of the sense of hearing to convey an idea. Like printed material, it makes use of the sense of sight, adding the element of motion. And like the motion picture, it combines sight, sound, and motion. Television is immediate; in effect, it places the viewer in two locations simultaneously, creating the illusion of participating in a distant event.

Advantages

Speed	Television programs can reach large segments of the target audience rapidly. The transmission of events can be instantaneous.
Overcomes illiteracy	Illiteracy is not a barrier; an audience need not be able to read.
Unifies	Television brings people in widely separate locations closer together by exposing them visually to the same ideas and concepts.
Aural-visual	Television appeals to two senses, each reinforcing the other. This gives the viewer a sense of involvement.

Disadvantages

Range	Geography and atmospheric conditions affect the strength and range of the signal. The signal may, however, be boosted with relay stations, airborne transmitters, or satellite relay to increase the transmission range. Airborne antenna relay domes extend the range of a central transmitter but at great expense.
Reception	Television sets are unevenly distributed throughout the world. Messages disseminated by television will normally be received only by those within an above-average income range and economic class in many areas of the world, particularly in developing nations. In some developing nations, however, group listening/viewing centers may be available, negating the link between income and access to television. The association should be carefully determined for each target country. The fact that receivers in the target area may not be compatible with the transmission equipment is another disadvantage.
Power	Most television receivers require an outside source of electric power. Many areas of the world lack this power. The introduction of self-contained power packs partially eliminates this problem. If broadcasts are to be made from areas lacking power facilities, special generators and a fuel supply may be needed.

Vulnerability	<p>Equipment and parts are fragile and extremely vulnerable to damage.</p> <p>Stations are easily identified and make excellent targets.</p> <p>Receivers are difficult to hide.</p>
Program requirements	<p>A substantial production staff and supporting equipment are required to produce daily programs. Each day's operation requires a large amount of film, video tape, and live programming to sustain a program schedule.</p>
Maintenance	<p>Maintenance is highly technical, requiring trained and skilled technicians and engineers; such people are difficult to find.</p>
Personnel	<p>Television is a complicated communication medium, demanding specialized personnel with a wide range of scarce skills.</p>
Audience accessibility	<p>Although TV is excellent in friendly or neutral areas, it will not reach audiences in hostile areas unless a means is found to enter sets in these areas. Incompatibility of receivers, extreme distortions caused by two transmitters on the same wavelength, jamming, and censorship limit the use of TV broadcasts to hostile areas.</p> <p>Community viewing provides an opportunity to present TV programs which help the people identify with the sponsor (generally the established regime). If it is necessary to provide receivers, one technique is to place them initially in urban centers, extending them to rural areas as equipment and power become available; or vehicles equipped with power generators and TV sets may be moved into and out of areas as required.</p>

VIDEO TAPE

Video tape, an offshoot of television, is an excellent means of recording and projecting messages. It can replay a scene from the camera immediately after it is recorded. The tape can be used in either portable or studio recording systems, being processed electronically as it moves through the video tape recorder.

Although most commercial tape is 5 centimeters (2 inches) wide, the US Army primarily uses 1.875-centimeter (3/4-inch) cassette tape. The scenes from each size tape can be readily dubbed on to the other.

Advantages

The results of the "take" can be seen immediately; if editing is necessary prior to release to the audience, it can be done electronically as the material is being produced. There is no time lag as with film which requires chemical processing.

The tape can be reused a number of times, erasing itself as it is run through the recorder, or it can be quickly erased on equipment made for that purpose and then reused.

Video tape is virtually indestructible and can be used in almost any environment in which humans live.

The tape can be placed on readily available video cassette players which feed directly into commercial television receivers. With special equipment, video-taped scenes can be projected onto large motion picture viewing screens. The requirement for special projection equipment is not unique, as special equipment is also required to project filmed scenes on television screens.

Video tape can instantaneously project scenes in black and white or color, with natural or dubbed sound, on open (public) or closed (limited audience) circuits.

With the use of video tape, scenes may be recorded for a permanent record or for future use.

Disadvantages

The disadvantages of video tape are those inherent in the television medium.

MOTION PICTURES

Motion pictures combine many aspects of face-to-face communication and television by creating a visual and aural impact on the target audience. Since US Army PSYOP units are not able to produce motion pictures, appropriate films may be selected from available sources; effects on the target audience must be carefully considered.

Four general types of motion pictures are adaptable for psychological operations:

- | | |
|-----------------------|--|
| Entertainment. | These are standard commercial productions, including animated cartoons. Entertainment films developed specifically for propaganda purposes can be very effective as the themes may be woven into the plot of the movie. These films can be very effective in gaining attention for other propaganda. |
| Newsreels. | In the developing nations, newsreels are still a major attraction. They are on the scene and show exactly what is happening or, with good editing, give that impression. By careful, skilled editing and arrangement of sequence, news events can be used as propaganda. |
| Documentary. | This type of film--ostensibly an objective presentation of a scene, place, condition of life, or a social or political problem--is a prime |

means of propagandizing a target audience. This is done by careful selection and sequencing of scenes and events.

Training films.

Themes can be hidden in the presentation. A number of US Government-produced films are available for use by the military psychological operator. They must, however, be selected with care, as many exploit particular situations and viewpoints in a biased manner.

Advantages

Themes and objectives may be dramatized to create realism. The dramatic quality tends to cause the viewer to identify with the characters being portrayed. Thus, skillful application of production and editing techniques, such as having a central character act the behavioral patterns desired, can be very effective. The tendency to identify with the actors aids in developing a high degree of audience involvement in the PSYOP appeal.

Motion pictures gain attention, especially among illiterate groups, as illiteracy is not a barrier to understanding and use.

Most children and a high percentage of adults accept without question presumably factual information presented in films.

Sight, sound, and color reinforced by moving images elicit a high degree of interest and recall.

The motion picture is a universal communications medium, combining audiovisual features, mass distribution, and ease of presentation.

Complicated events or complex ideas can be thoroughly explained. Cartoons and other special effects can be particularly effective.

Scenes can be rehearsed and perfected prior to filming.

Newsreels that show events known to the target audience enhance the credibility of the entire PSYOP program.

Motion pictures can be rerun.

Disadvantages

The production of high-quality motion pictures is extremely expensive and requires skilled technical production personnel.

Relatively lengthy motion picture production time makes it difficult to capitalize on targets of opportunity.

Films are rapidly outdated by events, clothing, vehicles, equipment, location, or dialogue.

Viewing by target audiences may be restricted because of security considerations, local regulations, or equipment capabilities.

Diverse language differences are a major problem; these can, however, be partially overcome by use of subtitles.

Projection equipment requires electric power which may not always be available.

Film is fragile and extremely susceptible to changes in temperature and other climatic conditions.

LOUDSPEAKERS

Microphones and sound amplifying equipment transmit messages up to a distance of 800 meters. In a civilian setting loudspeakers are used to communicate with assembled groups and in localized street broadcasting. They effectively extend the range of face-to-face communications.

Loudspeakers are the most responsive medium that can be used to support tactical operations. Unsophisticated loudspeaker messages can be developed on the spot and delivered live in fast-moving situations. PSYOP loudspeaker broadcasts are usually prerecorded to insure accuracy. Occasionally, standard tapes are developed, mass produced, and distributed from the theater or national level.

Advantages

- Targets of opportunity can be exploited.

- Persuasive messages can be transmitted to the target as the situation changes.

- Loudspeakers can be an extension of face-to-face communication.

- The operator can pinpoint his target.

- The target audience can be illiterate.

- The loudspeaker can be used to undermine enemy morale.

- Operators can be easily and readily trained.

- PSYOP personnel can move to and operate anywhere a potential target audience is located.

- Large, powerful, fixed loudspeakers can broadcast messages considerable distances into enemy territory.

- Loudspeakers may be mounted on either wheeled or tracked vehicles.

- Loudspeaker systems can be mounted in either fixed or rotary-wing aircraft. This broadens the areas accessible for loudspeaker operations. Since both types of aircraft must operate at low altitudes for the message to be understood on the ground, the sophistication and intensity of the enemy air defense are prime considerations.

- Small portable loudspeaker systems may be backpacked by dismounted troops.

Disadvantages

- Range is limited by humidity, wind, precipitation, vegetation, terrain, and manmade structures.

- The enemy can readily take countermeasures; i.e., concentrate artillery or other weapons on loudspeaker personnel and equipment.

Messages may be forgotten and distorted with the passage of time.

PLANNING AND COORDINATION

Loudspeaker operations are conducted in coordination with and in support of tactical operations. The loudspeaker team leader must advise the commander of the supported unit as to the support the team can give. The team can then obtain essential operational information and coordinate security with the leader of the tactical unit.

For maximum results, loudspeaker messages in support of tactical operations must have shock effect. A tactical broadcast should be no longer than a few seconds, as prolonged broadcasting from a fixed position will draw indirect enemy fire. The message should be carefully prepared, so that each sentence constitutes a single, complete thought that will not be misunderstood. The key sentence should be short and repeated for emphasis.

The size of the target area, the character and loudness of competing sounds, the terrain, and climatic conditions (humidity, wind, temperature, etc.) affect reception of loudspeaker messages. Sound travels better at night in low temperature and humidity. In hilly or mountainous terrain, echoes may interfere with clear reception. Jungle and heavily vegetated areas absorb sound. Sounds projected over water or low-lying coastal plains travel great distances.

The announcer, generally indigenous to the operational area, must have idiomatic language fluency. Defectors may be used. They will know the current slang, topics of interest, and the problems of the enemy soldier. Their messages, however, must always be prerecorded and checked prior to being broadcast. The announcer must have—

- An intimate and detailed knowledge of the customs, folklore, and speech habits of the audience.

- The ability to adapt script and presentation to the changing situation.

- A vigorous, unemotional delivery.

- An understanding of the military situation and its implications.

Broadcasting messages from aircraft is an effective way to reach an otherwise inaccessible audience. Some general considerations are:

- The PSYOP unit is responsible for the premission briefing of the aircrew. This briefing covers target location, current intelligence, total time required over the target, the length of the message, and the number of repetitions desired.

- The loudspeaker message should be no longer than 20 seconds so that the entire message is audible to the audience.

- Rotary-wing aircraft use banks of speakers mounted either internally or externally on the aircraft. The most effective altitude for a hovering rotary-wing aircraft is between 900 and 1,200 meters (3,000 and 4,000 feet) above ground level (AGL). The banking or orbiting course is effective at altitudes from 600 to 900 meters (2,000-3,000 feet) AGL. The presence and capabilities of enemy ground fire will determine whether to use these patterns or whether to use aerial loudspeakers at all.

The US Air Force has primary responsibility for aerial loudspeaker operations from fixed-wing aircraft.

An adapter system has been developed that permits the connection of the airborne loudspeaker system with the intercommunications and radio system of the aircraft. This allows a signal received by the aircraft from a ground radio transmitter to be rebroadcast to the target audience. The use of this system permits a language-qualified speaker in a central location to support widely dispersed ground elements. The device can be connected to a tape recorder to record the message for future use.

RADIO

Radio broadcasts can be transmitted to local audiences, or across national boundaries, and behind enemy lines. Political boundaries or tactical situations may hinder radio broadcasts, but they are not complete barriers. Since radio can reach mass target audiences quickly, it is useful for all types of psychological operations. Where radio stations are not common and receivers rare or nonexistent, receivers may be airdropped or otherwise distributed to key communicators, public installations, and selected individuals. Public listener systems may also be set up.

Advantages

Speed	Radio programs can be quickly prepared for broadcast. This is important when attempting to capitalize on targets of opportunity.
Wide coverage	Radio programs can reach members of large and varied audiences simultaneously.
Ease of perception	It requires little or no effort to visualize the radio message. Illiteracy does not prevent the listener from forming his individual image as he listens.
Versatility	Radio is easily adaptable to drama, music, news, and other types of programs.
Emotional power	A skilled radio announcer can exert tremendous influence on the listener simply with pitch, resonance, inflection, or timing.
Availability of receivers	Where availability or ownership of receivers is common, listening to radio is a habit. Ownership of receivers has increased greatly with the invention of transistors.

Disadvantages

Enemy restrictions	The target group may be subjected to severe censorship, thereby reducing the effectiveness of radio broadcasts. Some countries have only single channel radios with the frequency set to the government-owned station.
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	In some areas central receivers are connected to household receivers to control listening.
Jamming	Jamming may prevent the target group from receiving radio broadcasts.
Technical	Signal may be made inaudible or distorted by fading or static due to unfavorable atmospheric conditions.
Lack of receivers	In certain areas, so few receivers are available that radio may not be an effective medium.
Fleeting impressions	Oral media do not have the permanency of written media. Messages may be quickly forgotten or distorted.

PROGRAMING

Radio programing consists of planning the schedule, content, and production of programs during a stated period. Words, music, and sound effects are put together in various ways to produce the different kinds of programs. Some of the major types of radio programs are:

Straight news reports (without commentary).

Musical (popular, folk, classical).

Drama.

Speeches, talks, discussions.

Sports.

Interviews.

Special events; i.e., on-the-spot coverage of an election or the arrival of an important visitor, etc.

Religious.

Variety, a combination including music, skits, comedy, vaudeville, etc.

Announcements.

PRINCIPLES

Regularity	Regularity is an essential element of programing. The radio programmer must create habitual program patterns in order to build a regular audience. Content, style, and format should follow an established pattern.
Repetition	Repetition is necessary for oral learning; therefore, key themes, phrases, or slogans should be repeated.
Suitability	The radio program must suit the taste and needs of the audience. Program style and format should follow the patterns to which the audience is accustomed.

Exploitation of censorship	Discussion or presentation of banned books, plays, music, and political topics is readily received by the audience. The same is true for news withheld by censors. In breaking censorship, the psychological operator must be certain that the reason for censoring the items was political and not moral.
Voice	<p>Having announcers with attractive voice features is essential to successful radio operations.</p> <p>The emotional tone conveyed by the voice may influence the listener more than the logic of arguments.</p> <p>Announcers whose accents are similar to those of unpopular groups should not be used.</p> <p>Female voices are used to exploit nostalgia, sex frustration, or to attract female audiences. However, in some parts of the world, due to the status of women, female voices are resented.</p>

CLASSIFICATION

Programs are classified according to content, intent, and origin.

Content	The most common and useful radio program classification is by content. News reporting, commentaries, announcements, educational or informative documentaries, music, interviews, discussions, religious programs, drama, and women's programs are the most common examples.
Intent	<p>Classification by "intent" is useful in planning to obtain a desired response with a particular broadcast(s).</p> <p>Programs are produced to induce such emotional reactions as confidence, hope, fear, nostalgia, frustration, etc.</p>
Origin	Classification by "origin" pertains to the source of the message; i.e., official, unofficial, authoritative, high military command, political party, etc.

FORMAT

Format is the arrangement of the various segments of a program. A fundamental principle in preparing scripts for broadcasting is to standardize as much as possible without losing flexibility. A standard or familiar manner of presentation identifies a program for the viewers, helping to gain a regular audience. The format for a series of programs is usually established before the first program is broadcast. Radio station personnel, when establishing the format, should bear in mind that they must adhere to the highest professional standards of scriptwriting.

PROGRAM BUILDING

The essential factors of program building are:

Purpose

The writer's first concern is the purpose of the program. What is it to accomplish? Careful construction of the purpose statement of the program will aid in structuring the program and provide a measuring device to determine if the goals are being met.

A credible program requires extensive research. Thorough research of a subject uncovers and provides hidden color and details which add a note of authority to the narrator.

Testing

The script is not completed when the last page is written; the announcer (or actor) must read it aloud (rehearse it) to determine how it sounds.

SCRIPT WRITING

Principles

Aural medium

The special characteristic of radio is that it is entirely an aural medium. Radio depends entirely on the ear and must work completely on the image inspired by the sound waves coming from the speaker system.

The sound of a voice (or music) in a radio presentation raises a particular image in the listener's mind. Radio scripts must make clear to the listener the scene or idea desired by the psychological operator.

Power of suggestion

The mind of each listener is a vast storehouse of scenery. The radio writer, through speech, music, and other sounds, enables the listener to visualize each scene.

Freedom of movement

The radio scriptwriter can change scenes as frequently as desired. He can rapidly take his listeners from one event or point on earth (or in space) to another--its all in the mind.

Conflict

Conflict is the attention-getter in a radio script, gaining and increasing audience interest. Conflict is the hero against the villain, good versus evil, the struggle for survival, etc., with the psychological operator offering the solution by way of his script(s).

TECHNIQUES

The imaginative application of techniques is a way to success. The writer must be constantly alert for new ideas and be willing to experiment with variations of old established techniques. The techniques discussed below apply equally to the preparation of scripts for television and loudspeaker operations.

Simplicity	Use simple sentences and words commonly used by the target audience. However, sentence length should be varied to avoid a singsong or monotonous effect.
Conversational style	Write news in a popular, informal, relaxed style. The listener should not be aware that the news is being read to him.
Speech speed	The normal rate of speech will vary among announcers. The scriptwriter should time the rate of speech of each announcer in the language used and tailor the script to gain maximum impact in the allotted time.
Initial attention	As the listener may be running the risk of severe punishment for listening to a forbidden broadcast, the broadcast must gain instant attention. The initial part of the script should convince the listener that the program will be of interest to him. Therefore, the essential facts need to be in the first few sentences to gain interest and to insure that nothing of importance is lost if the program is jammed.
Pacing and timing	Pacing refers to the changes in quality, emotion, thought, or feeling written into the program by the scriptwriter. Timing is controlled by the director and is a shift in the speed of message delivery.
Tongue twisters	Avoid words that successively begin with the same sounds, such as "In providing proper provisional procedures . . ." Avoid words ending in "ch," "sh," "th." These sounds generally produce a hissing noise.
Numbers	Round numbers off, unless the specific number is important. For example, 20 thousand may be used instead of 20,158. Large numbers should be written in the manner easiest to read: one billion 200 million 50 thousand instead of 1,200,050,000.
Unfamiliar names	Avoid beginning a news item with a name that is unfamiliar to the target audience. Introduce the names as "The chief of police, Mr. Jones . . ."
Quotes	<p>The listener cannot see quotation marks. By voice inflection, the announcer can make it clear when a quotation begins and ends. Other methods may be used to indicate a quotation:</p> <p>In Smith's own words . . .</p> <p>To quote Smith . . .</p> <p>As Smith states . . .</p>
Punctuation	Ordinary punctuation marks are ignored in scriptwriting. They can, however, be used as a guide for the announcer. For example, parentheses may be used to set off a phrase. Key words should be capitalized for emphasis. Phonetic spelling may be used to help the announcer with difficult words.

**Profanity and
horror**

The announcer, speaking as a representative of his government and in keeping with the image of the serious, sincere spokesman, will not use profanity in his broadcasts. He will not use horrible descriptions of human suffering, although objective reports have a legitimate place in radio.

Abbreviations

Conventional abbreviations are seldom used. In scriptwriting "Mister" is used instead of "Mr." Any abbreviations used must be familiar to the target audience.

MONITORING

Radio monitoring provides information to the PSYOP current intelligence team on:

- The enemy's domestic and foreign propaganda programs.

- The propaganda the enemy aims at his own military forces in the field.

- Propaganda directed at our forces, and the necessary countermeasures which can and should be taken.

Radio monitoring also provides information for evaluating the effectiveness of US and allied PSYOP. The frequency band is scanned on a random basis to intercept other broadcasts of interest to the US and allied forces.

Operational rules require monitoring personnel to:

- Be objective when giving the monitoring reports.

- Be familiar with the names of persons and places likely to appear in the monitored broadcast.

- Monitor only the station(s) to which assigned. Scan the frequency band only when directed.

- Record the identity of the monitored station, the date and time, and other relevant information pertaining to the monitored broadcast.

- Bring significant information to the attention of superiors immediately. Do not wait to make a scheduled report.

- Use phonetic spelling when in doubt as to the spelling of strange names and places.

TEAM IC, MOBILE RADIO ENGINEER (RADIO TRANSMISSION)

Using the AN/TRT-22, with a general broadcast radius of about 100 miles (160 km), the IC team transmits radio programs in support of psychological operations. The team also performs direct support maintenance on organic communications-electronic equipment. It is capable of multishift operations.

The first consideration in placing the radio transmitter is operational effectiveness. In a wartime environment, consideration also must be given to enemy destructive operations, particularly local actions; e.g., placement of satchel charges, bangalore torpedoes, etc. This requires that not only must antennas be placed where they will operate effectively, but they must also be reasonably near transportation, sources of supply, and troops who will assist in affording protective security.

Reasonable nearness to transportation, engineer, and signal units merits priority consideration because:

The IC team is only 40 percent mobile with organic vehicles.

Movement of equipment--e.g., generators--may require use of heavy vehicles and equipment, such as cranes, wreckers, lowboys, or mobilizers, not available in PSYOP units.

Engineer and signal personnel are needed to erect, maintain, and dismantle the 250-foot (76 meters) antenna used with the AN/TRT-22 radio transmitter.

There is a recurring need for generator fuel, spare parts, and maintenance in addition to other recurring requirements.

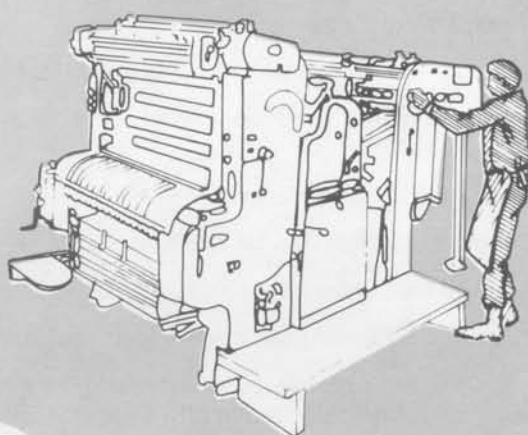
Gaining the attention of a PSYOP target audience, building its interest, and ultimately influencing its emotions, opinions, attitudes, and behavior, is not done quickly. Thus, the transmitter must remain on site for an extended time. In fact, in a conflict environment movement is so infrequent as to pose no burden on units needed to transport equipment.

Chapter Eighteen

PRINTED MATERIAL

18

Printed material, which includes leaflets, newspapers, posters, handbills, books, magazines, and such items as novelties, trinkets, and gifts with messages printed on them, is major means of conveying propaganda. A propaganda message printed on substantial material is a relatively permanent document. Once printed and delivered, it can be retained and readily passed from person to person without distortion.



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18

A properly developed and designed message (shape, color, format, texture, and other physical characteristics have been duly considered) can have a deep and lasting effect on the target audience.

ADVANTAGES

The printed word has a high degree of acceptance, credibility, and prestige.

Printed matter is unique in that it can be passed from person to person without distortion.

It allows for the reinforcing use of photographs and graphic illustrations which can be understood by illiterates.

It is permanent and the message will not change unless it is physically altered.

It can be disseminated and read or viewed by a larger, widespread target audience.

It can be reread for reinforcement.

Complex and lengthy material can be explained in detail.

It can be hidden and read in private.

Messages can be printed on almost any surface, including useful items.

Printed material can gain prestige by acknowledging authoritative and expert authors. This is particularly important in those societies where the printed word is authoritative.

DISADVANTAGES

A high illiteracy rate reduces the effectiveness and usefulness of the printed message.

Printing operations require special, extensive, continuing logistical support.

Dissemination is time-consuming and costly, requiring the use of special facilities and complex coordination.

As printed material must be physically delivered to the target audience, the enemy can prevent or interfere with its dissemination.

It is less timely than other means of communication.

It can be collected and destroyed by the enemy.

It can be altered by overprinting.

Where prohibited, it can readily be uncovered by search and stringent penalties imposed for possession.

Development and design of effective printed material requires trained and knowledgeable personnel.

PRINTED MATERIAL TECHNIQUES

Do's

Compile catalogs of printed material and make known their existence.

Use illustrations. They increase the attractiveness of the item, arouse the attention of the target audience, and convey meaningful information in a relatively small space. Illustrations are valuable when they enhance the printed message. The best illustrations are clear and appropriate. Use illustrations that show action.

Use photographs instead of sketches whenever possible (except when a sketch, e.g., a cartoon, a caricature, etc., will best evoke a desired emotion within the target audience). People regard photographs as positive proof of events being depicted. Thus, credibility can be markedly enhanced by using photographs of the actual scene or person rather than an artist's conception. Use sharp photographs; out-of-focus or blurred photographs reduce audience interest and the credibility of the message.

Use letters. Letters obtained from defectors, prisoners of war (always adhere to the Geneva Conventions), and other former enemy personnel can be extremely effective. There are, however, a few rules that should be followed:

Do not write letters for someone else. A letter that sounds as though it were written by other than the signing party has no credibility.

You may suggest possible themes and specific details, but the letter must be written by the signator.

Among some audiences poetry can be an effective medium for emotional and sentimental appeals. Good poetry elicits highly favorable reactions, but bad poetry elicits unfavorable reactions. In order to assure quality, well-known, popular poets should be employed.

Don'ts

Do not use long text (particularly in leaflets, posters, and handbills). People in enemy-controlled territory may have to read the printed item surreptitiously. A lengthy text increases the possibility of discovery and reduces the likelihood that people will risk reading it. Long texts discourage the average reader, and the poorly educated may not even try to read lengthy items.

Avoid small print; it discourages readers. Size of print must permit the message to be read immediately.

Avoid duplication of material. Issue only the superior product.

Do not distribute obsolete propaganda. Many printed items have a period of maximal impact. If distributed after the time for which they were meant, the impact may be minimal, nil, or adverse. Therefore, carefully watch for and do not reorder obsolete items (leaflets, posters, etc.).

LEAFLETS

A leaflet is a written or pictorial message on a single sheet of paper. It has no standard size, shape, or format. In selecting the size, shape, and weight of the paper, the primary consideration is that the paper accommodate the message and be easy to distribute. The recommended size, provided the message can be accommodated, is a 15.24 centimeters by 7.72 centimeters (6 by 3 inches) on 7.25- or 9.06- kilogram paper (16- or 20-pound). Leaflets of this size and weight have very favorable aerial dissemination characteristics.

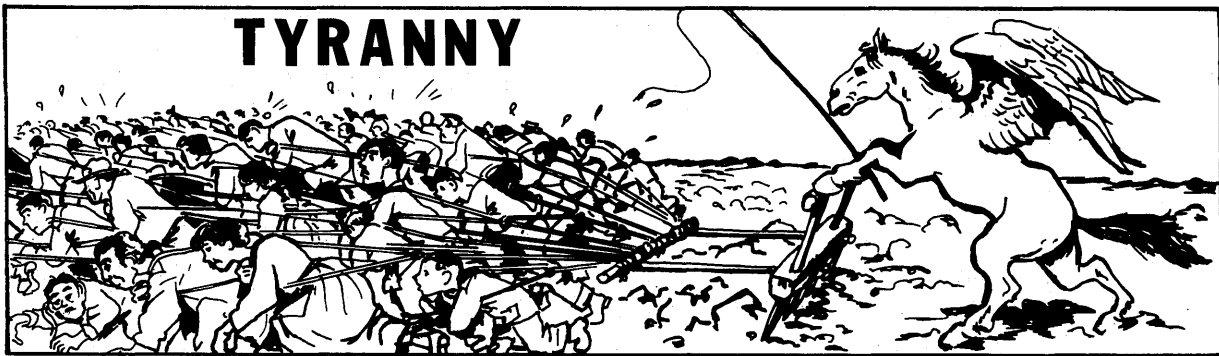


FIGURE 18-1
SAMPLE LEAFLET

Categories of Leaflets

Leaflets may be categorized as persuasive, informative, and directive.

The persuasive leaflet attains its objective through use of reason. Facts are presented so that the audience is convinced that the conclusions reached by the propagandist are valid.

The informative leaflet is factual. In presenting facts previously unknown to the audience, it attracts a reading public by satisfying curiosity.

The directive leaflet directs action when intelligence indicates the target is receptive. It is used to direct and control activities of underground forces. It may be used to disrupt enemy production by giving advance warning of bombing attacks and suggesting that workers in enemy production facilities protect themselves by staying away from work.

During consolidation and foreign internal defense operations, directive leaflets assist in maintaining law and order and in publicizing government programs.

Leaflet Use

Leaflets are developed for specific uses, such as standard, special situation, safe conduct, and news.

Standard leaflets contain general propaganda messages intended for repeated use in all types of psychological operations. They are particularly valuable in fast-moving tactical situations when PSYOP units are unable to prepare leaflets to fit rapidly changing situations. The content of standard leaflets used in support of foreign internal defense, unconventional warfare, and consolidation operations varies widely.

Advantages of Standard Leaflets. Use of standard leaflets:

Permits rapid dissemination of a variety of propaganda messages. Leaflets are prepared in advance, stockpiled in bulk, or loaded in disseminating devices for storage or immediate delivery. This provides flexibility for the use of PSYOP at all levels of command.

Permits standardization of selected propaganda themes or messages, insuring consistency of propaganda content.

Allows cataloging. Standard leaflets are easily cataloged. The availability of catalogs of standard leaflets simplifies the task of integrating selected leaflets into tactical operations.

Permits the most efficient use of large, high-speed presses at theater Army level and maximum use of commercial facilities.

Permits a joint production agency to better control printed propaganda materials.

Allows pretesting well in advance of dissemination.

Insures continuation of the PSYOP effort even though reproduction equipment may be destroyed or temporarily disabled.

Disadvantages of Standard Leaflets:

Standard leaflets are usually less effective than leaflets tailored for a specific action or situation.

They are subject to deterioration.

Circumstances and conditions make them obsolete.

Stockpiles of leaflets become a logistical burden and can be overprinted by the enemy.

They endanger enemy soldiers and civilians seen reading them.

They are instantly identifiable as a PSYOP device; therefore, the leaflet's credibility is suspect.

Contingency leaflets are prepared for an anticipated event.

Special situation leaflets are requested when the standard leaflet message is inadequate to exploit a particular propaganda opportunity, situation, or objective. They are developed when intelligence indicates the existence of a specifically exploitable,

but transient and presumably nonrecurring psychological opportunity. They are intended for use only once because the circumstances which govern their preparation are seldom duplicated.

Use in tactical operations. Tactical PSYOP achieve maximum results when leaflets have specific relevance at the moment of receipt, when psychological pressures are greatest, and when a reasonable course of action is presented. For example, surrender becomes a reasonable course of action only when under current conditions no other alternative action seems plausible.

Use in strategic operations. Strategic PSYOP are made more effective by the use of special situation leaflets that deal with specific problems and discuss them in terms of current facts. The impact is usually cumulative, rather than immediate, extending over weeks, months, or years. These leaflets are used primarily to communicate with special targets, such as foreign workers in enemy or occupied countries, ethnic or religious groups, members of a particular industrial facility or industry, and friendly resistance groups.

Operational considerations. The following operational considerations should determine the use of special situation leaflets:

- Serve as a means for timely exploitation of psychological opportunities.

- Serve as a means to communicate more intimately with the target audience and permit the message to be more precisely slanted to the immediate and particular needs of the audience.

Physical Characteristics of Leaflets

Leaflet production is affected by the physical characteristics of paper, such as shape, texture, quality, size, and weight. Legibility and color reproduction are noticeably affected by paper quality and texture. A high grade of paper is needed for correct color reproduction. Quality also affects durability. **Safe conduct passes should always be printed on durable, high quality paper.**

The major factors involved in selection of paper weights and leaflet sizes are:

- Message length.

- Artwork required.

- Delivery system to be used.

- Press capabilities.

- Purpose of the leaflet.

Format

Although leaflets generally are small, they should contain comparatively large print, particularly when directed toward the enemy. However, a small leaflet with large print makes it necessary to use a text that is brief, to the point, and immediately attractive.

Since enemy personnel and civilians in areas under enemy control are prohibited from picking up or reading leaflets from external sources, the large print enables them to read the message without touching the leaflet. In case the reader wishes to hide the leaflet and read it surreptitiously at a later time, a small leaflet is more easily concealed.

Sequence	The order of presentation must be carefully planned and appropriate for the cultural reading habits of the target.
Headline	The headline is important because it summarizes the entire leaflet and is the part of the text that first catches the eye.
Subheadline	Subheadlines are used to introduce separate paragraphs and highlight the significant points of the message.
Text	The text must be simple and to the point, containing only one theme. The first sentence should contain the substance of the message. Credible and verifiable facts should follow.
Photographs and illustrations	Since photographs and illustrations carry a message, they must be arranged and numbered in a culturally logical sequence. For example, in some cultures the sequence of reading is from right to left, in others from top to bottom and right to left. Placing a number in front of the caption which accompanies a photograph or illustration makes it easier for the reader to follow the sequence.
Captions	Caption all photographs and illustrations. If this is not done, the reader may not understand the point the message is trying to make.

LEAFLET DISSEMINATION

Printed material is the one medium that must be physically delivered to a target audience. This presents problems when attempting to disseminate printed propaganda in enemy-held territory. In denied areas, printed propaganda is generally disseminated by air delivery, line-crossers, military patrols, or international mail.

The method of delivery depends upon a variety of factors, such as:

Political conditions.

Military situation.

Target density and population patterns.

Number and size of leaflets to be delivered.

Enemy countermeasures.

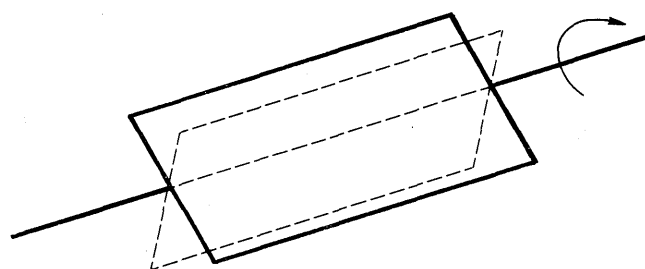
Availability of ordnance and delivery devices.

Weather.

Allocation of air sorties for leaflet missions.

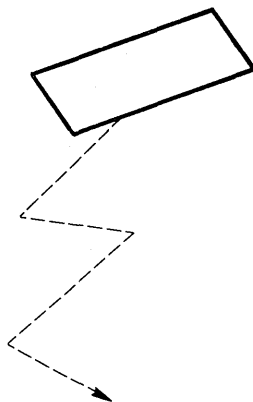
Air-to-Ground Delivery

Paper quality affects the drift of airdropped leaflets. If a leaflet, which offers little or no wind resistance, is dropped from a flying aircraft, it will be blown at about the same speed and direction as the wind. If there are updrafts or downdrafts, the leaflet will still follow the general direction of the wind. In areas of no turbulence the constant pull of gravity acting upon the leaflet will cause it to fall at a fairly constant rate. (See figure 18-3, Leaflet Patterns, and figure 18-4, Detailed View of Leaflet Patterns.)



AUTOROTATING MOTION

FLIP-FLOP MOTION



SPIRALING MOTION

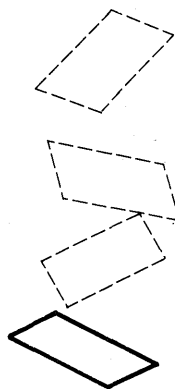


FIGURE 18-2
LEAFLET MOTIONS

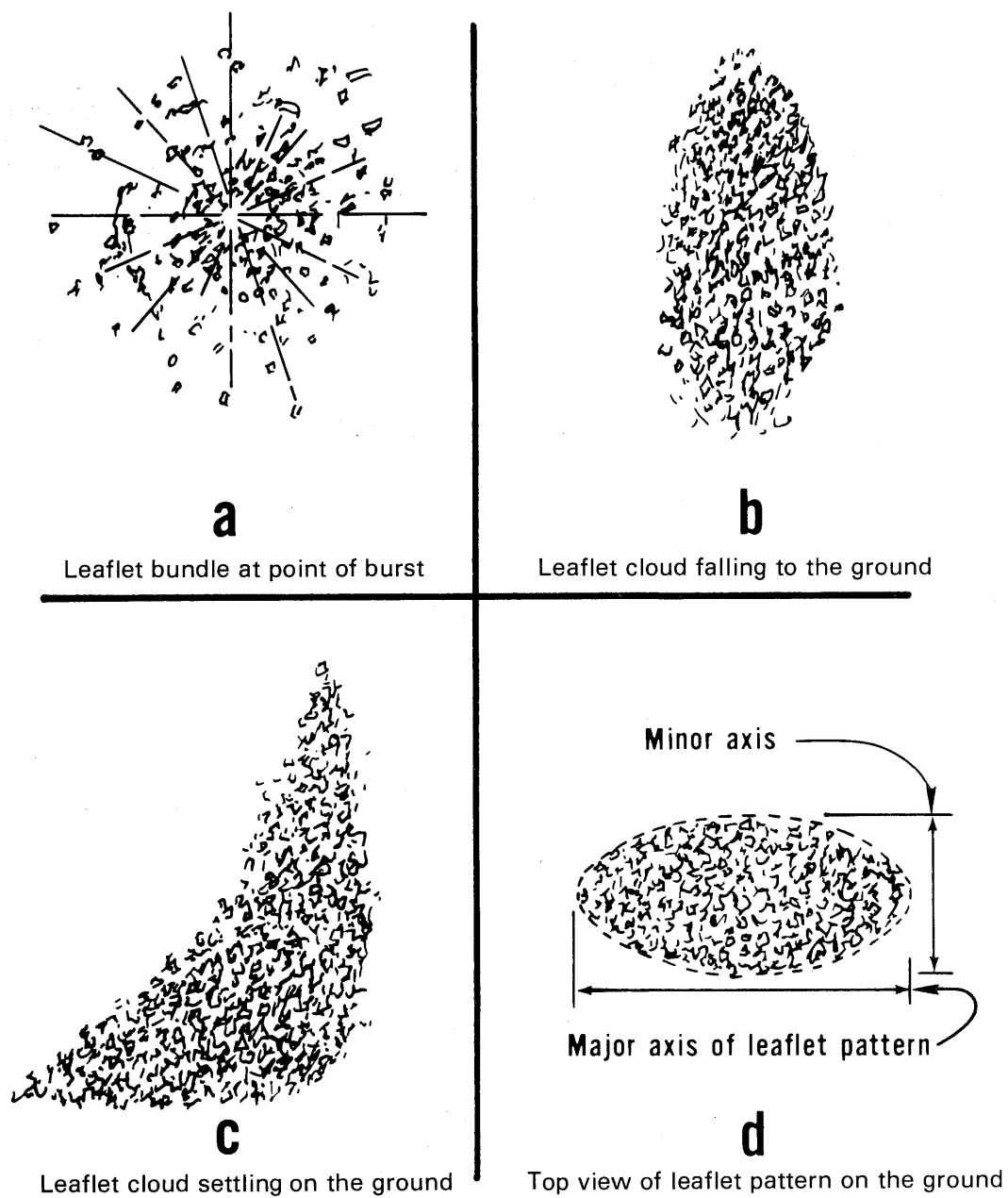


FIGURE 18-3
LEAFLET PATTERNS

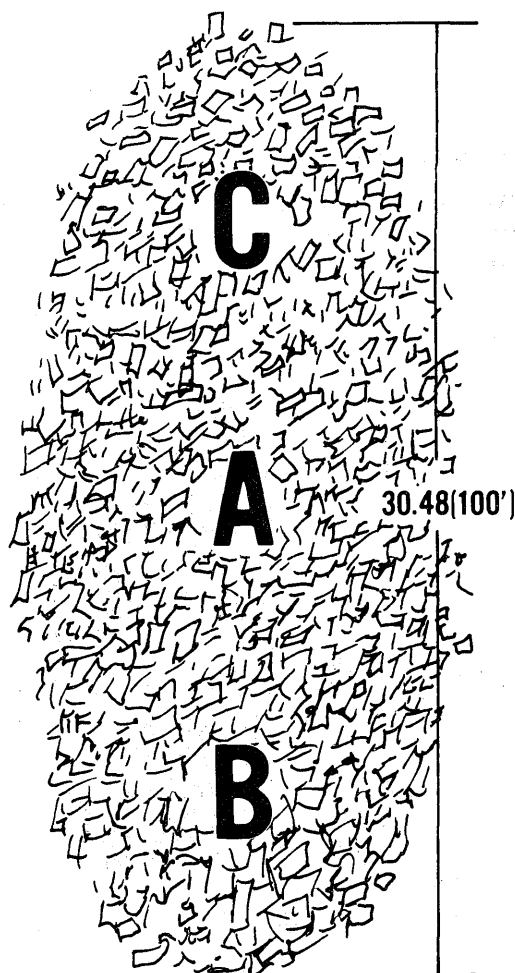


FIGURE 18-4

DETAILED VIEW OF LEAFLET PATTERNS

Leaflet density. The basic objective of leaflet drops is to place sufficient leaflets on the ground to insure that every member of the target audience will see (not necessarily possess) a leaflet. To insure that members of the target audience chance upon leaflets, their location and activities must be considered. Target mobility has a great bearing on the number and density of leaflets dropped and on the area that must be covered.

If the target is a soldier dug in a defensive position, his mobility and the possibility that he will find a leaflet are reduced. This type of target requires more leaflets than one consisting of rear area soldiers with greater mobility.

In mountains or jungle areas, mobility is generally restricted to roads, paths, and trails. Leaflets should be concentrated in these areas to increase the possibility that the target will chance upon them.

An urban population will require more leaflets than the population living and working in open rural terrain. The density of leaflets disseminated over a city should be heavy because a great percentage of leaflets will land on inaccessible rooftops.

As a "rule of thumb," the psychological operator should trade lower densities for greater area coverage. Villages and hamlets should be targeted so leaflets will land not only in the village where people live, but also in the fields where they work. Trails in and out of the area should be targeted.

Airdrop by hand (low altitude)

In areas where low-level delivery is feasible, leaflets can be dropped by hand through aircraft doors, ports, or specially fabricated chutes as the delivery aircraft passes over or circles the target area.



FIGURE 18-5

USE OF CHUTES IN LOW-ALTITUDE AIRDROP

Leaflets should be dropped in small quantities at very close intervals. This results in an almost continuous release of leaflets evenly distributed downwind and parallel to the flight of the aircraft. Two men can dispense thousands of leaflets per minute using this efficient, inexpensive technique.

Leaflets printed or distributed in areas of high humidity tend to stick together. Ruffling one or both ends of the leaflet stack insures complete dispersion.

High altitude free-fall

Leaflets dispensed from aircraft flying at altitudes up to 50,000 feet (15,000 meters) are carried to their target by prevailing winds. This technique is well suited for leaflet drops directed at large general target areas. It requires long-range planning and preparation to insure prompt reaction to favorable wind conditions. The advice of skilled meteorological personnel is essential throughout the planning and execution of this operation.

The characteristics of different size leaflets must be known to insure that the proper "mix" of leaflets is used to obtain dissemination throughout the target area.

Static line technique

At high altitudes the use of leaflet bundles or boxes opened by static line has proven effective. Through use of rollers on the deck of the aircraft, boxes weighing up to 50 kilograms (110 pounds) can be ejected with minimum exertion. The steps (figure 18-6) in preparing boxes for high-altitude, static line dissemination are:

Step 1. Using a punch, cut four holes about 6 centimeters by 2 centimeters (2 1/2 inches by 3/4 inch) as indicated in figure 18-6.

Step 2. Cut through the box from one hole to another as illustrated.

Step 3. Place a 5-centimeter (2-inch) wide strip of webbing through the holes. The length of webbing depends on the size of the box; it must be long enough to tie after the box has been filled with leaflets.

Step 4. Place a 10-centimeter (3-or 4-inch) strip of masking tape over the 5-centimeter wide strip of webbing.

Step 5. Cut all four corners of the box from the top to about three-fourths of the way down (or less).

Step 6. Again using masking tape, tape one strip up the cut portion and two across, as illustrated.

Step 7. After filling the box with leaflets, tie the two strips of webbing.

Step 8. Attach one end of the static line to the webbing ties. The length of the static line depends upon the type of aircraft, but it is normally about 4 1/2 meters (15 feet) long.

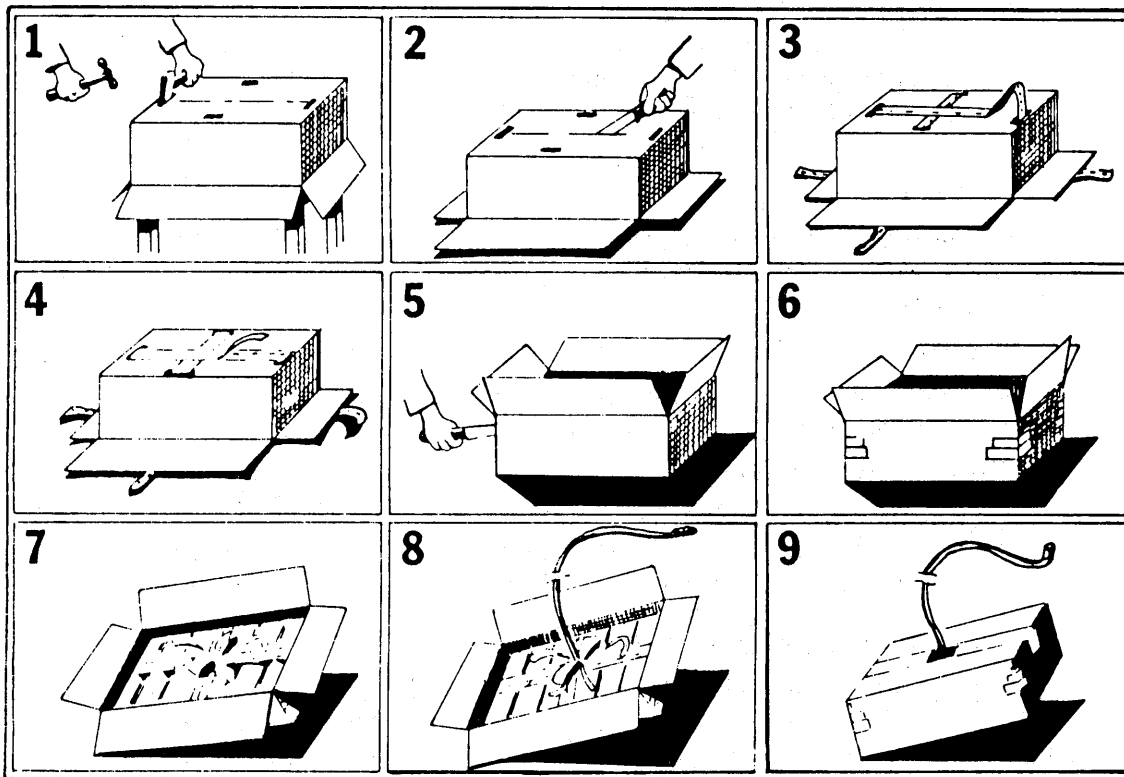


FIGURE 18-6

METHOD OF FABRICATING BOXES FOR HIGH-ALTITUDE STATIC LINE DISSEMINATION

The box is rolled out of the aircraft, and as the container comes to the end of the static line, the sides of the box split. In effect, it is turned inside out and the leaflets fall away followed by the empty box.

Balloon Operations

Balloon operations, useful for penetrating denied areas, can be conducted up to a range of 2,400 kilometers (1,500 miles). As the use of balloons for other than random drops requires a knowledge and study of wind patterns and air currents from the proposed launching site to the intended target area, a meteorologist must be available from the planning to the launching stages of the operation.

Types of balloons

Balloons are made of paper, rubber, or polyethylene.

Inflation and launching

Balloons should be inflated in an area protected from the elements and launched in winds of 5-7 knots. For safety, helium is preferred; however, hydrogen, a highly inflammable (explosive) gas, will support a slightly heavier load. **Extreme care is required when hydrogen is used:** The crew must wear protective cotton clothing and goggles; no silk, fur, nylon, or other potentially spark-producing clothing may be worn; all inflation equipment must be electrically grounded; and smoking is prohibited.

Other lighter-than-air gases, such as coal gas, may also be used.

Flight

Flight patterns are determined by the weather, wind, air currents, and gas pressure. Flight pattern tables showing altitude, time, distance, payload, and gross load are easily constructed. However, the slightest leak in the balloon will alter the flight pattern.

Tracking

Balloons can be radar tracked for about 40 kilometers (25 miles) by adding a conventional reflector. This distance is enough to establish wind patterns and trajectory.

Payload

Although the maximum payload is 9 kilograms (about 20 pounds), balloons are an inexpensive means of disseminating leaflets.

Coverage of the target

The actual leaflet impact area may vary from that predicted by as much as 10 percent. This does not mean failure, because the dimensions of the leaflet pattern will be large enough to assure substantial coverage of the chosen target.

Remotely Piloted Vehicles (RPVs)

Remotely piloted vehicles are capable of conducting a variety of combat missions including leaflet delivery, surveillance, reconnaissance, electronic warfare, and strike. The remote pilot is able to detect and identify targets, change the course of the RPV, and make decisions to initiate and terminate operations in the target area. **Pinpoint accuracy is possible.**

Use for leaflet drops

RPVs can be flown into enemy territories where the gun and missile antiaircraft defenses are very intense and the losses of manned aircraft might be unacceptable. RPVs similar to those used by the US Air Force for low altitude operations are readily adaptable to leaflet delivery for psychological operations. The RPVs can fly a preselected course at heights as low as a few hundred feet above ground level. The maximum speed will vary from Mach 0.8 for the clean configuration down to about Mach 0.6 when wing pods are installed. **These RPVs can be fitted with modified wing pods providing a large leaflet capacity per mission.**

Launching

Remotely piloted vehicles can be either ground or air launched, resulting in very flexible mission planning. Recovery of the RPVs is accomplished by a parachute system.

US Army variable speed training target

Smaller target drones, such as the US Army's new variable speed training target (VSTT), can be adapted for leaflet dispensing. Since these drones are smaller than the Air Force RPV, they are more easily adapted for short-range operations with the Army in the field.

Leaflet Bomb

The M129E1 leaflet bomb is an Air Force item, obtained through Air Force ordnance channels. Its empty weight is about 52 kilograms (115 pounds) and when loaded with leaflets, approximately 100 kilograms (225 pounds). It can carry approximately 30,000 13 x 20-centimeter (5 1/4 x 8-inch), 16-pound, machine-rolled leaflets. The maximum inside diameter of the bomb is 39.4 centimeters (15 1/2 inches); the minimum is 34.3 centimeters (13 1/2 inches).

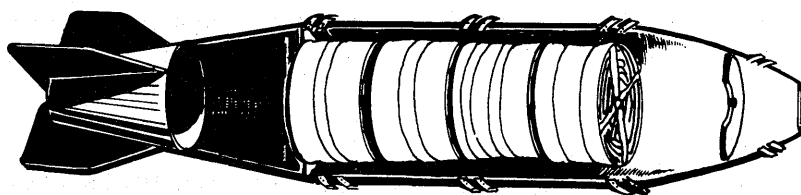


FIGURE 18-7

LEAFLET BOMB

Because of the internal configuration, the method for loading 13 x 20-centimeter (5 1/4 x 8-inch) leaflets is to use six 36-centimeter (14 1/2-inch) diameter rolls and one 32-centimeter (12 1/2-inch) diameter roll. Before the leaflets are placed in the bomb, the detonating cord is placed in the seam between the two halves.

The bomb is fuzed and armed at the launch base by Air Force or Navy personnel. When the bomb is released, the fuze functions at a predetermined time, detonating the primer cord separating the two body sections, detaching the fins, and releasing the leaflets.

Surface Delivery

The ground patrol is a useful element for disseminating small amounts of printed material behind enemy lines. Posters, leaflets, pamphlets, kits, and novelties may be placed or scattered by patrols and reconnaissance elements, usually while on regular missions.

Leaflets, posters, and propaganda items can be left behind during retrograde movements.

Infiltrators, line-crossers, and sympathizers can be used to distribute printed propaganda behind enemy lines. They frequently distribute gray or black propaganda.

Propaganda may be mailed to selected individuals or organizations through enemy or neutral postal systems.

In FID situations all agencies of the supported government and civilian public service organizations (to include the religious community) should be used as outlets and distribution points.

Seaworthy containers are easy and inexpensive to use as sea floats. Propaganda is placed in a waterproof container and dropped at predetermined locations at sea, in rivers, or streams. However, access to reliable hydrographic data (prevailing winds, tide, and currents) is needed in order to plot projected courses accurately. Containers may be made of wood, bamboo, glass, plastic, rubber, or similar material. Inexpensive plastic or cellophane envelopes can be profitably used for large-scale float operations. Large-volume dissemination is necessary because a great number of the containers will never reach the designated target audience.

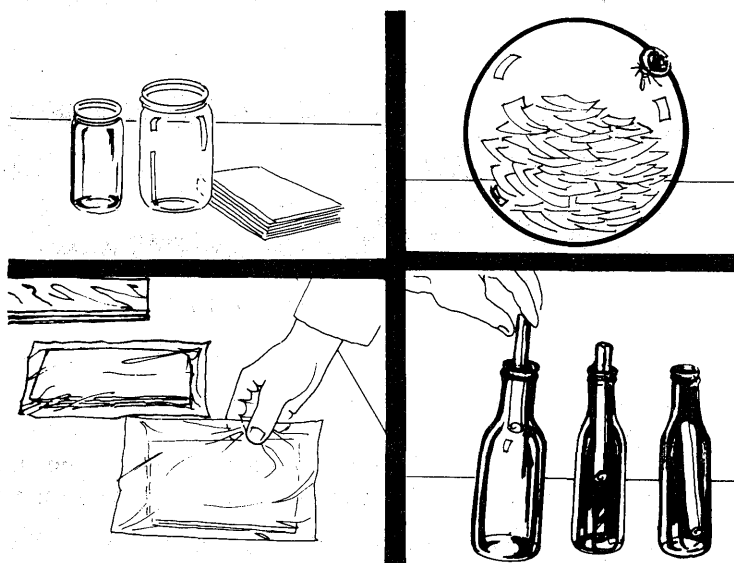


FIGURE 18-8

EXAMPLES OF SEA FLOATS

POSTERS, MAGAZINES, BOOKS, BANNERS, GIFTS, PERSONAL DISPLAY ITEMS

Other types of printed matter known as slow media are also used in psychological operations. These media include posters, pamphlets, books, magazines, reprints, gifts, and other items that contain printed messages. These materials are used primarily in populated and heavily traveled areas.

Posters

Posters include all single-sheet printed and graphic (illustrations, sketches, photographs, and symbols) materials which impart a message by being publicly posted. They are used to inform; their ultimate purpose is to enlist support. The message is generally emotionally colored, intended primarily to influence emotions and gain emotional support.

Posters are a universal medium, easy and inexpensive to produce and place--almost any surface is suitable. Since they present their message pictorially, they have a universal audience that includes illiterates. Properly placed, they cannot be avoided. When placed where people congregate, they stimulate discussion, broadening the impact of the message.

Since the opinions of neutral or other noninvolved foreign audiences may affect the courses of action of the enemy government, its security forces, or its allied and assisting government, posters should be made interesting and appealing to these foreign audiences.

Basic principles

Format.

Use formats, art styles, and forms that are familiar to and appropriate for the target audience. If possible, produce an art form that people want to possess and display.

Graphics.

Give maximum space to simple graphic productions. They attract an audience and significantly increase the impact of the message. Complex graphics, on the other hand, generally confuse the audience and are subject to ambiguous and undesirable interpretations by the audience.

Photographs.

Use photographs or photomontages. People believe them. The less sophisticated the audience, the greater the belief.

Symbols.

Use symbols, inanimate and animate (including human), that are significant to the target audience. Symbols which have positive characteristics (bravery, integrity, leadership, etc.) to the target add prestige and impact to the message.

Color.

As colors have different connotations in different societies, it is important that colors and color combinations used in posters be appropriate to the culture of the target audience. Improper colors may be counterproductive or, at best, nonproductive.

Print for a moving target.

It may be necessary for people to read the unfriendly poster while on the move. Therefore, the poster should be printed in letters of a size that can be read and seen at distances from 10 to 15 meters. For example, an enemy government may impose stringent penalties on any members of its armed forces or civilian population displaying an interest in enemy posters. Or if an enemy shadow government is active and effective, a display of interest in a poster may result in loss of life or limb, injury to family, or destruction of property.

Main point.

The main point, clearly and immediately stated, should occupy the visual center of the poster so it is seen first. In addition, all textual material must relate to the main point of the message.

The appeal.

Make the appeal positive, emotional, simple, and appropriate to the action desired. The poster is too compact to present complex arguments. Do not inflame emotions to the point of violent actions when such actions are neither appropriate nor desired. Overreaction may result in loss of liberty or life and of PSYOP effectiveness.

Slogans.

Slogans reinforce the graphic art and convey emotional appeals that will be long remembered. They are extremely effective in highly authoritative societies and cultures when related to highly emotional issues. In areas of mass illiteracy those who cannot read will hear the slogans spoken frequently, ask the literates to explain them, or have readers available.

Cliches.

Cliches, catchwords, and popular and stereotyped phrases may also be featured with somewhat the same effect as slogans.

Distribution.

Posters must be distributed according to a plan. "Hit-or miss" poster distribution has no part in a poster campaign.

Placement.

Place and display posters where people naturally and habitually gather, and where they have little or nothing to do for brief periods of time; e.g., bus and tram stops, rail stations and depots, parks, outdoor cafes, etc. Posters so displayed are most likely to be exposed to an audience and read.

Viewers tend to associate the poster with the area of placement. This is one reason why posters placed in areas dangerously reached (mountainsides, railroad trestles, water tanks, high walls, etc.) evoke admiration and have a high impact. By the same line of audience reasoning, posters placed in demeaning areas lose their effectiveness.

Vulnerabilities.

Posters are subject to weather conditions. They may be easily removed, destroyed, or defaced. Outdated posters may be used in enemy propaganda. Since a weatherbeaten, obsolete, or defaced poster is a liability, remove it quickly. This requires frequent visits to poster sites.

Magazines, Pamphlets, Reprints

Magazines, pamphlets, and reprints--although differing in length, use of illustrative material, and regularity of distribution--generally have common features as propaganda media:

- All are relatively expensive to produce and distribute.

- There is no limitation as to the kind of propaganda messages they can carry.

- The audience range is unlimited--youth groups, the mass of the population, intellectuals, professionals, etc.

These materials may be dropped from the air, mailed, delivered by messenger, placed in libraries and public areas, or handed out at meetings and rallies or surreptitiously handed out. The contents may be read and discussed on radio and television.

These publications have the basic advantages common to newspapers:

- They are relatively permanent.

- A wide variety of material may be presented, such as:

 - Complex and lengthy articles.

 - Technical and professional information and data.

 - News, features, and items of popular interest.

- Material may be set in a format and edited to appeal to the complete spectrum of audience groups.

- Colorful (and colored) graphic presentations may be made.

These publications also have the disadvantages inherent in newspapers:

- Production and distribution are time-consuming, complex, and expensive.

- They are not suitable for targets of opportunity.

- If national policy or situations change, they can be reminders of past policy and situations and used by the enemy.

- Magazines and pamphlets require the services of skilled editorial and production personnel.

Books

In consolidation and FID/IDAD operations, books are valuable when available to the audience, where there is an interest in them, and time is available to read them.

Manuscripts offered for publication may indicate popular feeling concerning local conditions, the government, the military, etc.

In the early stages of consolidation of occupied areas, PSYOP units will normally assist in distributing books from US or allied sources. PSYOP personnel may also be called upon to assist in a program to rehabilitate the book publishing industry.

The use of local publishers makes it easier to establish book translation programs by publishing, in the local language and at prices within the reach of the target group, selected books of friendly persuasion. Production shortages are likely to exist; therefore, paper stocks, ink, photographic supplies, and other material must be issued on a priority basis to approved publishers, concentrating on priority subjects.

Censorship may be necessary, even of translations of seemingly harmless literature.

A well-planned book program, including children's books, is of great value, particularly in education (and reeducation) programs. Books on any subject can be provided to all target groups. Popular reading will attract the less educated groups. Other books may help to acquaint the target audience with the achievements, aims, and advantages of the programs, activities, and operations of the United States, allies, or host country. A book written by a member (or ex-member) of the target audience can be most influential.

Banners

A banner is any piece of flag-like cloth, paper, or similar surface on which a message is drawn. A banner may be any size or shape, stationary or mobile.

They generally have a one-time use in intensely emotional situations. The message is short, hard hitting, and emotional with only one theme; it may be a rallying point for adherents to a cause. Banners indicate commitment on the part of those who make or carry them.

The major advantages of banners are their symbolism and ability to rally people to a cause. Other advantages are their high visibility and mobility. Banners are a complementary medium, however, and quickly become obsolete.

Personal Display Items

Personal items such as buttons, vehicular stickers, clothing (e.g., T-shirts), or jewelry which display a belief or cause indicate a relatively high degree of commitment. If seen in public at different times and places, they give the appearance of strength for the cause the propagandist advocates. People like winners, and this appearance of strength gains adherents.

Some of the items are relatively expensive, but if attractive, they will be sold. Purchase of expensive items is an indication of strong attachment to the cause represented by the purchased item.

Gifts and Novelties

Any item of practical use may be used as a message-carrying gift; i.e., soap, matches, lighters, cigarette holders, nail clippers, notebooks, calendars, recipe books, seed packets, grocery bags, salt, or other items for which the target group has a need. Novelties such as simple games, puzzles, wall stickers, playing cards, balloons, greeting cards, and other items of no great practical use may carry messages and be distributed.

The use of novelties must be decided at the highest echelon of command because:

- They are expensive.

- They require scarce resources.

- Distribution must be phased into the overall psychological operation.

Gifts, being useful items, do not serve well for propaganda, for the impulse of the recipient is to use the gift, ignoring the message. Gifts small in size need only be stamped with or contain the known symbol of the donor, a slogan, or a brief message. Gift wrappings or containers are also excellent media for messages, symbols, or slogans.

Normally, action messages should be avoided on gifts. An urgent warning or demand for serious sacrifices should not accompany trivial gifts.

The receipt of a useful or amusing item places the recipient in a receptive frame of mind for an accompanying propaganda message.

The major disadvantage of novelties and gifts is the cumulative expense of mass production and distribution. In addition, such items have only a peripheral, passive effect, seldom if ever moving people to action or changing opinions or emotions. At best, such items complement other media.

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APPENDIX A

REFERENCES

ARMY REGULATIONS (AR)

10-5	Department of the Army
310-25	Dictionary of United States Army Terms
310-50	Authorized Abbreviations and Brevity Codes
360-61	Community Relations
633-50	Prisoners of War: Administration, Employment, and Compensation
633-51	Civilian Internees: Administration, Employment, and Compensation

FIELD MANUALS (FM)

1-100	Army Aviation Utilization
3-1	Chemical, Biological, and Radiological (CBR) Support
6-20	Fire Support in Combined Arms Operations
11-40	Tactical and Audio-Visual Doctrine
19-4	Military Police Combat Support, Theater of Operations
19-10	Military Police Operations
19-40	Enemy Prisoners of War, Civilian Internees and Detained Persons
21-6	How to Prepare and Conduct Military Training
21-30	Military Symbols
21-76	Survival, Evasion, and Escape
24-1	Combat Communications
27-10	The Law of Land Warfare
29-3-1	Direct Support Supply and Service in Theaters of Operations

30-5	Combat Intelligence
30-10	Military Geographic Intelligence (Terrain)
30-16	Technical Intelligence
30-17	Counterintelligence Operations
31-20	Special Forces Operations (U)
31-85	Rear Area Protection (RAP) Operations
41-10	Civil Affairs Operations
100-5	Operations
101-5	Staff Officers' Field Manual: Staff Organization and Procedure
101-10-1	Staff Officers' Field Manual: Organizational, Technical and Logistical Data Unclassified Data

DA PAMPHLETS (DA PAM)

310-35	Index of International Standardization Agreements
525-7-1	The Art and Science of Psychological Operations: Case Studies of Military Application, Vol 1.
525-7-2	The Art and Science of Psychological Operations: Case Studies of Military Application, Vol 2.

JOINT CHIEFS OF STAFF PUBLICATIONS (JCS PUB)

1	Dictionary of United States Military Terms for Joint Usage (Short Title: JD)
2	Unified Action Armed Forces (UNAAF)

TABLES OF ORGANIZATION AND EQUIPMENT (TOE)

33-500 series	Psychological Operations Organization
41-500 series	Civil Affairs Organization

ARMY TRAINING AND EVALUATION PROGRAM (ARTEP)

33-500	Psychological Operations, Battalions and Subordinate Elements
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DEFENSE INFORMATION HANDBOOKS

Applied Journalism
Radio and Television
Research and Oral Communication

UNITED STATES INFORMATION AGENCY

40th - 42d Semiannual Report to the Congress

BOOK

A Psychological Warfare Casebook, ed. William E. Daugherty and Morris Janowitz, 1958.

APPENDIX B

DETAILED BREAKDOWN OF TEAMS

HEADQUARTERS AND ADMINISTRATIVE TEAMS

Team AA, Command and Control (Company).

Capabilities: Command, administrative control, and operational supervision of one to seven platoons or teams. Operates independently as liaison detachment. Parachute qualified when supporting an airborne unit.

Basis of Allocation: One per division, separate brigade, task force, MAAG, mission, or equivalent sized command; one per PSYOP liaison requirement.

Mobility: One hundred percent mobile in organic vehicles.

Team AB, Command and Control (Battalion).

Capabilities: Command, administrative control, and operational supervision of two to five PSYOP companies; logistical and administrative support for assigned and attached units; limited procurement and distribution of nonstandard items of equipment and supplies for subordinate operational elements. Operates independently as a liaison detachment. Parachute qualified when supporting an airborne unit.

Basis of Allocation: One per army component of a subordinate unified command, corps, civil affairs or military police prisoner-of-war command, or equivalent sized command or as required; one per PSYOP liaison requirement.

Mobility: Thirty-two percent mobile in organic vehicles.

Team AC, Command and Control (Group).

Capabilities: Command of two to five PSYOP battalions; coordination and operational supervision of subordinate elements; specified elements parachute qualified when supporting an airborne unit.

Basis of Allocation: One per theater army, army component of a unified command or corps.

Mobility: Thirty-seven percent mobile in organic vehicles.

Team AD, Command Assessment.

Capabilities: To deploy with a corps deployment package into a hostile area, and analyze and evaluate the psychological warfare possibilities. To make recommendations to ground force commander in the area of psychological operations. To determine what psychological functional teams should be deployed into the area. To evaluate the results of any psychological campaign that had been conducted prior to insertion. To plan the use of themes to be used in a PSYOP campaign.

Basis of Allocation: One per corps deployment package.

Mobility: This team has no organic TOE equipment requiring transportation. Non-TOE equipment and supplies constitute approximately 300 pounds (20 cubic feet).

SUPPLY AND MAINTENANCE TEAMS

Team BA, Supply and Maintenance.

Capabilities: Plans and coordinates logistical requirements for PSYOP units and teams; procures and distributes standard and nonstandard items of equipment and supplies; this team has a minimum vehicle maintenance capability to support PSYOP companies and teams.

Basis of Allocation: One per PSYOP company or separate teams as required.

Mobility: Sixty-seven percent mobile in organic vehicles.

OPERATIONAL TEAMS

Team FA, Propaganda.

Capabilities: Supervises the production of, or develops, propaganda; controls propaganda development activity supporting theater army, corps, division, MAAG, or mission. Operates independently as a liaison detachment as required. Parachute qualified when supporting an airborne unit.

Basis of Allocation: One per two to eight Teams FB, FC, FD, or FE, as required; one per major command; one per PSYOP liaison requirement.

Mobility: One hundred percent mobile in organic vehicles.

Team FB, Audio and Television Production.

Capabilities: Prepares audio and television propaganda in the form of sound tapes, scripts, news, commentary, and entertainment programs for dissemination to target audiences by radio, television, and loudspeaker; researches, locates, procures, and records indigenous music and sound effects. Requires augmentation by indigenous linguists. Must be employed with Team ID, Mobile Radio Production, when not operating in a fixed facility.

Basis of Allocation: One or more per propaganda development activity, as required; one or more per Team IA, Mobile Radio Operations, as required; one per ethnic group targeted or geopolitical area of interest.

Mobility: One hundred percent mobile in organic vehicles.

Team FC, Current Intelligence.

Capabilities: Develops intelligence requirements and processes intelligence information to support psychological operations; analyzes current intelligence to determine and verify psychological susceptibilities, vulnerabilities, and opportunities; interrogates prisoners and translates foreign language printed material. Parachute qualified when supporting an airborne unit.

Basis of Allocation: One or more per PSYOP company, battalion, or group as required; one per major enemy unit, ethnic group, targeted, or geopolitical area of interest.

Mobility: One hundred percent mobile in organic vehicles.

Team FD, Research and Analysis.

Capabilities: Performs detailed background study and analysis of specific target groups, prepares PSYOP contingency plans, conducts propaganda analysis of friendly and enemy PSYOP. Parachute qualified when supporting an airborne unit.

Basis of Allocation: One or more per PSYOP group or battalion as required.

Mobility: Fifty percent mobile in organic vehicles.

Team FE, Graphic Production.

Capabilities: Prepares copy and illustrations necessary to produce leaflets, posters, pamphlets, and newssheets. Parachute qualified when supporting an airborne unit. Requires augmentation by indigenous writers and illustrators.

Basis of Allocation: One per PSYOP group or battalion as required; one per PSYOP unit with organic, medium, or heavy printing platoon.

Mobility: Fifty percent mobile in organic vehicles.

Team GA, Light Printing.

Capabilities: Prints propaganda leaflets and newssheets on organic presses. Trims, cuts, packages, rolls, and distributes printed propaganda material for dissemination by aircraft, tube artillery, and other means. Prepares propaganda messages for special situation leaflets and newssheets, as well as reproducing scripts for use by tactical loudspeaker broadcasts. Parachute qualified when supporting an airborne unit.

Basis of Allocation: One or more per PSYOP battalion or company as required.

Mobility: Eighty percent mobile in organic vehicles.

Team GB, Medium Printing (Operations, Camera and Plate).

Capabilities: Plans, controls, and supervises printing operations to produce leaflets, posters, and other propaganda materials. Supervises one to four Teams GC operating at a single location. Executes process photography and prepares photolithographic plates for use by Team GC. Provides electrical equipment maintenance and supply support for itself and attached Teams GC. Capable of multishift operations.

Basis of Allocation: One per mobile medium printing requirement.

Mobility: Fifty percent mobile in organic vehicles.

Team GC, Medium Printing (Press and Processing).

Capabilities: Prints by photolithographic process up to 1,200,000 production units per day of propaganda leaflets, posters, and other printed material to specification. Trims, cuts, rolls, packages, and distributes propaganda material for dissemination by aircraft, artillery, and other means. Provides direct and general support maintenance for organic presses when supported by Teams BA and GB and when welding and machinist support is provided from an outside source. Requires electrical power and administrative transportation support for prolonged operations. Capable of multishift operations.

Basis of Allocation: One to four per Team GB as required.

Mobility: Sixty percent mobile in organic vehicles.

Team GD, Heavy Printing (Operations, Camera and Plate).

Capabilities: Plans, controls, and supervises printing operations to produce leaflets, posters, pamphlets, and other propaganda materials. Supervises one to four Teams GE operating at a single location. Executes process photography and prepares photolithographic plates for use by Team GE. Provides electrical equipment maintenance and supply support for itself and attached Teams GE. Requires a fixed facility and outside source of power for operation. Capable of multishift operations.

Basis of Allocation: One per fixed heavy printing requirement.

Mobility: Five percent mobile in organic vehicles.

Team GE, Heavy Printing (Press and Processing).

Capabilities: Prints by photolithographic process up to 5,000,000 production units per day of leaflets, posters, pamphlets, and other printed propaganda materials. Trims, cuts, folds, stitches, packages, and distributes reproduced material for dissemination. Provides direct and general support maintenance for organic presses when supported by Teams BA and GD and when welding and machinist support is available from an outside source. Requires a fixed facility, external power source, and administrative transportation support for operation. Capable of multishift operations.

Basis of Allocation: One to four per Team GD.

Mobility: Five percent in organic vehicles.

Team HA, Platoon Headquarters (Audio and Visual).

Capabilities: Supervision of two or more Teams GA, HB, and HC, or K-Series Teams. Operates independently as a liaison detachment. Parachute qualified when supporting an airborne unit.

Basis of Allocation: One or more per psychological operations group, battalion, or company as required; one per PSYOP liaison requirement.

Mobility: One hundred percent mobile in organic vehicles.

Team HB, Loudspeaker.

Capabilities: Plans, prepares, records, and conducts live or taped loudspeaker broadcasts in support of psychological operations; produces limited quantity of and distributes leaflets. Loudspeaker with power source may be manpacked or mounted on ground vehicles, boats, or aircraft. Parachute qualified when supporting an airborne unit.

Basis of Allocation: One or more per combat battalion or as required.

Mobility: One hundred percent mobile in organic vehicles.

Team HC, Audio Visual.

Capabilities: Exhibits sound motion pictures, film strips and photographic slides; conducts loudspeaker broadcasts; produces limited quantity of and distributes leaflets; conducts face-to-face propaganda; surveys local population to secure PSYOP intelligence.

Basis of Allocation: One or more per PSYOP battalion or company; one per combat brigade or as required by the tactical or political situation.

Mobility: One hundred percent mobile in organic vehicles.

Team IA, Mobile Radio Operations.

Capabilities: Supervision of Teams IB, IC, ID, and IE when more than one team is deployed to support an operational mission. Provides user level supply support for PSYOP-peculiar communications-electronic equipment organic to subordinate teams. Requires company level administrative support.

Basis of Allocation: One per PSYOP group, battalion, or company as required.

Mobility: Thirty-two percent mobile in organic vehicles.

Team IB, Mobile Radio Monitoring.

Capabilities: Provides news from friendly and enemy radio and teletype sources including CONUS stations and theater headquarters to provide a base for selected propaganda news broadcasts or other propaganda media. Provides tape monitoring of selected broadcasts for subsequent translation and analysis. Performs direct support maintenance on organic communications-electronics equipment. Capable of multishift operations.

Basis of Allocation: One per Team ID or FC as required.

Mobility: One hundred percent mobile in organic vehicles.

Team IC, Mobile Radio Engineer.

Capabilities: Transmits medium or shortwave radio broadcasts in support of propaganda operations. Performs direct support maintenance on organic communications-electronics equipment. Capable of multishift operations.

Basis of Allocation: One per propaganda broadcasting mission.

Mobility: Forty percent mobile in organic vehicles.

Team ID, Mobile Radio Production.

Capabilities: Prepares and produces up to 8 hours of original radio programs per day in support of propaganda operations. Requires augmentation by indigenous announcers and support by Team FB.

Basis of Allocation: One or more per studio production requirement.

Mobility: Sixteen percent mobile in organic vehicles.

Team KA, Fixed Motion Picture.

Capabilities: Provides for the operation of a motion picture installation and/or the operational supervision or advisory assistance for motion picture installations operated by indigenous personnel.

Basis of Allocation: One per motion picture theater when operated by team members. One per three to five motion picture theaters operated by indigenous personnel.

Mobility: One hundred percent mobile in organic vehicles.

Team KB, Fixed Printing.

Capabilities: Provides operational control or advisory assistance for an indigenous newspaper or other type publication plant in a specific geographical area. Parachute qualified when supporting an airborne unit.

Basis of Allocation: One per publications' plant as required.

Mobility: Thirty-three percent mobile in organic vehicles.

Team KC, Fixed Radio.

Capabilities: Provides operational control or advisory assistance for an indigenous fixed radio broadcasting station. Parachute qualified when supporting an airborne unit.

Basis of Allocation: One per fixed radio station as required.

Mobility: Sixty-seven percent mobile in organic vehicles.

Team KD, Display.

Capabilities: Supervises preparation of copy and illustrations; provides control or advisory assistance for the preparation of copy, artwork, displays, bulletin boards, signs, and other graphic media. Requires augmentation by indigenous interpreters, writers, and illustrators.

Basis of Allocation: As required.

Mobility: Thirty-three percent mobile in organic vehicles.

Team KE, Fixed Television.

Capabilities: Provides for the operational supervision and/or the operation of an indigenous television broadcasting station; provides advisory assistance for television networks or stations. Provides limited maintenance and repair of a television broadcasting station.

Basis of Allocation: One per television broadcasting facility or as required.

Mobility: Fifty percent mobile in organic vehicles.

APPENDIX C

FORMAT FOR BASIC PSYOP STUDY (BPS)

CLASSIFICATION

TITLE PAGE

Indicate the target country/area.

MAP OF COUNTRY/AREA

Title of map, map number, map sheet number, and scale.

EXECUTIVE SUMMARY

The executive summary should focus on those PSYOP-exploitable vulnerabilities enumerated in the BPS. It should be written in a clear, brief, accurate, and coherent form. The summary should open with a short résumé of the area with its strategic significance and then state the PSYOP-relevant characteristics and conclusions reached in the BPS.

TABLE OF CONTENTS

See Tab 1.

INTRODUCTION

See Tab 2.

CHAPTER 1. HISTORY AND IDEOLOGY

This chapter gives a general review of the evolution of the state and its people, focusing on those aspects having psychological significance. It is not to be a detailed chronology of the country's development. However, the country's history and those factors which contribute to its formation have a preeminent relationship to the country's historical perspective, its attitudes, and its current world position.

The history chapter must be comprehensive in its "issue" orientation because of its special importance to psychological operations. An analysis of those historical issues which bear directly upon present political, economic, and military policies can provide to the operator a solid foundation for the rest of the study.

CHAPTER 2. GOVERNMENT AND POLITICS

This chapter covers the country's political system, giving a descriptive analysis of the sources of political power, the policymaking process, and the political complexities of the country's government. It should include the system's responsiveness to pressure and the system's influence on the country's politics.

When discussing politics, particular attention must be given to the role of the individuals and special interest groups or political parties in the political system. This should include the political attitudes and values of the population, their view of the political system, and the function of the government within their society.

CLASSIFICATION

CLASSIFICATION

CHAPTER 3. FOREIGN RELATIONS AND POLICY

This chapter surveys the country's foreign relations, concentrating on its political alignment in world affairs and its relationship with the United States. It describes the foreign policy of the country, but more important, it analyzes and interprets why the country acts as it does in international affairs.

This analysis and interpretation should cover those leaders who make the decisions that determine foreign policy formation and the success of their policy. This study of the foreign relations gives the psychological operator a view of the country's world position and the reasons for this position. The basis for internal support or opposition, as well as the political climate created by these policies, should be examined.

CHAPTER 4. SOCIETY AND CULTURE

This chapter is a descriptive analysis of the subject country's social setting. This analysis provides the operator with the knowledge needed to understand with whom he is to communicate in a possible PSYOP campaign. Every major aspect of the country's social dynamics which can assist in the assessment of its PSYOP potential must be analyzed.

A study of the country's social organization covers all socially transmitted cultural and behavior patterns and characteristics of the people. These include the society's social values and the role of the family. Its culture, social organization, customs, ethnic composition, and the interrelated effects of religion, language, and history should be addressed.

Associated with this structure are those social patterns of religion, culture, and education which determine the character of a society. An important aspect of the country's social condition, the status of the population's health, and those public programs (or the absence thereof) which seek to improve the general welfare may provide key PSYOP indicators. Social problems and intergroup tensions should be covered.

CHAPTER 5. THE ECONOMY

This chapter presents a brief analysis of the characteristics, structure, and dynamics of the national economy. It covers the target country's economic strengths and weaknesses, current economic and labor problems, and potential economic development.

The general description of the economy details the economic base of the country and the importance of agriculture, industry, and trade. This information is used to determine if the individual's needs are being met by the present economic structure. These economic considerations explain many of the sociological conditions of psychological importance. Of particular importance are perceptions within the society of the wisdom of policies, and how citizens individually or by referent groups stand to gain or lose by the policies.

CHAPTER 6. THE MILITARY ESTABLISHMENT

In addition to its primary function of external defense, the military establishment in most countries can be a valuable participant in, or impediment to, the country's programs of political life. Even when the military establishment is not directly involved in competition for political power, its actions and programs can have a major impact on social and political development.

This chapter is not "order-of-battle" oriented, but it should, as a minimum, analyze and provide conclusions on the following topic areas:

CLASSIFICATION

Emergence of the modern military establishment.

Military roles in the political, economic, and social spheres, and the effects of these roles.

Issues creating cohesion or conflict within the armed forces.

Internal conflicts within the military establishment.

Extent, quality, and influence of foreign military assistance.

CHAPTER 7. COMMUNICATION PROCESS AND EFFECTS

This chapter contains the information essential to understand communications patterns for the implementation of a psychological campaign. It should cover how and through what social means the people of the country communicate with one another (as distinguished from the technical data in the appendix on communications facilities). Data should include languages and language groups, nonverbal communication, and nonverbal symbols peculiar to the country's culture or cultures. It should identify distinctive styles in rhetoric or the visual arts that are significant to PSYOP, as well as dramatic, poetic, and musical forms, that could be used to inspire attitudes, emotions, and behavior desired by the PSYOP planners.

It should include data on formal and informal leadership positions in the society whose incumbents serve as key communicators and opinion leaders. An analysis of the readership and listenership habits of the society as well as an analysis of media effectiveness should also be presented. Freedom of the press issues, if any, should also be addressed.

CHAPTER 8. PSYOP, POLITICAL WARFARE, AND OFFICIAL INFORMATION

This chapter furnishes information on the propaganda conducted by or directed toward the subject country. Research personnel should examine the information efforts of the country's government and agencies, the kinds of domestic and foreign propaganda being produced for the current situation, and the political and philosophical direction of that information. A careful analysis of the effectiveness of propaganda techniques used by institutions within the society may provide useful insights for future US PSYOP efforts.

Propaganda can also come from other countries directed toward the subject country to achieve certain political aims. This chapter, therefore, should explain these foreign efforts, the media employed, to whom directed, and for what political end. Particular attention should be given to United States efforts and facilities for possible use in a future psychological campaign.

CHAPTER 9. POTENTIAL TARGET GROUPS

This chapter is the most important chapter of the BPS in that it synthesizes the most important information and applies it to the identified target groups. There are categories of information that must be used to define the psychological characteristics of each significant target group. These categories are as follows:

The attitude, past and present, and behavior of the target toward the key issues and conditions.

The accessibility of the target to propaganda, including the media to which the target is most responsive.

CLASSIFICATION

Susceptibility to persuasion. This requires a thorough analysis of the conditions and attitudes that pertain to the target. This analysis should determine what behavior patterns the target can be persuaded to adopt, what resistance must be overcome, and what the possibilities are of successful target persuasion. It is recognized that some targets may not be susceptible to any line of persuasion. Conditions change and so may the susceptibility of the target.

The **effectiveness** of the target in influencing other targets or the target's ability to take direct action to influence events. In the case of a single individual, this means how effective he is as a communicator. In the case of a group, it means what is the power of the group in relation to other groups in effecting attitude change or in taking direct action in accordance with the behavioral results desired by the psychological operator. Initially, a group's effectiveness may not be what is desired, but as the situation changes, its effectiveness may also change.

Vulnerabilities and sensitivities. From the standpoint of identifying motivating themes or themes to be avoided, it should be considered that each target will be vulnerable to certain issues and conditions just as it will be sensitive to its own values.

(U) TABLE OF CONTENTS

(U) Summary	v to vi
(U) Table of Contents	vii to viii
(U) Introduction	ix to x

CHAPTER

1 (U) History and Ideology	1-1 to
(Subchapter headings)	
2 (U) Government and Politics	2-1 to
(Subchapter headings)	
3 (U) Foreign Policy	3-1 to
(Subchapter headings)	
4 (U) Society and Culture	4-1 to
(Subchapter headings)	
5 (U) The Economy	5-1 to
(Subchapter headings)	
6 (U) The Military Establishment	6-1 to
(Subchapter headings)	
7 (U) Communication Process and Effects	7-1 to
(Subchapter headings)	
8 (U) PSYOP, Political Warfare, and Official Information	8-1 to
(Subchapter headings)	
9 (U) Potential Target Groups	9-1 to
(Subchapter headings)	

APPENDIX

A (U) Country Summary	A-1 to
B (U) Government Structure	B-1 to
C (U) Members of Government and Key Personalities	C-1 to
D (U) Communications Facilities	D-1 to
E (U) Bibliography	E-1 to

INTRODUCTION

() This Basic PSYOP Study (BPS) is intended to provide a summary of those aspects of (country name) that are deemed to have significance to the planning and conduct of psychological operations. The study, therefore, strives to isolate and identify those PSYOP-relevant vulnerabilities, characteristics, insights, and opportunities that are perceived by the authors to exist in (country name). It is prepared specifically as a basic source document for further development of estimates, plans, and annexes. Although this study can assist in developing concepts for contingency planning, its composition has not been tailored to the conduct of any current plan. Rather, it is intentionally a "neutral" document in the sense that its data and insights can be used with a wide variety of possible present and future political and military developments in the region.

() (Here should be inserted a paragraph which references the authority directing the study, research cutoff date, and provisions for update.)

() The format directed for use in this Basic PSYOP Study is designed in all cases to focus on the PSYOP aspects of the many topics addressed. It is intended that this document should not be viewed as a comprehensive and self-contained area study, but should instead be used in conjunction with, and as a complement to, such other standard references as the Department of the Army Area Handbook Series. In addition, the following aspects of the purpose and method of preparation of this BPS are pertinent:

- a. It results from research that combines both the standard classified products of the national intelligence community and the findings of the academic social science disciplines.
- b. It attempts to be more analytical than descriptive in nature and is, therefore, subject to varying individual perspectives.
- c. It should be read, and its conclusions analyzed, in conjunction with other Basic PSYOP Studies prepared on (regional area).
- d. It does not presume to be either a definitive statement of US foreign policy or a comprehensive and authoritative analysis of (country name), except in those specialized areas that are of direct PSYOP relevance.

() (Here should be inserted a statement of US Policy objectives toward the country in question. This information should be extracted in order of priority from the appropriate ICA Country Plan, Department of State Policy Memorandum, or similar document.)

() Research has revealed certain areas where gaps exist in material presented in this study. These gaps were occasioned by such limitations as the classification level of the BPS, availability of complete and timely information, or time constraints on the scope of the future research. Their enumeration here will hopefully aid future research and point out further inquiries to be made by users of this document.

() (Insert here those issues or BPS relevant data which could not be addressed or completely answered.)

APPENDIX D

FORMAT FOR PSYOP ESTIMATE OF THE SITUATION

CLASSIFICATION

Issuing Headquarters

Location of CP

Date/Time Group

PSYCHOLOGICAL OPERATIONS ESTIMATE OF THE SITUATION NO. __

Reference: List maps, charts, and source documents necessary for understanding the estimate.

1. MISSION

The restated mission determined by the commander after he completes mission analysis in the sequence of command and staff actions. (See FM 101-5.)

2. THE SITUATION AND CONSIDERATIONS

a. Intelligence Situation.

- (1) Characteristics of the area of operations. Analysis of Area of Operations No. ____.
- (2) Enemy strength and dispositions. Identification of forces opposing the command.
- (3) Enemy capabilities.
 - (a) Affecting tactical mission. Intelligence Estimate No. _____.
 - (b) Affecting PSYOP activities.

b. Tactical Situation.

- (1) Present dispositions. Operation Estimate No. _____.
- (2) Possible tactical courses of action.
 - (a) Course of action one.
 - (b) Course of action two.
 - (c) Course of action three.
- (3) Projected operations.

c. Personnel Situation.

- (1) Personnel Estimate No. _____.
- (2) Critical shortages of personnel that will affect PSYOP support of the operation.
- (3) Availability of linguistic personnel.
- (4) Availability of indigenous personnel for employment with PSYOP.

CLASSIFICATION

D-1

CLASSIFICATION**d. Logistic Situation.**

- (1) Logistic Estimate No. _____.
- (2) Status of PSYOP specific equipment.
- (3) Availability of PSYOP related supplies.

e. Civil Affairs Situation.

- (1) Civil Affairs Estimate No. _____.
- (2) Disposition of CA units.
- (3) General attitude of population.
- (4) Anticipated enemy civilian personnel reactions and possible effects upon our actions.

f. PSYOP Situation.

- (1) Disposition of PSYOP elements. (Annex A--Overlay, Disposition of PSYOP Elements.)
- (2) PSYOP situation in the area of operations. Include considerations such as areas to be considered occupied and those to be considered liberated. Include any missions, directives, objectives, or guidance received from higher authority.
- (3) Requirements for indigenous personnel support.
- (4) Peculiarities of operations to be supported that may impact on PSYOP, such as planned use of nuclear weapons, possibility of pursuit or exploitation, planned use of deception measures, previous operations and their effect on enemy morale, etc.

g. Assumptions.

- (1) Approximate length of time that area should remain under control of the command.
- (2) Probable enemy PSYOP reaction to planned operations.
- (3) Other assumptions as required.

h. Special Factors. Other difficulties, difficult patterns, or considerations that may detract from or assist in the accomplishment of PSYOP objectives.**3. ANALYSIS**

- a. Analyze each course of action to determine its advantages and disadvantages for the conduct of psychological operations. This is done by wargaming the course of action from the current disposition through the objective. (Annex B--Target Analysis of Enemy Forces.)
- b. The first part of the analysis is to determine those considerations or enemy capabilities listed in paragraph 2a that will materially assist in choosing the best course of action.
- c. The second step is to analyze each contemplated course of action versus the enemy capabilities. Each course of action is analyzed separately against the enemy capabilities to determine the probable psychological impact.
- d. There is no attempt to compare courses of action in this paragraph.
- e. Identify deficiencies and advantages and disadvantages of each course of action.

CLASSIFICATION

4. COMPARISON

- a. Compare the courses of action to determine which one offers the best chance of success. In the first paragraph, list the advantages and disadvantages of each course of action that affect PSYOP.
- b. Develop and compare methods of overcoming disadvantages in each course of action.
- c. In the last subparagraph state a general conclusion as to which course of action offers the best chance of success for PSYOP.

5. CONCLUSIONS

- a. PSYOP can support the operation.
- b. Tactical course of action number _____ can best be supported from resource viewpoint. Course of action number _____ provides the most exploitable PSYOP situation.
- c. Deficiencies requiring the commander's attention.
- d. Recommend the adoption of course of action number _____.

XXXX

G5

Annexes: A--Overlay, Disposition of PSYOP Elements (omitted)
 B--Target Analysis, Enemy Military Units (omitted)
 C--Target Analysis, Civilian Groups in Area of Operations (omitted)
 D--Proposed Employment of PSYOP Resources (omitted)

NOTE:

The information contained in the Psychological Operations Estimate of the Situation may be presented in either of two ways. It may be a separate PSYOP estimate as indicated in this appendix, or the considerations may be included in the Civil-Military Operations Estimate as indicated in FM 101-5. This estimate is normally the responsibility of the CMO staff officer, based on input provided by the supporting PSYOP unit.

The PSYOP staff officer in a tactical unit may also make an estimate to determine the best method for accomplishing a PSYOP task. In such a case, he may use the format for the tactical commander's estimate contained in FM 101-5. Similarly, the PSYOP unit commander or staff officer can use the combat service support commander's estimate of the situation.

APPENDIX E

FORMAT FOR PSYOP ANNEX/APPENDIX

CLASSIFICATION

Copy No ____ of ____ copies
Issuing Headquarters
Place of Issue
Date/Time Group
Message Reference Number

ANNEX/APPENDIX ____ (Psychological Operations) to OPORD No. ____.

References: Maps, charts, documents, reports, and other plans which have a significant bearing on the conduct of PSYOP.

Time Zone Used Throughout the Order:

1. SITUATION

a. Enemy Forces.

- (1) Annex A (Intelligence) to OPORD No. ____.
- (2) Psychological situation.
 - (a) Enemy military and civilian morale.
 - (b) Enemy strengths and weaknesses.
- (3) Ideological and psychological factors, favorable and unfavorable.

b. Friendly Forces.

- (1) OPORD No. ____.
- (2) PSYOP capabilities and plans of friendly forces and agencies.
- (3) Refer to command relationship agreements and to requirements for interagency support.
- (4) Periodic PSYOP Report ____.

c. Attachments and Detachments. Task organization OPORD ____.

2. MISSION

A clear, concise, and complete statement of what PSYOP is to accomplish in support of the mission stated in the basic OPORD.

CLASSIFICATION

CLASSIFICATION

3. EXECUTION

- a. **Concept of Operation.** Summarize the course of action and state generally the concept for the conduct and control of PSYOP. Where applicable, indicate phasing of the operation and arrangements for the transfer of operational control of PSYOP assets or the transfer of operational control of psychological operations.
- b. **Tasking.** By subparagraph task the major subordinate headquarters to conduct PSYOP in support of specified objectives and tasks.
- c. **Target Groups.** Identify enemy forces and major target groups that the operation is intended to influence or that are affected by PSYOP actions, information, and propaganda activities conducted in support of the operation. Separately identify subgroups of significance to PSYOP. Include an analysis of the vulnerabilities and effectiveness of each target group and each group's susceptibility to PSYOP. This information may be included as an APPENDIX/TAB to the PSYOP ANNEX/APPENDIX.
- d. **Objectives.**
 - (1) List in separate subparagraphs the officially stated US national policy objectives and the US national psychological objectives within the countries involved.
 - (2) In separate subparagraphs, state the psychological objectives that are to be achieved from the planned operation or that are to be induced in support of the action.
- e. **Themes and Actions To Be Stressed or Avoided.**
 - (1) Themes to be stressed.
 - (2) Themes to be avoided.
 - (3) Supportive actions.
 - (4) Prohibited actions.
- g. **Coordinating Instructions.** List details of coordination, control, and instructions applicable to two or more elements of the command. List procedures necessary for approval of PSYOP to be conducted by subordinate units.

4. SERVICE SUPPORT

- a. **Logistics.** Provide a statement of the logistical arrangements applicable to PSYOP but not covered in the basic order. This paragraph may include but is not limited to:
 - (1) Stocking of propaganda and information materials.
 - (2) Provisions for the supply and maintenance of PSYOP-peculiar supplies and equipment.
 - (3) Provisions for control and maintenance of indigenous equipment and materials.
- b. **Administration.** Provide a statement of administrative arrangements applicable to PSYOP not covered in basic plan. The following items may be included:
 - (1) Requirements for special reports.
 - (2) Fiscal matters relating to special funds.
 - (3) Personnel matters relating to indigenous personnel.
- c. Annex ____ (Service Support) to OPORD ____.

CLASSIFICATION

CLASSIFICATION**5. COMMAND AND SIGNAL.**

- a. Signal. Refer to appropriate annex.
- b. Command. Provide command instructions concerning command post locations. May include topics concerning relationship arrangements of nonmilitary assets available for support.

XXXX
MG

OFFICIAL
/s/XXXX
XXXX
G5

Appendixes/Inclosures:

Distribution:

NOTE: The information concerning the conduct of PSYOP may be presented as a separate appendix to the Civil-Military Operations Annex or included in the body of the CMO Annex. This is normally prepared by the CMO staff officer based on input and recommendations from the supporting PSYOP unit.

CLASSIFICATION

APPENDIX F

EXPLANATION OF TARGET ANALYSIS WORKSHEET

The target analysis worksheet (figure F-1) is a systematic method of evaluating tentative targets by relating conditions to the psychological objective. It is the basis for the Psychological Operations Campaign Control Sheet. A separate worksheet should be completed for each tentative target surfaced from the study of intelligence. When completed, each target analysis worksheet should be filed in the appropriate PSYOP workbook.

National objective: Obtain from US policy statements and documents. Sources for US objectives relevant to US Army PSYOP might be unified command military plans, ICA Country Program memorandums, Department of State and Defense policy statements, and other related command PSYOP guidances.

Mission: The mission received from the next higher headquarters or that mission which results from an analysis of the unit's general mission and the resultant PSYOP tasks.

Target: Select target based on PSYOP mission.

Conditions: Current events and environmental factors which affect the target group.

Attitude: The known attitudes of the target group relevant to the mission are listed.

Target susceptibility: Information relative to the ability to persuade the target group. Consideration is given to the unfulfilled wants, needs, and feelings of the target group. Susceptibility must not be confused with accessibility.

Psychological objective: The type of behavioral or attitudinal change desired of the target to help accomplish the mission. Psychological objectives should be stated in measurable terms. The psychological objective must be supported by information concerning target susceptibility and effectiveness.

Target effectiveness: The study of power; it deals with the target group's ability to accomplish the psychological objective.

Impact indicators: Those factors which indicate the target audience responded to PSYOP and thus fulfilled the psychological objectives. In devising the psychological objective(s), the analyst must consider questions to be answered which measure its achievement.

NOTE: Those blocks with an asterisk (*) should be cross-referenced to the appropriate section, page, and paragraph of the PSYOP workbook or other reference source. If information to support these blocks is not available, it may be necessary to submit an EEL to intelligence gathering sources.

TARGET ANALYSIS WORKSHEET

NATIONAL OBJECTIVE: To assist oppressed people in self-determination.

MISSION: (PSYCHOLOGICAL OBJECTIVE) Stimulate disaffection against government in power.

TARGET	*CONDITIONS	*ATTITUDE	*TARGET SUSCEPTIBILITY	PSYCHOLOGICAL OBJECTIVE	*TARGET EFFECTIVENESS	IMPACT INDICATORS
Dock workers in _____	Current intelligence indicates that the shortage of food in _____ has resulted in food rationing which favors government officials and deprives urban workers of all but a subsistence diet. (References:	Increasing resentment and animosity toward local bureaucrats. (References:	It should be relatively simple to communicate with this group because their basic need for food is not being effectively met. Their primary concern centers on obtaining sufficient food. They have demonstrated against the government and as a result some were killed and many imprisoned. Preferred communications are those delivered in person by an emotive orator of high prestige. (References:	Persuade the dock workers to take anti-government actions.	This group is well organized and has positive leadership. It is part of a larger union of longshoremen, a critical labor group in this country, dependent upon seaborne communications. These longshoremen have capable representation in the government. The opinions of these representatives are highly significant and are sought after by national leadership. (References:	30% increase in anti-government demonstrations by dock workers. 25% increase in dock worker absenteeism.

Figure F-1.

APPENDIX G

EXPLANATION OF PSYOP CAMPAIGN CONTROL SHEET

The purpose of the psychological operations campaign control sheet is to provide a planning guide that will assist PSYOP planners in organizing and controlling a campaign after the psychological objective(s) has been selected. The campaign control sheet format (figure G-1) is a guide and can be modified to meet local conditions and echelons of command as appropriate.

National objective: The national objective or other applicable policy guidance. This information and the mission received from the next higher headquarters should be transcribed from the target analysis worksheet.

Psychological objective: The measurable psychological objective which has been developed and which will aid in accomplishing the mission. It is stated in terms of desired action and results.

Conditions: A synopsis of the significant entries in the conditions block of the target analysis worksheet.

Target: A summary of the significant attitudes, susceptibility factors, and effectiveness which were contained in the target analysis worksheet.

Related internal development programs: The various ongoing civic action and related programs which support the achievement of the psychological objective. Planned and ongoing programs by other agencies should be noted.

Themes: The lines of persuasion selected through target analysis to be conveyed to the target audience. Care should be taken not to confuse objectives and themes. The theme is the idea to be communicated that will contribute to the accomplishment of the objective.

Campaign: The media to be used, the frequency, and duration.

Implementation: The schedule for monitoring, recording, and controlling propaganda dissemination as the campaign progresses. It reflects changes in duration, intensity, timing, and susceptibilities, and should be completed in pencil.

Campaign impact indicators: The measurable responses that demonstrate the success of the overall campaign.

MISSION (Psychological Objective):

PSYCHOLOGICAL OBJECTIVE	CONDITIONS	TARGET Attitudes- Susceptibility- Effectiveness	RELATED INTERNAL DEVELOPMENT PROGRAMS	THEMES	CAMPAIGN Media-Intensity- Timing	IMPLEMENTATION	CAMPAIGN IMPACT INDICATORS

Figure G-1.

Psychological Operations Campaign Control Sheet

APPENDIX H

PSYOP BASIC TERMS

Attitudes are positively or negatively learned orientations toward something or someone that have a tendency to motivate an individual or group toward some behavior. Experienced soldiers, for example, have negative attitudes toward slovenliness.

A Basic PSYOP Study (BPS) is a detailed background document which describes the PSYOP-relevant vulnerabilities, characteristics, insights, and opportunities that are known about a specific country susceptible to exploitation.

Culture is a generic term for beliefs, values, and behavior that are learned while symbolically interacting with other individuals or groups. Culture is shared among individuals and groups and transmitted by means of words, symbols, and actions. It is the use of these means that attaches meaning and value to things that make the human animal unique. By learning, sharing, and transmitting certain beliefs and behaviors (i.e., industrialization, democracy) and not others (i.e., agriculture, dictatorship), one culture is distinct from another.

Cultural relativism is the social science principle that no aspect of human life can be judged meaningfully outside the context of a particular society or culture.

Communication is the process of standardizing and exchanging intelligence perceptions and meanings found in the form of value statements, ideas, sentiments, beliefs, etc., using words, symbols, or actions.

Drives (i.e., hunger, thirst, and activity) are unlearned (primary) or physiologically learned (secondary) internal tensions or stimuli which dispose the individual or group to a general behavior that will satisfy a need. Drives may stimulate an individual or group to cooperation, competition, or accommodation in order to insure survival. Hunger, for example, may stimulate the individual or group to cooperate, compete, commit aggression, hoard food, or gather food.

Ethnocentrism denotes the tendency of some people to use their way of life as a standard for judging and, usually, criticizing others. It indicates a belief by individuals that their race, culture, society, etc., are superior to others.

Folkways are types of norms. They are commonly accepted and informally sanctioned rules of behavior. Or, they may be thought of as being popular ways of thinking or acting, which are customary but not insisted upon. Formal punishments (negative sanctions) are not involved for those who deviate from expected behavior, but some form of informal punishment, such as expulsion, avoidance, or ostracism may be applied. Shaking hands as a way of greeting is an example of a folkway.

Frustration is individual or group inner conflict. It is created or increased by preventing or blocking the individual's or group's attainment of a desired goal. For example, the target individual's or group's unsuccessful attempts to visit their families may create frustration. Or, another example: The unrelenting presence of a combat force surrounding them may also create frustration.

Goals are the objectives that guide purposeful behavior to satisfy needs. For example, an individual or group may excel in combat as a goal to satisfy a perceived need for recognition and prestige, or to satisfy their standards of pride.

Group is two or more people recognized by others as a collectivity interacting to achieve common goals.

In-group or we-group is two or more people who have a mutual feeling of belonging together as a group. Each person identifies with the collectivity and is bound by mutual attitudes of cooperation, devotion, comradeship, loyalty, respect, sympathy, group pride, and a belief in their superiority over those outside the group. The attitudes of an in-group tend to motivate the individual or group to be hostile to, contemptuous of, indifferent to, and isolated from other groups. An in-group may also be a prestige group.

Interaction occurs when two or more individuals may come into contact and a change in the behavior and/or attitude of one, some, or all takes place. The psychological operator, using the technique of face-to-face communications, interacts with an individual or group. Through his persuasive message, a behavior and/or attitude change is sought.

Intercultural relations are the interactions between two or more individuals or groups differing in behaviors they have learned, shared, and transmitted by means of words, symbols, and actions.

Key communicator is an individual or group having the economic, social, or political power to persuade the individuals or groups with which he interacts to change or reinforce existing opinions, emotions, attitudes, and behaviors.

Language is the written or spoken word and symbols that denote or connote meanings to an individual or group. The denotational meaning of a word is all of the objects, events, or instances to which a word refers. The connotational meanings carry the emotional impact of language, rather than rational meaning or expression; i.e., feelings and attitudes rather than concrete physical items.

Mores are contemporary, required, and sanctioned rules (norms) of social behavior, similar to folkways, agreed upon by common consent for the welfare of society, whose violation justifies the use of sanctions. For example, in some societies mores exist that prohibit the eating of beef; in others, the eating of pork.

Motives, unlike the generalized predispositions of drives, are learned and goal directed. They are drives plus learning, allowing purposeful behavior to satisfy needs. Through learning, hunger is alleviated by a search for food. This is in contrast to a drive, a generalized disposition that may encompass a search, aggression, or hoarding.

Motivation is the process by which an individual or group initiates conscious, deliberate, and purposeful action. An individual or group may hear a loudspeaker message stating a comrade has defected and received food, clothing, shelter, and a pardon. Consciously and deliberately, an individual or group may lay down their weapons.

Needs may be described as tension-producing deficiencies within an individual or group, deficiencies which create a stimulus or tension. To reduce the tension, the individual or group initiates a need-satisfying behavior. If the need (tension) must be satisfied to sustain life, it is a primary or innate need (i.e., hunger or thirst), inborn, unlearned, and possessed by each individual or group. If the need is acquired by cultural and/or societal interaction, or related to social survival, it is a secondary or learned need.

Norm is the average or standard behavior, attitude, opinion, or perception shared by and expected of individuals and groups. Norms may be considered as rules in the game of life of each respective social group and related to its specific culture. Norms must also be seen as relative to the cultural setting in which they occur.

Opinion is a view, judgment, or appraisal formed in the mind about a particular matter or particular matters. It may also be said to be an intellectually defined judgment of what is true for the individual or group. It may be more influenced by attitudes than facts.

Out-group, other group, or they-group is comprised of all the individuals or groups that are not participants in the in-group/group under study. The group may be subjected to hostility, indifference, isolation, and contempt, behaviors that can be attributed to the in-group's attitudes. It should be noted, however, that not all individuals look at out-groups with hostility or hatred. Another common feeling is one of envy or a strong desire to become a member of the out-group. This is true when the members of the out-group have higher status and prestige, and the individual has the possibility of joining the out-group once he meets certain requirements. For example, businessmen wishing to increase their prestige desire to join increasingly higher status country or tennis clubs, or enlisted persons may desire to become officers.

Perceived needs are those tension-producing deficiencies which are sensed by vision, hearing, smell, taste, and/or touch and consciously evaluated; the aspect of perception is tinted by the individual's or group's culture and society. Tension, for example, could be suggested to the individual by his smelling the aroma of food cooking or by receiving a persuasive message...hunger.

Perception is the process of evaluating information which has been received and classified by the five physical senses (vision, hearing, smell, taste, and touch) and interpreted by criteria of the culture and society.

Politicomilitary activities encompass the complex of military activities which are conducted primarily for their direct, social, economic, political, and psychological impact. The activities, in their purest form, are the interaction of the military with the society-government. The operational concept involves such functions as community relations; civil affairs, to include civic action; psychological operations; certain aspects of informational activities; and coordination with other US Government agencies and friendly foreign governments.

Propaganda is any form of communication in support of national objectives designed to influence the opinions, emotions, attitudes, or behavior of any group in order to benefit the sponsor, either directly or indirectly.

Psychological objective is a statement of measurable response expected from the target audience as a result of PSYOP. The psychological objective must accurately define the specific behavioral response or attitude change desired which, in turn, must support the PSYOP goals.

Psychological operations include psychological warfare and encompass those political, military, economic, and ideological actions planned and conducted to create in neutral, friendly, and nonhostile foreign groups the emotions, attitudes, or behavior to support the achievement of national objectives.

Psychological warfare is the planned use of propaganda and other psychological actions to influence the opinions, emotions, attitudes, and behavior of hostile foreign groups in such a way as to support the achievement of national objectives.

Society is an enduring and cooperative social group whose members have developed organized patterns of relationships, traditions, institutions, and collective activities and interests. Societies may be considered to be relatively independent human groupings that have their own territory, contain persons of all ages and both sexes, and maintain their unique respective lifestyle (culture). The American people, for instance, have formed lasting and cooperative social groupings which demonstrate organized patterns of behavior such as religious, educational, and political systems.

Stimulus is an action agent or activity that inherently promotes or causes a response, stimulation always implying a response. For example, a persuasive message, airdropped into an industrial area, may warn of an impending air bombardment. The message may act as a stimulus, stimulating a mass evacuation of the area.

Strategic PSYOP are generally designed to further broad or long-term aims in coordination with general strategic planning, with gradual results realizable in the indefinite future. They are directed at enemy troops and civilians behind the combat zones or in enemy, friendly, or neutral countries. See "strategic psychological warfare," JCS Pub 1.

Susceptibility is the degree to which the target audience can be influenced to respond in ways that will assist in the accomplishment of the PSYOP portion of the commander's mission.

Symbols are objects or images whose values or meanings are given by those who use or recognize them; the values are not derived from physical properties. For example, the dove may be a symbol of peace.

Taboo is a prohibition whose violation is expected to produce an automatic penalty such as expulsion, confinement, or death at the hands of someone believed to have supernatural powers.

The complete message is the propaganda message (word) and action (deed) to persuade the individual or group to change or strengthen their opinions, emotions, attitudes, and behavior; the words and deeds are mutually supportive. The deed plus the word equals the message.

Value is the believed ability of someone or something to satisfy a psychological, physical, or social need of an individual or group. For example, an individual or group may defect to satisfy a human need for security, while another individual or group will remain with their fighting unit to satisfy their need for security and/or their pride in self and unit.

Vulnerability is a condition or sensitivity which creates a need within the target audience, rendering it responsive to persuasive appeals.

APPENDIX I

PSYOP TECHNIQUES

Knowledge of propaganda techniques is necessary to improve one's own propaganda and to uncover enemy PSYOP stratagems. Techniques, however, are not substitutes for the procedures in PSYOP planning, development, or dissemination.

Techniques may be categorized as:

Characteristics of the content self-evident. No additional information is required to recognize the characteristics of this type of propaganda. "Name calling" and the use of slogans are techniques of this nature.

Additional information required to be recognized. Additional information is required by the target or analyst for the use of this technique to be recognized. "Lying" is an example of this technique. The audience or analyst must have additional information in order to know whether a lie is being told.

Evident only after extended output. "Change of pace" is an example of this technique. Neither the audience nor the analyst can know that a change of pace has taken place until various amounts of propaganda have been brought into focus.

Repetition. This technique can be noted only after the same word, theme, message, or phrase has been used a number of times.

Nature of the arguments used. An argument is a reason, or a series of reasons, offered as to why the audience should behave, believe, or think in a certain manner. An argument is expressed or implied.

Inferred intent of the originator. This technique refers to the effect the propagandist wishes to achieve on the target audience. "Divisive" and "unifying" propaganda fall within this technique. It might also be classified on the basis of the effect it has on an audience.

SELF-EVIDENT TECHNIQUE

Appeal to Authority. Appeals to authority cite prominent figures to support a position, idea, argument, or course of action.

Assertion. Assertions are positive statements presented as fact. They imply that what is stated is self-evident and needs no further proof. Assertions may or may not be true.

Bandwagon and Inevitable Victory. Bandwagon-and-inevitable-victory appeals attempt to persuade the target audience to take a course of action "everyone else is taking." "Join the crowd." This technique reinforces people's natural desire to be on the winning side. This technique is used to convince the audience that a program is an expression of an irresistible mass movement and that it is in their interest to join. "Inevitable victory" invites those not already on the bandwagon to join those already on the road to certain victory. Those already, or partially, on the bandwagon are reassured that staying aboard is the best course of action.

Obtain Disapproval. This technique is used to get the audience to disapprove an action or idea by suggesting the idea is popular with groups hated, feared, or held in contempt by the target audience. Thus, if a group which supports a policy is led to believe that undesirable, subversive, or contemptible people also support it, the members of the group might decide to change their position.

Glittering Generalities. Glittering generalities are intensely emotionally appealing words so closely associated with highly valued concepts and beliefs that they carry conviction without supporting information or reason. They appeal to such emotions as love of country, home; desire for peace, freedom, glory, honor, etc. They ask for approval without examination of the reason. Though the words and phrases are vague and suggest different things to different people, their connotation is always favorable: "The concepts and programs of the propagandist are always good, desirable, virtuous."

Generalities may gain or lose effectiveness with changes in conditions. They must, therefore, be responsive to current conditions. Phrases which called up pleasant associations at one time may evoke unpleasant or unfavorable connotations at another, particularly if their frame of reference has been altered.

Vagueness. Generalities are deliberately vague so that the audience may supply its own interpretations. The intention is to move the audience by use of undefined phrases, without analyzing their validity or attempting to determine their reasonableness or application.

Rationalization. Individuals or groups may use favorable generalities to rationalize questionable acts or beliefs. Vague and pleasant phrases are often used to justify such actions or beliefs.

Simplification. Favorable generalities are used to provide simple answers to complex social, political, economic, or military problems.

Transfer. This is a technique of projecting positive or negative qualities (praise or blame) of a person, entity, object, or value (an individual, group, organization, nation, patriotism, etc.) to another in order to make the second more acceptable or to discredit it. This technique is generally used to transfer blame from one member of a conflict to another. It evokes an emotional response which stimulates the target to identify with recognized authorities.

Least of Evils. This is a technique of acknowledging that the course of action being taken is perhaps undesirable but that any alternative would result in an outcome far worse. This technique is generally used to explain the need for sacrifices or to justify the seemingly harsh actions that displease the target audience or restrict personal liberties. Projecting blame on the enemy for the unpleasant or restrictive conditions is usually coupled with this technique.

Name Calling or Substitutions of Names or Moral Labels. This technique attempts to arouse prejudices in an audience by labeling the object of the propaganda campaign as something the target audience fears, hates, loathes, or finds undesirable.

Types of name calling:

Direct name calling is used when the audience is sympathetic or neutral. It is a simple, straightforward attack on an opponent or opposing idea.

Indirect name calling is used when direct name calling would antagonize the audience. It is a label for the degree of attack between direct name calling and insinuation. Sarcasm and ridicule are employed with this technique.

Cartoons, illustrations, and photographs are used in name calling, often with deadly effect.

Dangers inherent in name calling: In its extreme form, name calling may indicate that the propagandist has lost his sense of proportion or is unable to conduct a positive campaign. Before using this technique, the propagandist must weigh the benefits against the possible harmful results. It is best to avoid use of this device. The obstacles are formidable, based primarily on the human tendency to close ranks against a stranger. For example, a group may despise, dislike, or even hate one of its leaders, even openly criticize him, but may (and probably will) resent any nongroup member who criticizes and makes disparaging remarks against that leader.

Pinpointing the Enemy: This is a form of simplification in which a complex situation is reduced to the point where the "enemy" is unequivocally identified. For example, the president of country X is forced to declare a state of emergency in order to protect the peaceful people of his country from the brutal, unprovoked aggression by the leaders of country Y.

Plain Folks or Common Man: The "plain folks" or "common man" approach attempts to convince the audience that the propagandist's positions reflect the common sense of the people. It is designed to win the confidence of the audience by communicating in the common manner and style of the audience. Propagandists use ordinary language and mannerisms (and clothes in face-to-face and audiovisual communications) in attempting to identify their point of view with that of the average person. With the plain folks device, the propagandist can win the confidence of persons who resent or distrust foreign sounding, intellectual speech, words, or mannerisms. The audience can be persuaded to identify its interests with those of the propagandist:

Presenting soldiers as plain folks. The propagandist wants to make the enemy feel he is fighting against soldiers who are "decent, everyday folks" much like himself; this helps to counter themes that paint the opponent as a "bloodthirsty" killer.

Presenting civilians as plain folks. The "plain folks" or "common man" device also can help to convince the enemy that the opposing nation is not composed of arrogant, immoral, deceitful, aggressive, warmongering people, but of people like himself, wishing to live at peace.

Humanizing leaders. This technique paints a more human portrait of US and friendly military and civilian leaders. It humanizes them so that the audience looks upon them as similar human beings or, preferably, as kind, wise, fatherly figures.

Categories of Plain Folk Devices:

Vernacular. This is the contemporary language of a specific region or people as it is commonly spoken or written and includes songs, idioms, and jokes. The current vernacular of the specific target audience must be used.

Dialect. Dialect is a variation in pronunciation, grammar, and vocabulary from the norm of a region or nation. When used by the propagandist, perfection is required. This technique is best left to those to whom the dialect is native, because native level speakers are generally the best users of dialects in propaganda appeals.

Errors. Scholastic pronunciation, enunciation, and delivery give the impression of being artificial. To give the impression of spontaneity, deliberately hesitate between phrases, stammer, or mispronounce words. When not overdone, the effect is one of deep sincerity. Errors in written material may be made only when they are commonly made by members of the reading audience. Generally, errors should be restricted to colloquialisms.

Homey words. Homey words are forms of "virtue words" used in the everyday life of the average man. These words are familiar ones, such as "home," "family," "children," "farm," "neighbors," or cultural equivalents. They evoke a favorable emotional response and help transfer the sympathies of the audience to the propagandist. Homey words are widely used to evoke nostalgia. **Care must be taken to assure that homey messages addressed to enemy troops do not also have the same effect on US/friendly forces.**

If the propaganda or the propagandist lacks naturalness, there may be an adverse backlash. The audience may resent what it considers attempts to mock it, its language, and its ways.

Social Disapproval: This is a technique by which the propagandist marshals group acceptance and suggests that attitudes or actions contrary to the one outlined will result in social rejection, disapproval, or outright ostracism. The latter, ostracism, is a control practice widely used within peer groups and traditional societies.

Virtue Words. These are words in the value system of the target audience which tend to produce a positive image when attached to a person or issue. Peace, happiness, security, wise leadership, freedom, etc., are virtue words.

Slogans: A slogan is a brief striking phrase that may include labeling and stereotyping. If ideas can be sloganized, they should be, as good slogans are self-perpetuating.

Testimonials: Testimonials are quotations, in or out of context, especially cited to support or reject a given policy, action, program, or personality. The reputation or the role (expert, respected public figure, etc.) of the individual giving the statement is exploited. The testimonial places the official sanction of a respected person or authority on a propaganda message. This is done in an effort to cause the target audience to identify itself with the authority or to accept the authority's opinions and beliefs as its own. Several types of testimonials are:

Official Sanction. The testimonial authority must have given the indorsement or be clearly on record as having approved the attributed idea, concept, action, or belief. Four factors are involved:

Accomplishment. People have confidence in an authority who has demonstrated outstanding ability and proficiency in his field. This accomplishment should be related to the subject of the testimonial.

Identification with the target. People have greater confidence in an authority with whom they have a common bond. For example, the soldier more readily trusts an officer with whom he has undergone similar arduous experiences than a civilian authority on military subjects.

Position of authority. The official position of authority may instill confidence in the testimony; i.e., head of state, division commander, etc.

Inanimate objects. Inanimate objects may be used in the testimonial device. In such cases, the propagandist seeks to transfer physical attributes of an inanimate object to the message. The Rock of Gibraltar, for example, is a type of inanimate object associated with steadfast strength.

Personal Sources of Testimonial Authority.

Enemy leaders. The enemy target audience will generally place great value on its high level military leaders as a source of information.

Fellow soldiers. Because of their common experiences, soldiers form a bond of comradeship. As a result, those in the armed forces are inclined to pay close attention to what other soldiers have to say.

Opposing leaders. Testimonials of leaders of the opposing nation are of particular value in messages that outline war aims and objectives for administering the enemy nation after it capitulates.

Famous scholars, writers, and other personalities. Frequently, statements of civilians known to the target as authoritative or famous scholars, writers, scientists, commentators, etc., can be effectively used in propaganda messages.

Nonpersonal Sources of Testimonial Authority.

Institutions, ideologies, national flags, religious, and other nonpersonal sources are often used. The creeds, beliefs, principles, or dogmas of respected authorities or other public figures may make effective propaganda testimonials.

Factors To Be Considered.

Plausibility. The testimonial must be plausible to the target audience. The esteem in which an authority is held by the target audience **will not always** transfer an implausible testimonial into effective propaganda.

False testimonials. Never use false testimonials. Highly selective testimonials? Yes. Lies (fabrications)? Never. Fabricated (false) testimonials are extremely vulnerable because their lack of authenticity makes them easy to challenge and discredit.

PROPAGANDA TECHNIQUES WHICH ARE BASED ON CHARACTERISTICS OF THE CONTENT BUT WHICH REQUIRE ADDITIONAL INFORMATION ON THE PART OF AN ANALYST TO BE RECOGNIZED

Incredible truths. There are times when the unbelievable (incredible) truth not only can but should be used. Among these occasions are:

When the psychological operator is certain that a vitally important event will take place.

A catastrophic event, or one of significant tactical or strategic importance, unfavorable to the enemy has occurred and the news has been hidden from the enemy public or troops.

The enemy government has denied or glossed over an event detrimental to its cause.

A double-cutting edge. This technique has a double-cutting edge: It increases the credibility of the US/friendly psychological operator while decreasing the credibility of the enemy to the enemy's target audience. Advanced security clearance must be obtained before using this technique so that operations or projects will not be jeopardized or compromised. Actually, propagandists using this technique will normally require access to special compartmented information and facilities to avoid compromise of other sensitive operations or projects of agencies of the US Government.

Though such news will be incredible to the enemy public, it should be given full play by the psychological operator. This event and its significance will eventually become known to the enemy public in spite of government efforts to hide it. The public will recall (the psychological operator will "help" the recall process) that the incredible news was received from US/ allied sources. They will also recall the deception of their government. The prime requirement in using this technique is that the disseminated incredible truth must be or be certain to become a reality.

Insinuation. Insinuation is used to create or stir up the suspicions of the target audience against ideas, groups, or individuals in order to divide an enemy. The propagandist **hints, suggests, and implies**, allowing the audience to draw its own conclusions. Latent suspicions and cleavages within the enemy camp are exploited in an attempt to structure them into active expressions of disunity which weaken the enemy's war effort.

Exploitable vulnerabilities. Potential cleavages which may be exploited include the following:

- Political differences between the enemy nation and its allies or satellites.

- Ethnic and regional differences.

- Religious, political, economic, or social differences.

- History of civilian animosity or unfair treatment toward enemy soldiers.

- Comforts available to rear area soldiers and not available to combat soldiers.

- People versus the bureaucracy or hierarchy.

- Political differences between the ruling elite, between coalitions members, or between rulers and those out of power.

- Differences showing a few benefiting at the expense of the general populace.

- Unequal or inequitable tax burdens, or the high level of taxes. The audience should be informed of hidden taxes.

- The scarcity of consumer goods for the general public and their availability to the various elites and the dishonest.

- Costs of present government policies in terms of lost opportunities to accomplish constructive socially desirable goals.

- The powerlessness of the individual. (This may be used to split the audience from the policies of its government by disassociating its members from those policies.) This technique could be used in preparing a campaign to gain opposition to those government policies.

Insinuation devices. A number of devices are available to exploit these and similar vulnerabilities:

- Leading questions:** The propagandist may ask questions which suggest only one possible answer. Thus, the question, "What is there to do now that your unit is surrounded and you are completely cut off?" insinuates that surrender or desertion is the only reasonable alternative to annihilation.

- Humor:** Humor can be an effective form of insinuation. Jokes and cartoons about the enemy find a ready audience among those persons in the target country or military camp who normally reject straightforward accusations or assertions. Jokes about totalitarian leaders and their subordinates often spread with ease and rapidity. However, the psychological operator must realize that appreciation of humor differs among target groups and so keep humor within the appropriate cultural context.

- Pure motives.** This technique makes it clear that the side represented by the propagandist is acting in the best interests of the target audience, insinuating that the enemy is acting to the contrary. For example, the propagandist can use the theme that a satellite force fighting on the side of the enemy is insuring the continued subjugation of its country by helping the common enemy.

Guilt by association: Guilt by association links a person, group, or idea to other persons, groups, or ideas repugnant to the target audience. The insinuation is that the connection is not mutual, accidental, or superficial.

Rumor: Malicious rumors are also a potentially effective form of insinuation.

Pictorial and photographic propaganda: A photograph, picture, or cartoon can often insinuate a derogatory charge more effectively than words. The combination of words and photograph, picture, or cartoon can be far more effective. In this content, selected and composite photographs can be extremely effective.

Vocal: Radio propagandists can artfully suggest a derogatory notion, not only with the words they use, but also by the way in which they deliver them. Significant pauses, tonal inflections, sarcastic pronunciation, ridiculing enunciation, can be more subtle than written insinuation.

Card stacking or selective omission: This is the process of choosing from a variety of facts only those which support the propagandist's purpose. In using this technique, facts are selected and presented which most effectively strengthen and authenticate the point of view of the propagandist. It includes the collection of all available material pertaining to a subject and the selection of that material which most effectively supports the propaganda line. Card stacking, case making, and censorship are all forms of selection. Success or failure depends on how successful the propagandist is in selecting facts or "cards" and presenting or "stacking" them.

Increase prestige: In time of armed conflict, leading personalities, economic and social systems, and other institutions making up a nation are constantly subjected to propaganda attacks. Card stacking is used to counter these attacks by publicizing and reiterating the best qualities of the institutions, concepts, or persons being attacked. Like most propaganda techniques, card stacking is used to supplement other methods.

The technique may also be used to describe a subject as virtuous or evil and to give simple answers to a complicated subject.

An intelligent propagandist makes his case by imaginative selection of facts. The work of the card stacker in using selected facts is divided into two main phases:

First, the propagandist selects only favorable facts and presents them to the target in such a manner as to obtain a desired reaction.

Second, the propagandist uses these facts as a basis for conclusions, trying to lead the audience into accepting the conclusions by accepting the facts presented.

Presenting the other side: Some persons in a target audience believe that neither belligerent is entirely virtuous. To them propaganda solely in terms of right and wrong may not be credible. Agreement with minor aspects of the enemy's point of view may overcome this cynicism. Another use of presenting the other side is to reduce the impact of propaganda that opposing propagandists are likely to be card stacking (selective omission).

Lying and distortion: Lying is stating as truth that which is contrary to fact. For example, assertions may be lies. **This technique will not be used by US personnel.** It is presented for use of the analyst of enemy propaganda.

Simplification: This is a technique in which the many facts of a situation are reduced so the right or wrong, good or evil, of an act or decision is obvious to all. This technique (simplification) provides simple solutions for complex problems. By suggesting apparently

simple solutions for complex problems, this technique offers simplified interpretations of events, ideas, concepts, or personalities. Statements are positive and firm; qualifying words are never used.

Simplification may be used to sway uneducated and educated audiences. This is true because many persons are well educated or highly skilled, trained specialists in a specific field, but the limitations of time and energy often force them to turn to and accept simplifications to understand, relate, and react to other areas of interest.

Simplification has the following characteristics:

It thinks for others: Some people accept information which they cannot verify personally as long as the source is acceptable to them or the authority is considered expert. Others absorb whatever they read, see, or hear with little or no discrimination. Some people are too lazy or unconcerned to think problems through. Others are uneducated and willingly accept convenient simplifications.

It is concise: Simplification gives the impression of going to the heart of the matter in a few words. The average member of the target audience will not even consider that there may be another answer to the problem.

It builds ego: Some people are reluctant to believe that any field of endeavor, except their own, is difficult to understand. For example, a layman is pleased to hear that "law is just common sense dressed up in fancy language," or "modern art is really a hodgepodge of aimless experiment or nonsense." Such statements reinforce the ego of the lay audience. It is what they would like to believe, because they are afraid that law and modern art may actually be beyond their understanding. Simple explanations are given for complex subjects and problems.

Stereotyping is a form of simplification used to fit persons, groups, nations, or events into readymade categories that tend to produce a desired image of good or bad. Stereotyping puts the subject (people, nations, etc.) or event into a simplistic pattern without any distinguishing individual characteristics.

CHARACTERISTICS OF CONTENT WHICH MAY BECOME EVIDENT WHEN NUMEROUS PIECES OF OUTPUT ARE EXAMINED

Change of Pace: Change of pace is a technique of switching from belligerent to peaceful output, from "hot" to "cold," from persuasion to threat, from gloomy prophecy to optimism, from emotion to fact.

Stalling: Stalling is a technique of deliberately withholding information until its timeliness is past, thereby reducing the possibility of undesired impact.

Shift of Scene: With this technique, the propagandist replaces one "field of battle" with another. It is an attempt to take the spotlight off an unfavorable situation or condition by shifting it to another, preferably of the opponent, so as to force the enemy to go on the defense.

REPETITION

An idea or position is repeated in an attempt to elicit an almost automatic response from the audience or to reinforce an audience's opinion or attitude. This technique is extremely valid and useful because the human being is basically a creature of habit and develops skills and values by repetition (like walking, talking, code of ethics, etc.). An idea or position may be repeated many times in one message or in many messages. The intent is the same in both instances, namely, to elicit an immediate response or to reinforce an opinion or attitude.

PROPAGANDA TECHNIQUES BASED ON THE NATURE OF THE ARGUMENTS USED

The two major types of arguments used in propaganda are rational and nonrational. When this category is used, it must be understood that the truth or falsity of the content has nothing to do with the nature of the argument. Thus, an elaborate structure of reasons proposed to a target audience might consist entirely of lies but still qualify as a rational appeal.

The outstanding example of a rational argument is one using the least-of-evils technique. Selection, case making, and card stacking also fall within the category of rational arguments, as might appeals to authority and, possibly, testimonials.

Nonrational arguments sometimes contain numerous virtue words or engage in considerable name calling. But the mere presence of these characteristics is insufficient reason to label an argument nonrational.

PROPAGANDA CLASSIFIED ON THE BASIS OF THE INFERRED INTENTS OF THE ORIGINATOR

Anticipatory or Preparatory: This type of propaganda is disseminated in order to bring the expectancies of the target audience in line with the realities of the situation. This technique which prepares the audience for the "worst" is used to soften the blow of an unfavorable situation or result.

Divisive Propaganda: Divisive propaganda intentionally raises issues to stir up dissent and factions within the target audience.

Hot Potato: Hot potato is a technique in which the propagandist presents a potentially embarrassing event, situation, or issue in order to force the enemy to respond, knowing that the response will put the opponent in a bad light.

Coercive Propaganda: This type of propaganda uses forceful or threatening language in order to intimidate the target audience into supporting a position. It is of limited value and duration.

Fear themes and messages: Fear themes and messages are among the most effective means of influencing target audiences. Fear which binds group members against the outside, such as fear that the enemy (the outsider) will block, erode, or destroy the basic values of the audience, has long been used by individuals and groups having parochial interests. In the realm of politics this is illustrated when factions within a political entity are bitterly split over an important issue and someone from outside the entity enters the conflict with his solution to the divisive problem. The differing parties will immediately unite (close ranks) against the outsider.

Using fear messages: When using fear messages, give specific, simple instructions in offering a solution that minimizes the possibility of danger. The message must state or infer that the action called for can be performed if the target follows precisely the simple and precise instructions given in the message. In giving instructions, the psychological operator wants to affect behavior, not test intelligence.

Effectiveness of fear messages: Fear messages are most effective when:

They arouse fear for the safety and welfare of the individual and close family members.

The source of the message is prestigious and credible to the target audience.

The audience is not familiar with the details of the threat posed. Ignorance of the details can be used to pose a threat and build fear.

Members of the audience are self-centered.

The target can take immediate action to execute simple, specific instructions.

Fear of change. People fear change, particularly sudden, imposed change over which they have no control. They fear it will take from them status, wealth, family, friends, comfort, safety, life, or limb. That's why the man in the foxhole hesitates to leave it. He knows and is accustomed to the safety it affords. He is afraid that moving out of his foxhole will expose him to new and greater danger. That is why the psychological campaign must give him a safe, honorable way out of his predicament or situation.

Terrorism: The United States is absolutely opposed to the use of terror or terror tactics. But the psychological operator can give a boomerang effect to enemy terror, making it reverberate against the practitioner, making him repugnant to his own people, and all others who see the results of his heinous savagery. This can be done by disseminating fully captioned photographs in the populated areas of the terrorist's homeland. Such leaflets will separate civilians from their armed forces; it will give them second thoughts about the decency and honorableness of their cause, make them wonder about the righteousness of their ideology, and make the terrorists repugnant to them. Followup leaflets can "fire the flames" of repugnancy, indignation, and doubt, as most civilizations find terror repugnant.

In third countries: Fully captioned photographs depicting terroristic acts may be widely distributed in third countries (including the nation sponsoring the enemy) where they will instill a deep revulsion in the general populace. Distribution in neutral countries is particularly desirable in order to swing the weight of unbiased humanitarian opinion against the enemy.

The enemy may try to rationalize and excuse its conduct (terroristic), but in so doing, it will compound the adverse effect of its actions, because it can never deny the validity of true photographic representations of its acts. Thus, world opinion will sway to the side of the victimized people.

Friendly territory: Under no circumstances should such leaflets be distributed in friendly territory. To distribute them in the friendly area in which the terrorists' acts took place would only create feelings of insecurity. This would defeat the purpose of the psychological operator, which is to build confidence in the government or agency he represents.

APPENDIX J

GRAPHICS, MUSIC, AND SOUND

EFFECTS REGISTER GUIDES

Lists and files of art, music, and sound effects native to the anticipated area or country of operations should be prepared by PSYOP units. The material should be continuously reevaluated and upgraded.

The lists in this appendix are guides to material to support propaganda production or in-country PSYOP campaigns.

GRAPHICS REGISTER GUIDE

Scenery and Scenes:

- Scenery

- Street scenes, cities, towns, villages, hamlets

- Idyllic scenes

People:

- Key personalities

- Members of target audience ethnic groups

- Crowds

- Children in ordinary and extraordinary, charming, amusing, sad, or tragic poses or activities

- Target audience ethnic groups engaged in their various occupations

- Military groups with accurate depiction of uniforms, arms, and equipment

- Families at home, work, play

- Depictions of all possible emotions by individuals

- Clothing of all groups and ages, both sexes (including common denominator infantry clothing)

The Home:

- Interiors, exteriors, all types of domiciles, private and public buildings, installations, and factories

- Furniture and furnishings

- Food, food preparation, eating habits, sources of food

Noneconomic Events and Activities:

- Activities involving US, friendly and enemy military personnel, and target civilian population groups
- Social activities of all groups and ages
- Religious activities
- Amusements
- Sports
- Unusual events and incidents

Economic Activities:

- Industrial
- Commercial
- Financial
- Agricultural
- Waterborne
- Other normal occupations
- Unusual occupations of all groups
- Means of transportation, from human bearers to aircraft

Equipment-Occupational and Household:

- Tools, farm implements
- Weapons
- Utensils, cutlery

Art Forms:

- Music
- Dance
- Painting, drawing, sculpture
- Representations of femininity
- Representations of masculinity
- Pornography--of areas in which acceptable

Military:

- Records (photographic, if possible) of all rehabilitation, MAP, AID, and other similar support, US and foreign
- Records (photographic, if possible) of typical pre-MAP or AID conditions, especially of well-known buildings and installations
- Records (photographs, if possible) of war damages

Records (photographs, if possible) of friendly PSYOP and audience reactions

Long-range photography (close-up, if possible) of enemy frontline positions and fortifications

Photographs of the activities, comforts, and conditions of prisoners of war and civilian internees. Must not be in violation of Rules of Land Warfare and pertinent conventions.

MUSIC REGISTER GUIDE

A music file should be established. The following outline can be used as a guide for such a file:

Folk tunes: dances, ballads

Classics: operas, traditional music

Popular music: currently popular, perennially popular, jazz

Patriotic music: national anthems, military, special holiday, ceremonial, and historical music

Religious music

Denied music: Each music composition, song, or ditty which has been denied to target audiences should be collected, stored, and prepared for use as occasions warrant

Songs of vendors: Record and collect these as feasible

SOUND EFFECTS REGISTER GUIDE

Musical openings, closing bridges, and other sound effects are of vital importance to the dramatic emphasis which may be integrated into sound programs (radio, loudspeaker, television). Ideally, they should be produced by local musicians from areas of operational interest during nonconflict periods. Suggested types of sound effects which should be stored are-

Musical Effects:

Majestic fanfares to usher in processions of dignitaries

Music connotating massive bustling activity of major proportions and importance

Musical announcements of a gathering of martial forces

Fanfares for important announcements

Heavy dramatic openings, serious (some in minor key)

Light dramatic openings, some comic and gay

Medium dramatic openings, not comic nor heavy

Dramatic martial openings, especially for documentaries

Musical connotations of massive destruction, as of a destroyed city, scorched earth, a deserted village, or a wasteland

Musical suggestions of desperation, strong emotions, or agitation

Comical musical representations

Connotations of a mysterious atmosphere with overtones of menace

Meditations

Suggestions of a whimsical tale to follow; light, frothy

Musical descriptions of a street scene, business activities, many people, shopping, bargaining, traffic tieups

Swirling fogs, musically described

Treachery, musically invoked

Musical descriptions of the emotional reactions to a moral blow

Musical reaction to the worst possible news

Musical connotations of the awakening of anger followed by that which evokes mysterious menace, purposeful revenge

Dangerous action

Tone pictures of early morning, of songbirds, or the morning dew--of an awakening, a beginning

Peasant dances, gatherings

Musical equivalent of a comic or amusing interlude, clowns dancing

Music for nature at work, activities of nature, birds, animals

Man at work, building, creating

Warm feeling of an emotional uplift

Musical description of hope awakening, help coming

Music for the approach of the unknown--its steady approach, closer and closer

A poignant stab

An emotional shock, changing to a mood of mystery

Sharp stabs--strings

Stab and holds, repeated to build up tension (varying lengths)

Light dramatic curtains

Medium dramatic curtains

Heavy dramatic curtains

Documentary curtains

Fear music, reactions to approaching disasters

Martial music, national pride musically expressed

Sadness, music connotating the loss of something dear

Musical contemplation, connotating relaxed moods

Music expressing excitement, hurry, confusion, bustle

Other Sound Effects:

Sounds of military action

Street noises

Airport sounds

Animal sounds

Sounds of the market place

Farm sounds

Train and boat whistles

Sounds of various types of vehicles

Sounds of school, bells, children at play, in class

Sounds of church, mosque, temple, etc; praying, bells, gongs, drums, songs, dances, etc.

Sounds of local people at work, play, at home

Transportation sounds, harbor sounds, truck, rail, and other transport sounds

Additional Sound Effects: Additional sound effects are frequently necessary for the production of radio and television programs. Some are also pertinent to loudspeaker broadcasts.

31 AUGUST 1979

By Order of the Secretary of the Army:

E. C. MEYER

*General, United States Army
Chief of Staff*

Official:

J. C. PENNINGTON

*Major General, United States Army
The Adjutant General*

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NONRESIDENT TRAINING COURSE

October 1993



Photography (Basic)

NAVEDTRA 14209

NOTICE

Pages 1-1, 1-3, 3-6, 12-2, and 12-3 must be printed on a **COLOR** printer.

DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited.

Although the words “he,” “him,” and “his” are used sparingly in this course to enhance communication, they are not intended to be gender driven or to affront or discriminate against anyone.

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Errata #1

25 MAY 99

Specific Instruction and Errata for
Nonresident Training Course

PHOTOGRAPHY (BASIC)

1. No attempt has been made to issue corrections for errors in typing, punctuation, etc. that do not affect your ability to answer the question or questions.
2. To receive credit for deleted questions, show this errata to your local course administrator (ESO/scorer). The local course administrator is directed to correct the course and the answer key by indicating the questions deleted.
3. Change the following items in the NRTC:
 - a. Question 1-56: change Alt 3 from "545.45 feet" to "45.46 feet"
 - b. Question 2-75: change Alt 2 from "120°F" to "122°F"
 - c. Question 3-52: change the word "camera" in the question's stem to "light meter"
 - d. Page 36, Figure 5A: change Alt E from "How" to "Who"
 - e. Question 6-15: change the first word in line 2 of the question's stem from "control" to "limit"
 - f. Question 7-10: change the date in line 5 of the question's stem from "1885" to "1985"
 - g. Question 9-1: change Alt 3 from "No. 0" to "No. 3"
 - h. Question 9-70: change Alt 3 from "CC05Y + CC15M only" to "CC05Y + CC10M only"
 - i. Question 10-49: change Alt 3 from "Censorship and physical" to "Censorship and physical security"
 - j. Question 10-49: change Alt 4 from "Physical and cryptographic" to "Physical security and cryptographic."
4. Delete the following questions and leave the corresponding spaces blank on the answer sheets:

Questions: 3-21, 3-27, 3-28, 6-54, 10-45

PREFACE

By enrolling in this self-study course, you have demonstrated a desire to improve yourself and the Navy. Remember, however, this self-study course is only one part of the total Navy training program. Practical experience, schools, selected reading, and your desire to succeed are also necessary to successfully round out a fully meaningful training program.

COURSE OVERVIEW: In completing this nonresident training course, you will demonstrate a knowledge of the subject matter by correctly answering questions on the following topics: Theory of Light and Optical Principles; Light Sensitive Cameras and Controls; Basic Photographic Techniques; Photographic Assignments; Portraiture; Copying; Chemical Mixing; Image Processing and Control; Black-and-White Printing; Color Printing; Motion Media; and Job Control and Photographic Finishing.

THE COURSE: This self-study course is organized into subject matter areas, each containing learning objectives to help you determine what you should learn along with text and illustrations to help you understand the information. The subject matter reflects day-to-day requirements and experiences of personnel in the rating or skill area. It also reflects guidance provided by Enlisted Community Managers (ECMs) and other senior personnel, technical references, instructions, etc., and either the occupational or naval standards, which are listed in the *Manual of Navy Enlisted Manpower Personnel Classifications and Occupational Standards*, NAVPERS 18068.

THE QUESTIONS: The questions that appear in this course are designed to help you understand the material in the text.

VALUE: In completing this course, you will improve your military and professional knowledge. Importantly, it can also help you study for the Navy-wide advancement in rate examination. If you are studying and discover a reference in the text to another publication for further information, look it up.

*1993 Edition Prepared by
PHC(AW) Dale Freelan*

Published by
NAVAL EDUCATION AND TRAINING
PROFESSIONAL DEVELOPMENT
AND TECHNOLOGY CENTER

NAVSUP Logistics Tracking Number
0504-LP-026-8540

Sailor's Creed

"I am a United States Sailor.

I will support and defend the Constitution of the United States of America and I will obey the orders of those appointed over me.

I represent the fighting spirit of the Navy and those who have gone before me to defend freedom and democracy around the world.

I proudly serve my country's Navy combat team with honor, courage and commitment.

I am committed to excellence and the fair treatment of all."

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2. Light-Sensitive Materials	2-1
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SUMMARY OF PHOTOGRAPHER'S MATE TRAINING MANUALS

PHOTOGRAPHY (BASIC)

Photography (Basic), NAVEDTRA 12700 consists of the following subjects: the principles associated with light, optics, cameras, light-sensitive materials, and equipment; still and motion-media shooting techniques; chemical mixing; image processing and printing; job control; and photographic finishing.

PHOTOGRAPHY (ADVANCED)

Photography (Advanced), NAVEDTRA 12701 consists of the following subjects: aerial photography; photographic quality assurance; electronic imaging; photographic layout and design; photographic supply; and silver recovery.

CREDITS

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Ilford Photo	11-7
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X-Rite, Inc.	10-26

INSTRUCTIONS FOR TAKING THE COURSE

ASSIGNMENTS

The text pages that you are to study are listed at the beginning of each assignment. Study these pages carefully before attempting to answer the questions. Pay close attention to tables and illustrations and read the learning objectives. The learning objectives state what you should be able to do after studying the material. Answering the questions correctly helps you accomplish the objectives.

SELECTING YOUR ANSWERS

Read each question carefully, then select the BEST answer. You may refer freely to the text. The answers must be the result of your own work and decisions. You are prohibited from referring to or copying the answers of others and from giving answers to anyone else taking the course.

SUBMITTING YOUR ASSIGNMENTS

To have your assignments graded, you must be enrolled in the course with the Nonresident Training Course Administration Branch at the Naval Education and Training Professional Development and Technology Center (NETPDTC). Following enrollment, there are two ways of having your assignments graded: (1) use the Internet to submit your assignments as you complete them, or (2) send all the assignments at one time by mail to NETPDTC.

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- you may submit your answers as soon as you complete an assignment, and
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In addition to receiving grade results for each assignment, you will receive course completion confirmation once you have completed all the

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Courses must be completed within 12 months from the date of enrollment. This includes time required to resubmit failed assignments.

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If your overall course score is 3.2 or higher, you will pass the course and will not be required to resubmit assignments. Once your assignments have been graded you will receive course completion confirmation.

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COMPLETION CONFIRMATION

After successfully completing this course, you will receive a letter of completion.

ERRATA

Errata are used to correct minor errors or delete obsolete information in a course. Errata may also be used to provide instructions to the student. If a course has an errata, it will be included as the first page(s) after the front cover. Errata for all courses can be accessed and viewed/downloaded at:

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STUDENT FEEDBACK QUESTIONS

We value your suggestions, questions, and criticisms on our courses. If you would like to communicate with us regarding this course, we encourage you, if possible, to use e-mail. If you write or fax, please use a copy of the Student Comment form that follows this page.

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<u>UNIT</u>	<u>ASSIGNMENTS</u>	<u>POINTS</u>
1	1-8	12
2	9-10	3

(Refer to *Administrative Procedures for Naval Reservists on Inactive Duty*, BUPERSINST 1001.39, for more information about retirement points.)

Student Comments

Course Title: Photography (Basic)

NAVEDTRA: 14209 **Date:** _____

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Rate/Rank and Name: _____ SSN: _____ Command/Unit _____

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Your comments, suggestions, etc.:

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--

NETPDTC 1550/41 (Rev 4-00)

CHAPTER 1

THEORY OF LIGHT AND OPTICAL PRINCIPLES

Light is the photographer's medium, and a photograph is the image of a pattern of light recorded on film. The word *photography* means *writing or drawing with light*. Without light there could be no vision or photography because it is light reflected from the world around us that makes things visible to both our eyes and the eye of the camera. The nature of light has a critical effect on the pictures you make. Few photographers actually understand much about light. But they are not alone. Scientists have never been able to agree fully about the nature of light. However, certain useful things are clear and well understood about how light behaves.

Light is a form of electromagnetic radiant energy to which the eye is sensitive. It travels at tremendous speed from its source, such as the sun, a fluorescent lamp, an

electronic flash, or whatever source is used. It has an effect on the materials it falls on, skin becomes tanned, and fruit is ripened by the light of the sun. Depending on the way in which light is received or rejected, a complex pattern of light, shade, and color results.

Other types of radiant energy, such as radio waves and X rays, are similar to light but the eye cannot see them. Thus they are not light. By definition, light is electromagnetic energy visible to the human eye. All other electromagnetic energy is invisible, therefore, is not considered light. Ultraviolet and infrared radiations are two such invisible radiations that are of concern to the photographer.

Light makes up the visible spectrum, which is a small part of the entire electromagnetic spectrum (fig. 1-1).

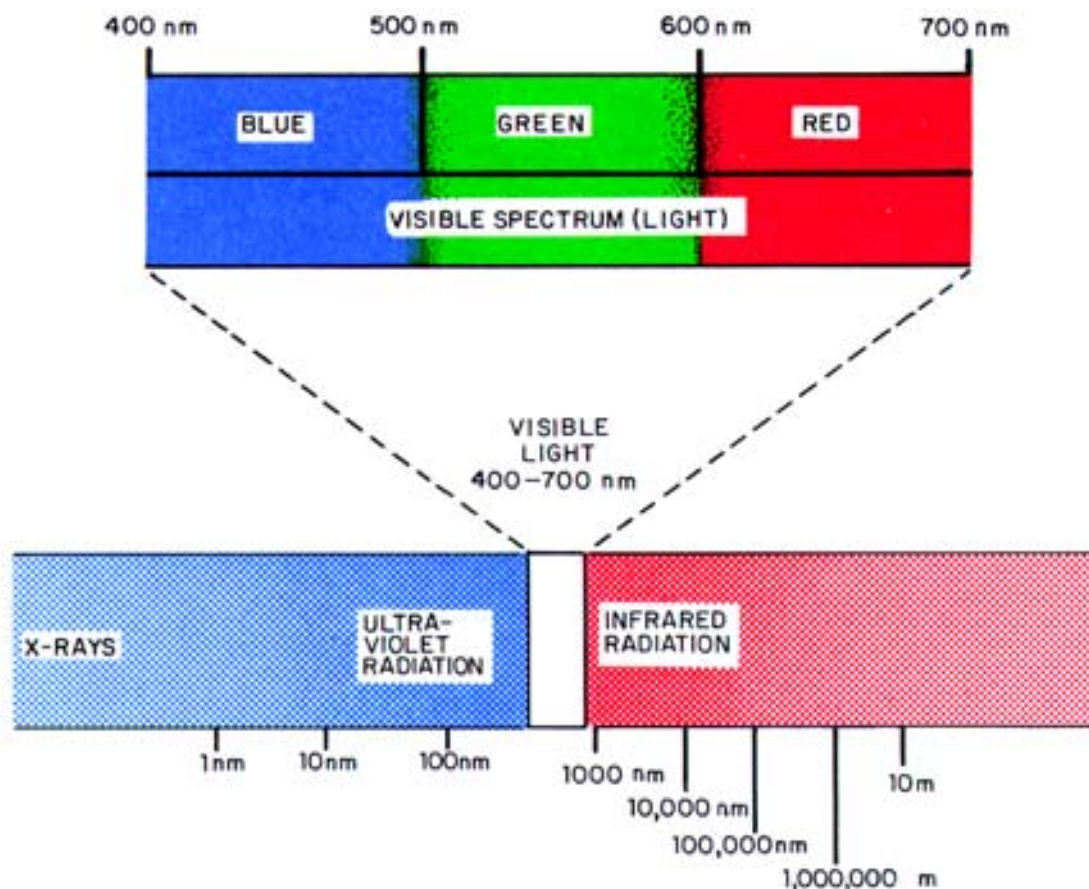


Figure 1-1.—The electromagnetic energy spectrum.

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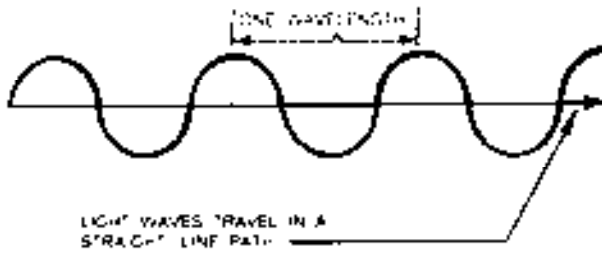


Figure 1-2.—Wavelength.

CHARACTERISTICS OF LIGHT

The subject of light as a form of radiant energy has been theorized upon, experimented with, and studied by many physicists and scientists. Until about three centuries ago, no one had developed a reasonable theory of the nature of light. Then Max Planck, a physicist, published a theory in which light was supposed to consist of a stream of high-speed particles. Planck theorized that any light source sent out an untold number of these particles. This then was the *quantum theory*. The *quantum* of light is called the *photon*. The quantum theory is used to explain X ray, radiation, and photoelectricity.

WAVELENGTH, SPEED, AND FREQUENCY

About the same time other physicists, Christiann Huygens and Thomas Young, introduced a theory called the *wave motion theory*. The wave motion theory is used to explain reflection, refraction, diffraction, and polarization. In wave motion theory, light, wavelength, speed, and frequency are important characteristics, and they are interrelated.

The wavelengths of light are so small that they are measured in nanometers (nm). A nanometer is equal to one millionth of a millimeter. Wavelengths of light range from about 400nm to 700nm in length and travel in a straight-line path.

The speed of light varies in different mediums. In air, light travels about 186,000 miles per second. In a denser medium, such as glass, light travels even more slowly. Furthermore, in a denser medium, the speed is different for each color of light. Wavelength is the distance from the crest of one wave to the crest of the next wave (fig. 1-2). Frequency is the number of waves passing a given point in 1 second. The product of the two is the speed of light.

Therefore:

Speed = Wavelength x frequency, or

$$\text{Wavelength} = \frac{\text{Speed}}{\text{Frequency}}$$

Since the speed of light in glass is slower than in air, the wavelength must also be shorter (fig. 1-3). Only the wavelength changes; the frequency remains constant. Hence we identify a particular type of radiation (color of light) by its wavelength, *bearing in mind that we are speaking of the wavelength in air*.

EMISSION OF LIGHT

To the photographer, there are two important characteristics of the way light travels. First, in a given medium, light always travels in a straight line. Second, in a given medium, it travels at a constant speed.

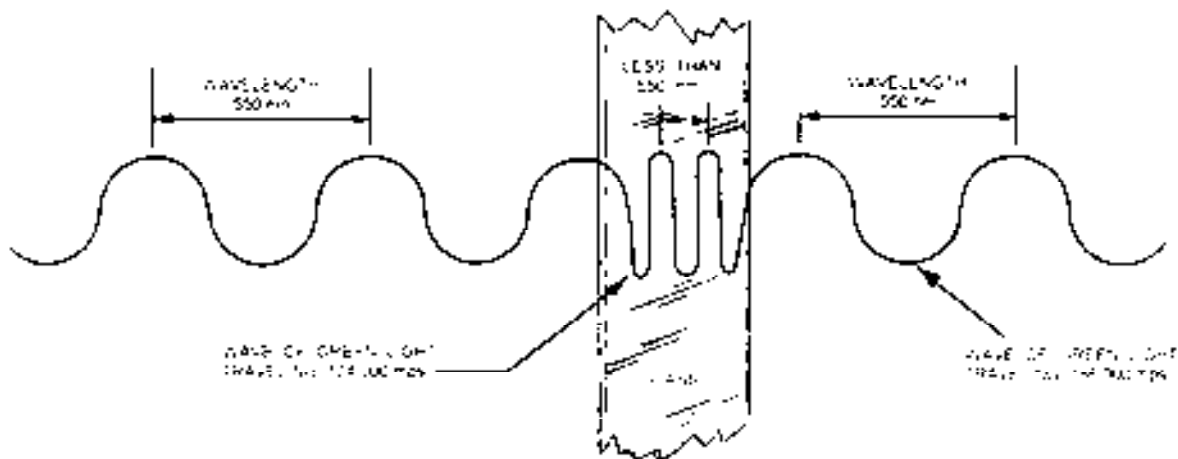


Figure 1-3.—Variation in speed and wavelength.

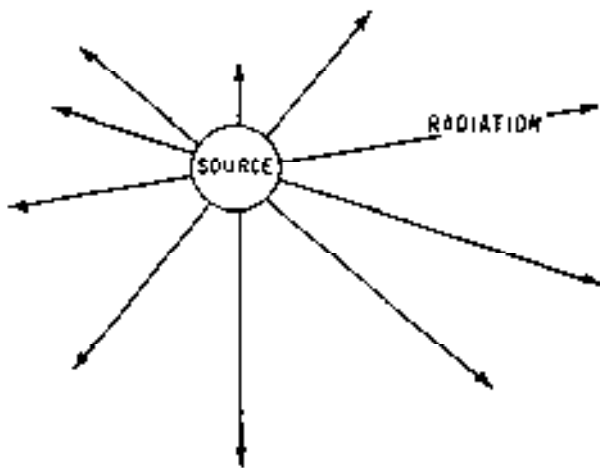


Figure 1-4.—Light emitted from a source.

Once light is produced (emitted), it is no longer dependent on its source, and only its speed is affected by the many mediums through which it can travel. Another example of the independence of light is that when light travels from air into a denser but transparent medium, such as glass, its speed is reduced. But when it leaves the glass, it returns to its original speed. This changing speed is important in *refraction*, a behavior of light that allows lenses to form images.

Unless light is reflected or focused, it travels or radiates in all directions from the source. As light travels from the source, its energy of light spreads out. The greater the distance it travels, the more it spreads out (fig. 1-4). Therefore, the amount of light reaching a given area at a given distance is less than that reaching the same area closer to the source. In other words, the intensity of illumination on a surface varies when the distance between the light source and the surface, or

subject, is changed. This becomes important when exposing film with artificial light.

COLOR OF LIGHT

Look at a bright, red apple on a dark, green tree. It is hard to believe that color is not an inherent property of these objects; in fact color is not even inherent to light. What you are seeing is a visual perception stimulated by light. The apple and tree are only visible because they reflect light from the sun, and the apple appears red and the tree appears green because they reflect certain wavelengths of light more than others. In this case, these particular wavelengths are seen by the human eye as red and green. When we see a color, we are simply seeing light of a particular wavelength.

When a beam of light has a relatively even mixture of light of all visible wavelengths, it appears as white light. When this beam of white light is passed through a prism, its different wavelengths are spread apart and form a visible spectrum. This visible spectrum is seen as a band of colors, such as violet, blue, blue-green, green, yellow, and red (fig. 1-5).

COLOR TEMPERATURE

White light is made up of nearly equal intensities of all wavelengths within the visible spectrum. By passing white light through a prism, scientists have found that light sources have many qualities. They are as follows:

- Different wavelengths are present in the sources of radiant energy.
- The frequency and color of wavelengths vary.

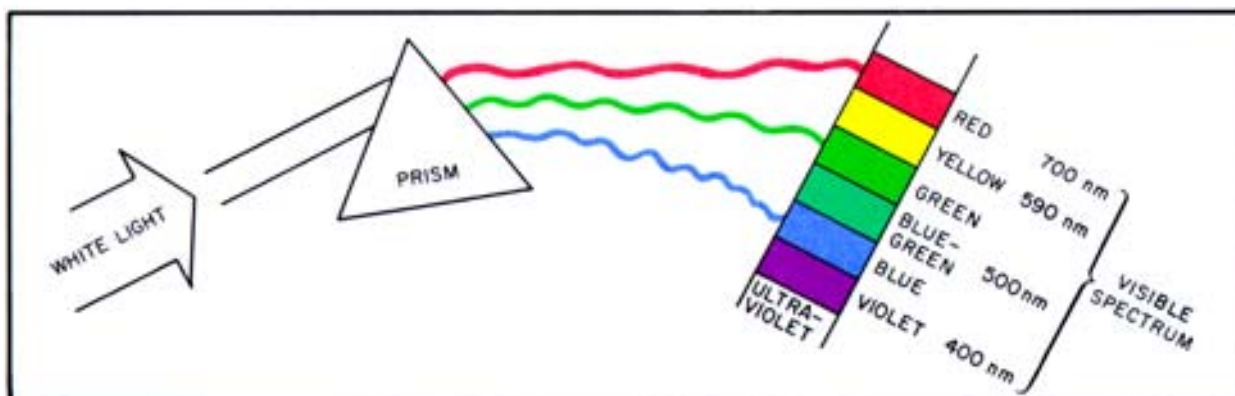


Figure 1-5.—Refraction of light by a prism.

C302.8

- With each wavelength, there is a variation in the amount of energy.

This variation of energy is called spectral energy distribution. The spectral energy of a light source is represented by color temperature. These terms are used in photography to describe and define the sources of light being used.

Color temperature describes the color quality of a light source in terms of the amounts of red light and blue light. Color temperature is based on what is called a *Planckian radiator*, or simply a *black body*. As the temperature of the metal of the *black body* is raised, it goes from a dull black through red and orange to blue and finally to white heat. The quality of the light emitted is a function of the temperature of the metal. When the object is red-hot, the *color* temperature is low since red is at the low end of the scale; and when it is blue-white, the color temperature is high. However, the *temperature* at which a light source is burned does not control *color temperature*; for example, a fluorescent tube burns at a low 125°F, yet it has a high color temperature. Color temperature then is raised or lowered relatively by the amount of visible white light radiated from the source. Be careful not to get confused. Traditionally reddish light is known as *warm* and bluish light as *cold*; in actuality, the color temperatures is the other way around.

The most convenient way to describe the color temperature of a light source is by its Kelvin temperature. From a practical point of view, this term refers to the degree of whiteness of the light. Color temperature is measured on the Kelvin scale and is stated as Kelvin temperature. On the temperature scale, 0 K is the same as -273°C. Therefore, degrees Kelvin (K) are always 273 degrees higher than the same temperature on the Celsius scale. Thus a red-hot piece of iron with an approximate temperature of 2000°C has a color temperature of 2273 K. As the Celsius temperature of an object is raised, it emits a whiter light and produces a relatively higher color (Kelvin) temperature.

COLOR RELATIONSHIPS

Many ways have been devised to classify the colors we see. Though terminology may differ, it is generally agreed that color can be defined by three qualities: *hue*, *brightness*, and *saturation*.

- ◆ **Hue**-Hue is the actual color or wavelength reflected by an object-red, yellow, green, and so forth. For example, it could be said that the color of an object

is blue. Blue identifies the hue. There are seven hues in the visible spectrum. These seven hues are as follows: blue, green, red, cyan, magenta, yellow, and white. Hue, however, is an inadequate description of a color. To be more specific, we should say that an object is dark blue or light blue. Now we have described the brightness of the color.

- **Brightness**-The brightness of a color is independent of the hue. Two colors may have the same hue but different brightness. Thus, to describe a color or brightness, we say that it is dull, bright, vivid, or brilliant.

- ◆ **Saturation**-The saturation of a color is the degree to which the color departs from neutral gray of the same brightness. You can think of it as mixing black, gray, or white paint with a colored paint, thus diluting the color. In other words, saturation is a measure of color purity.

BEHAVIOR OF LIGHT

Light waves travel in straight lines. When light waves encounter an object or new medium, they act in one or more of the following ways:

- ◆ They may be reflected.
- They may be absorbed.
- ◆ They may be transmitted.

REFLECTION

When light is reflected, it acts in a certain way. When the reflecting surface is smooth and polished, the reflection is orderly, or *specular*. Specular light is reflected at the same angle to the surface as the light incident to the surface; that is, the path of the light reflected from the surface forms an angle exactly equal to the one formed by its path in reaching the surface. Thus *the angle of reflection is equal to the angle of incidence*, which is a characteristic of specular light (fig. 1-6, view A). However, when the object surface is not smooth and polished but irregular, light is reflected irregularly or *diffused* (fig. 1-6, view B); that is, the light is reflected in more than one direction.

Practically all surfaces reflect both specular and diffused light; smooth surfaces reflect more specular light, and rough surfaces more diffused light. Since diffused light is more common than specular light, it is of greatest value in photography. Objects that are not light sources are visible and therefore photographic.

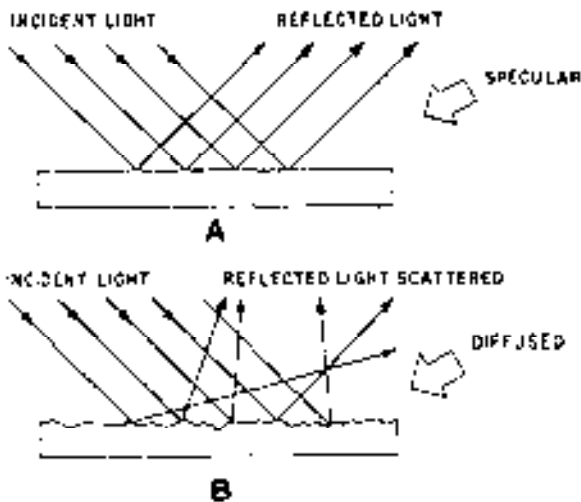


Figure 1-6.—Reflected light.

only because they reflect the light that reaches them from some luminous source.

ABSORPTION

When light strikes a medium and is neither reflected nor transmitted (passed on), it is said to be absorbed. Black cloth or areas of dark forest, for instance, absorb more light than objects such as a white sheet or a coral sand beach. When light comes in contact with the surface of an object, a certain degree of reflection, and some absorption, always takes place.

A medium that does not allow light to pass through it is *opaque*. An opaque material may also reflect light. When an object is opaque and the light is not reflected, it is absorbed by the object. When light is absorbed, its energy is converted and it no longer exists as light.

The color of an object is determined by the way it absorbs light falling upon it (incident light). A woman's dress appears red when it absorbs the blue and green rays of white light and reflects the red waves. A lawn appears green because the grass blades absorb the red and blue rays of light and reflect the green rays.

Neutral colors, such as white, black, and the various tones or values of gray, actually absorb almost equal proportions of the colors of light. Varying reflective powers account for their differences. White is highly reflective, while an object of absolute blackness, no matter how much light falls on it, can never be recorded on film except by contrast.

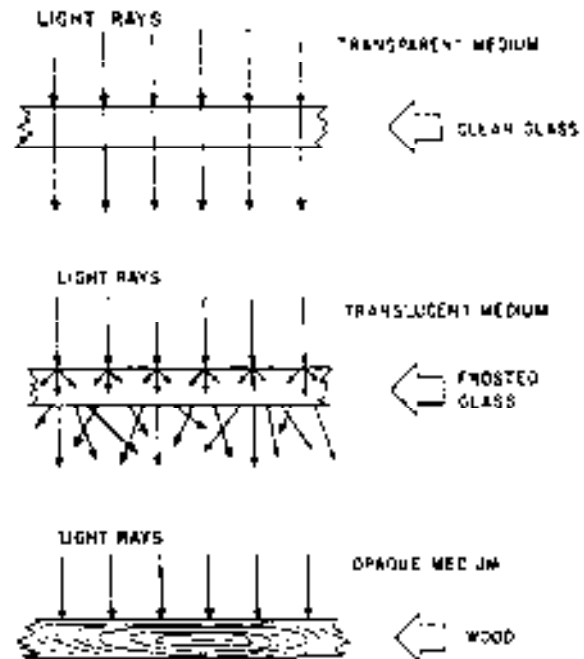


Figure 1-7.—Effects of different media.

TRANSMISSION

In addition to being reflected and absorbed, light rays may be transmitted. They may also pass through some medium they encounter. When objects can be clearly seen through the medium, the medium is *transparent*. A transparent medium transmits light rays in a regular, or uniform, pattern. When the medium transmits light but breaks up the orderliness of the pattern, sending the transmitted rays in many directions, the medium is *translucent*. In other words, a medium is said to be translucent when light is visible through it, but objects are NOT clearly distinguishable. Thin fabrics and frosted glass are examples of translucent materials that allow the passage of diffused light (fig. 1-7). One important form of transmission is termed *refraction*.

REFRACTION

The change of direction that occurs when a ray of light passes from one transparent substance into another substance of different density is called *refraction*. Refraction enables a lens to form an image. Without refraction, light waves behave as X rays and pass in straight lines through all suitable substances without any control of direction, and only shadow patterns can be made with them. Refraction occurs because light travels at different speeds in different transparent substances. The speed of light in each transparent substance is called

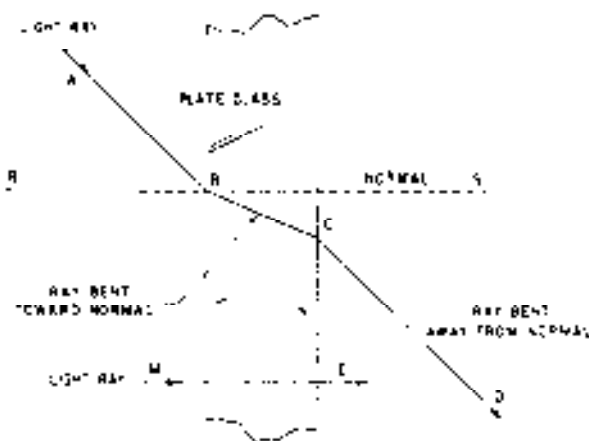


Figure 1-8.—The law of refraction.

the index of refraction for that substance; for example, light travels about 1 1/2 times as fast in air as it does in glass, so the index of refraction for glass is about 1.5.

Refraction, or change of direction, always follows a simple rule.

• “In passing from one transparent substance into another of greater density, refraction is toward the normal. In passing from one transparent substance into another of lesser density, refraction is away from the normal.” In this rule the normal is defined as a line perpendicular (90°) to the surface between the mediums.

Refraction is shown in figure 1-8. The ray of light (AB) strikes the glass at an oblique angle. Since the glass is denser than air, the ray of light is bent toward the normal (RS) and emerges from the glass at (C). Upon entering the air again, the ray is bent away from normal (RS) and travels along the path (CD).

All rays striking the glass at an angle other than perpendicular are refracted. In the case of the perpendicular ray (ME) that enters the glass normal to the surface, no refraction takes place and the ray continues through the glass and into the air in a straight line.

DISPERSION

The speed of light in a medium depends on the wavelength of the light. As light enters a more dense medium, the short waves, such as blue, are slowed more than the long waves, such as red. Thus the index of refraction of a medium varies with the wavelength, and the different colors of light are bent different amounts. This changing index of refraction or the breaking up of white light into its component colors is called

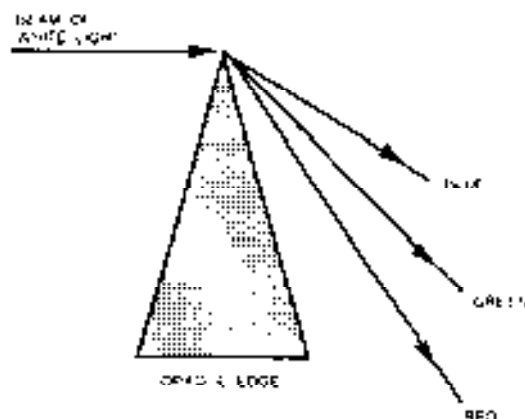


Figure 1-9.—Diffraction.

dispersion. This then ties in with the previous discussion of the colors of light where we saw the way a prism creates a spectrum from white light. The prism is able to create this spectrum because of dispersion.

DIFFRACTION

We have said that light travels in a straight line. Well, that is not always true. An exception to this rule occurs when light travels close to an opaque edge. Because of the wave nature of their travel, light rays passing near an opaque edge are bent ever so slightly (fig. 1-9). This bending is called *diffraction* and is evidenced by the formation of a shadow with a fuzzy edge when light passes an opaque object. In this case, the outside edge of the shadow is light and indistinct, but it gradually darkens into the true black of the shadow that indicates that some of the light is scattered into the shadow area.

Unlike refraction, in diffraction the long wavelengths of light are bent the most.

Diffraction is important to the photographer when the light passes the edges of a lens diaphragm. When the lens diaphragm is opened fully, the amount (actually the percentage) of diffracted light is quite small. But when the diaphragm is closed to a small opening, the percentage of diffracted light is quite large and reduces the sharpness of the image formed by the lens. In other words, a small aperture opening interferes with the image-forming light more than a large aperture does.

POLARIZATION

Energy in the form of wave motion radiates from its source and travels through a medium. For example,

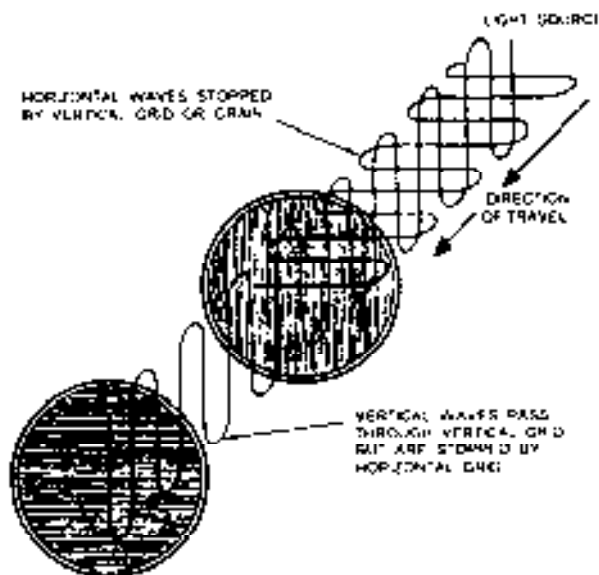


Figure 1-10.—Controlling polarized light.

when a section of line is secured at one end and the free end is held in your hand and given a shake, a wave travels down the length of the line from the end that was shaken to the secured end just like an oscillator. A light source acts as an oscillator. The wave motion in the line, however, does not represent the true wave motion of light because light waves move in all possible directions at right angles to their direction of travel. A much clearer picture of light wave motion can be seen by having a number of parallel lines with each one being shaken in a different direction—one up and down, one sideways, and the others at various angles in between.

Ordinarily, light waves vibrate in all directions at right angles to their direction of travel. However, when light waves strike a series of parallel microscopic slots,

all the light that passes through vibrates in one direction. This is *polarized light*. Filters that polarize light, termed *polarizing filters*, have a practical use in photography (fig. 1-10).

Specular reflected light, from a nonmetallic surface at any angle between 32° and 37° , is polarized in such a manner that the light rays vibrate in a direction parallel to the reflecting surface. Light reflected in this manner is said to be *plane polarized* and is seen as glare (fig. 1-11). There is no polarization whatsoever produced by reflections from metallic surfaces.

LIGHT SOURCES

In the beginning of photography, daylight, or sunlight, was the only light source suitable for exposing the slow film available at that time. Today, photographic film is not only vastly more sensitive to light, but a wide range of light sources have been developed for the needs of the photographer. These light sources include the following: tungsten lamps, tungsten-halogen lamps, fluorescent lamps, and electronic flash.

DAYLIGHT

Sunlight, of course, is the light photographers are most familiar with and for good reason. It is the light they use the most. Naturally, sunlight is the only practical light source for general outdoor photography. Artificial light sources, however, can provide useful supplementary lighting to sunlight as fill-in for shadows (to make them lighter) and take the place of sunlight entirely for photography of small areas and close-ups. Sunlight is often referred to as daylight. The term *daylight*, as used in photography, is meant to include all

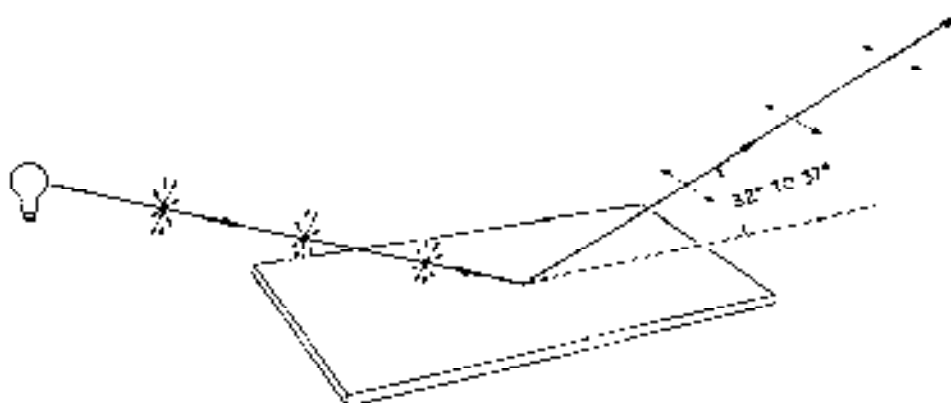


Figure 1-11.—Light, plane polarized by reflection.

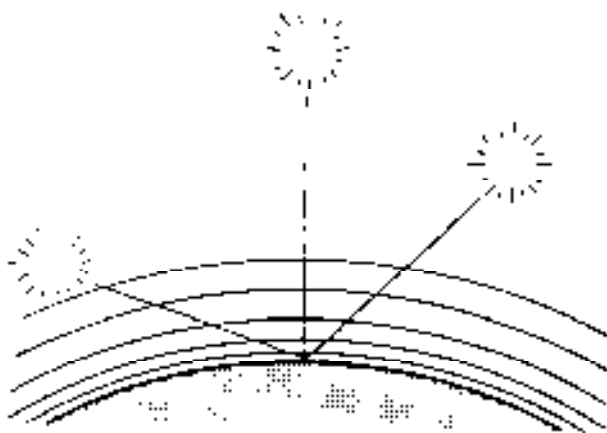


Figure 1-12.—Effects of sunlight passing through the atmosphere.

forms of light, direct or indirect, that originate from the sun.

Of importance to the photographer is the effect of the atmosphere on sunlight and the amount of atmosphere through which sunlight passes (fig. 1-12).

The shorter wavelengths of light (violet and blue) are scattered by the atmosphere much more than the longer wavelengths. The color composition of sunlight becomes increasingly deficient in blue the further the light has to travel through the atmosphere (early morning and late afternoon). As the sunlight becomes more deficient in blue, it appears more yellow. The amount of scattering also depends on the condition of the atmosphere. When the atmosphere is clean (has little moisture or fine dust in it), there is less scattering than when the atmosphere is hazy or dirty (having a good deal of moisture or fine dust and smoke). The variation in color of sunlight can be expressed as color temperature. Sunlight coming from overhead on a clear day has a color temperature of about 5400 K. Just after sunrise and just before sunset, the color temperature ranges between 2000 K and 4000 K. Not only is the color of sunlight different early in the morning and late in the afternoon, but the intensity is also less. These are important considerations when taking pictures at these times of day.

Light scattered by the atmosphere, or *skylight* as it is called, can be regarded as a second source of light. Skylight is different than sunlight because it is caused chiefly from the scattering of the shorter wavelengths. It therefore appears more blue than sunlight. Skylight on a clear day may be as high as 60000 K.

ARTIFICIAL LIGHT

The types of artificial lighting you use in photography give you complete control over the direction, quality, and strength of the light. You can move these light sources around, diffuse them, or reflect them. You can alter their intensity to suit the situation.

There are two types of artificial light sources: *spotlights* and *floodlights*. Spotlights provide a concentrated beam of light. Floodlights give diffused, softer, more even, spread out light. You can add to these two basic types of artificial light sources. By using lighting accessories, such as reflectors, barn doors, diffusers, and snoots, you can control the light to provide a variety of lighting effects.

Unless special effects are wanted, artificial light sources that are different in color temperature or quality should not be mixed (used together). When you are viewing a scene, your eyes adapt so color differences between two or several light sources are minimized. Color film, however, cannot adapt and shows the color difference in parts of the scene illuminated by different light sources.

Tungsten-Filament Lamps

Tungsten light color films are made to be used with tungsten-filament light sources and are color balanced for 3200 K or 3400 K. Tungsten lamps, operated at their rated voltage, produce light of 3200 K and 3400 K. The color temperature of tungsten lamps changes with voltage fluctuations, decreasing with lower voltage and increasing with higher voltage. For example, the color temperature of a tungsten lamp rated for operation at 115 volts increases about 10 K for each 1 volt increase. Usually, a variation of less than 100 K has no adverse effect on the rendering of scene colors. However, a shift as low as 50 K can be noticeable on subjects with important neutral areas, such as white and light shades.

When you are using tungsten lamps, the color temperature can shift, depending on the amount of power being drawn on the same circuit. When possible, you should avoid having other equipment on the same circuit. For these lamps to produce light of the correct color, they must be operated at exactly their rated voltage. When it is not possible to operate the lamps at their proper voltage appropriate filters can be used to correct the color of the light reaching the film.

Tungsten-Halogen Lamps

Tungsten-halogen lamps have a tungsten filament inside a quartz envelope. This type of lamp does not blacken the inside of the envelope and operates at an almost constant brightness and color temperature throughout its life. Tungsten-halogen lamps for photography operate at color temperatures of 3200 K and 3400 K. Filters can be used to convert them to *daylight*. For its size, a tungsten-halogen lamp generally delivers more light than a conventional 3200 K lamp. Tungsten-halogen lights are becoming more popular and are rapidly replacing regular tungsten lights for general photographic use.

Fluorescent Lamps

Pictures made on *daylight* type of color films under fluorescent lights without a filter may be acceptable; however, they usually have a greenish cast. When a *tungsten* type of color film is used with a fluorescent lamp without a filter, the pictures usually are too blue.

Fluorescent light is not generated by heat, as are other types of light. It has special characteristics different from either daylight or tungsten light. Fluorescent lights have no true color temperature, but a value of approximate color temperature has been worked out.

- Daylight fluorescent lamps: 6500 K
- Cool, white fluorescent lamps: 4500 K
- Warm, white fluorescent lamps: 3500 K

Electronic Flash Lamps

Electronic flash is an excellent light source for both outdoor and indoor photography, especially when the predominant lights are fluorescent. Electronic flash uses a discharge tube filled with xenon gas and is supplied with a powerful charge of electricity from a capacitor. The flash is *triggered* by means of an electrical current that ionizes the gas. The output, or intensity of the flash, is usually given in effective candlepower-seconds and depends on the voltage and size of the capacitor. The design of the reflector on an electronic flash has a direct relationship on the efficiency of the unit.

Electronic flash resembles daylight in color quality and is excellent for exposing daylight type of color films. The duration of the flash is short, usually 1/500 second or less. With a computerized (automatic) unit used close to the subject, the flash duration can be as

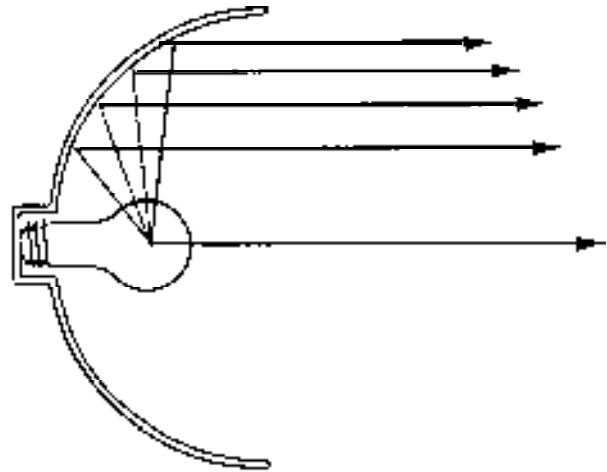


Figure 1-13.—A lamp reflector can increase the intensity of light reaching the subject.

short as 1/50,000 second. Computerized electronic flash units have a sensor that switches off the flash when the subject (depending on its distance and tone) has received enough light for proper exposure.

Reflectors

Two types of reflectors are of importance in photography. They are the *lamp reflector* and the *plane reflector*. The first type, the lamp reflector, is used with artificial light sources—tungsten, tungsten-halogen, fluorescent, and electronic flash lamps to direct the light. The second type, the plane reflector, is used to *redirect* light from any kind of light source into shaded areas to soften or lighten shadows. (While it is true that mirrors are also reflectors, *reflector* is used in photography as a more general term. Mirrors always reflect specular light; and reflectors reflect either specular or diffused light.)

LAMP REFLECTORS.—Light emitted by the filament of a lamp is dispersed in all directions. This is useful when the lamp is for general illumination, such as one suspended from the ceiling to light a room. As a photographer, however, you are usually interested in illuminating only a given area, and it is, therefore, to your advantage to concentrate the light emitted by a lamp onto the area of interest. You can do this by mounting the lamp in a concave reflector that reflects almost all the light onto the area to be photographed (fig. 1-13). Lamp reflectors generally have a satin or matte finish to diffuse the reflected light to prevent hot spots that could result if the reflector surface were highly polished.

Reflectors of electronic flash units vary considerably in their efficiency and covering power at

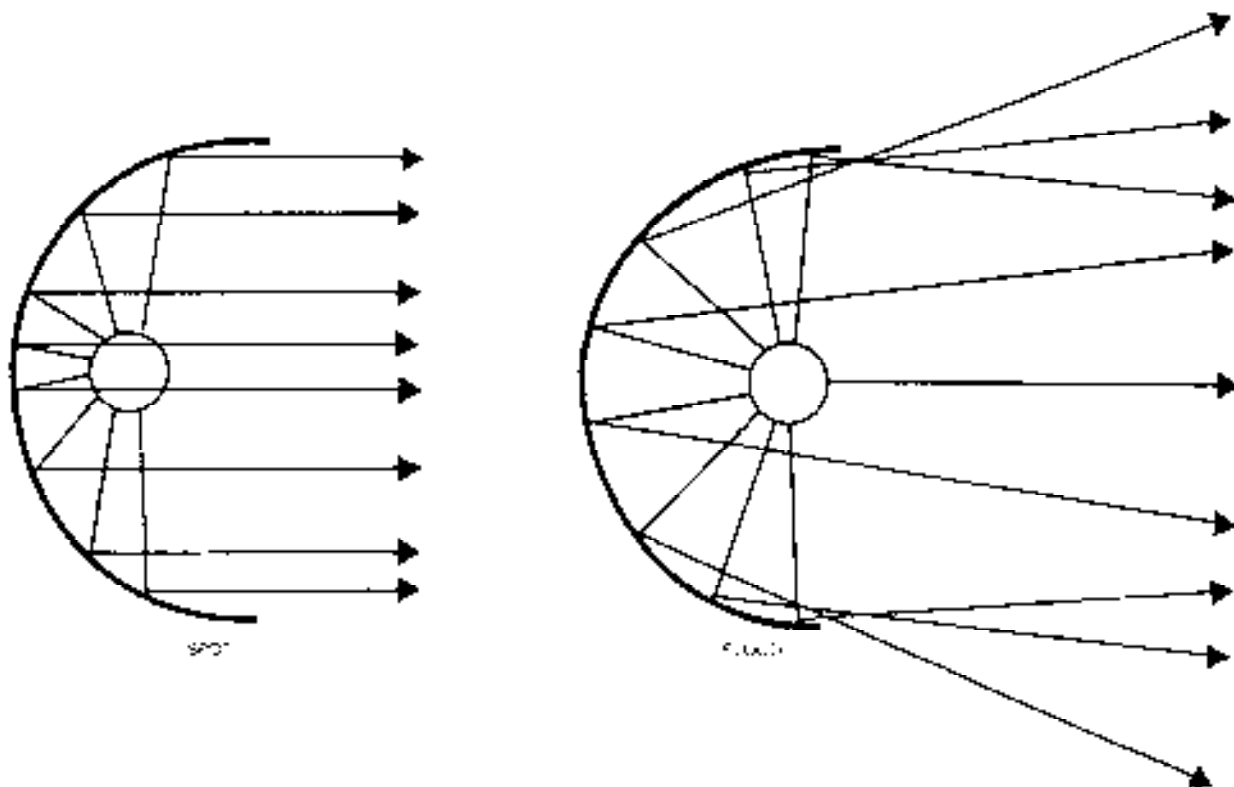


Figure 1-14.-The position of the discharge tube in relation to the reflector.

different distances from the subject. Generally, they are designed to provide maximum efficiency at distances of from 6 to 12 feet from the subject. Professional type of electronic flash units may have a dual reflector system—one position for a normal angle and the other for a wide angle (for a wide-angle lens); others may have a zoom system to provide optimum light distribution for any lens within a wide range of focal lengths. Depending on the position of the discharge tube in relation to the reflector, the unit can be used as a spotlight or floodlight (fig. 1-14).

PLANE REFLECTORS.—When you want to provide fill-in light for shadow areas, it is often desirable to substitute a plane reflector (sometimes called a reflector board) to redirect the light from a direct light source (fig. 1-15). The plane reflector is placed so it receives light from the primary light source and reflects the light into the shadows. The efficiency of such a reflector depends on its surface and tone, as well as size and distance from the subject being photographed. The subject area covered by a plane reflector depends on the size of the reflector. When the surface of the reflector is matte or textured, it reflects diffused light and some of the reflected light is dispersed over a wide angle.

OPTICAL PRINCIPLES

Cameras have optical systems, or lenses, made up of several separate pieces of glass, called *elements*. There are two reasons for having several elements. First, it allows the designer to make many different types of lenses to suit different purposes. Second, the quality of the image formed by the lens can be controlled by choosing different lens elements. The most important choices the lens designer makes are the shape and position of each lens element. These govern properties like focal length, angle of view, physical weight, and size.

Lenses are probably the least understood but the most discussed component of the photographic process. Photographers (generally amateurs) speak of a lens formula as if they knew what it was about. Even if the designer's formula were made available, it would not provide information about the lens photographic quality. A perfect lens cannot be made. A lens is a compromise of inherent errors called *aberrations*, but do not let this worry you. Lens aberrations are defects in the formation of an optical image. Today's lenses are so highly corrected for lens aberrations that, except for a few ultra wide-angle (fisheye) lenses, you would be hard pressed to find a lens that produces subjectively identifiable

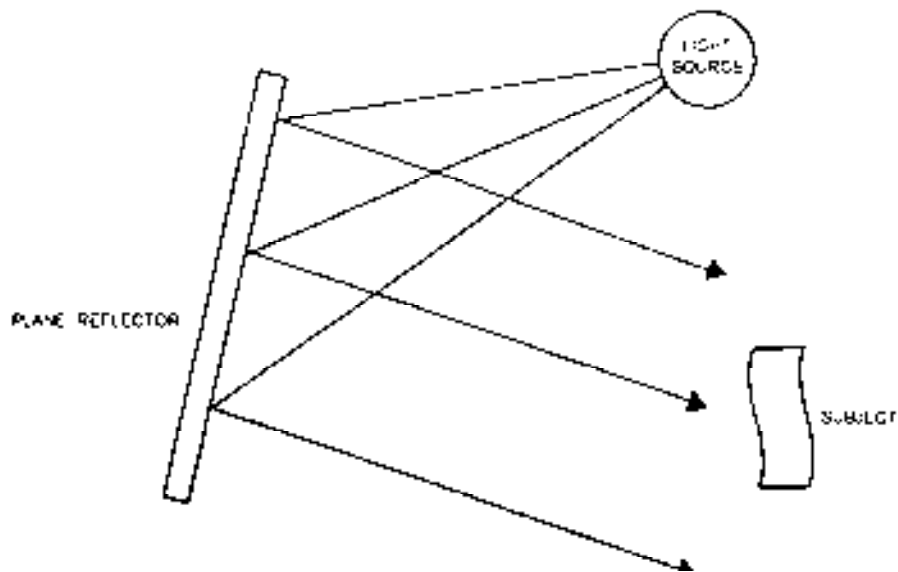


Figure 1-15.—Plane reflector and subject coverage.

aberrations. You may hear photographers talking about aberrations as if they were important. They may make an interesting subject, but knowing all the details about them does not help you to take better photographs. Important matters that will improve your skill as a photographer are knowing how to control the factors, such as exposure, composition, lighting, and lab work. Let the lens designers and manufacturers worry about the lens aberrations. However, just so you know what these lens aberrations are, a brief definition is provided for each of them in the glossary; they are as follows:

- Astigmatism
- Chromatic aberration
- Coma
- Curvilinear distortion
- Spherical aberration

Today's lenses can image more detail than present film materials can record. Therefore, avoid discussing *lens* resolution. If you want to discuss resolution, talk *film* resolution.

PRINCIPLE OF A LENS

The purpose of a camera lens is to control the light rays entering the camera. The simplest kind of lens is a pinhole in a piece of thin metal or black paper. Of course, only an extremely small part of the light reflected by a

subject passes through the pinhole and enters the camera. When the pinhole is large, it allows more light rays to enter but blurs the image. This blur is really an overlapping of several images. Images produced by large and small pinholes are the same size, but one is blurred, while the other is sharp. A photographic lens is a piece of polished and carefully shaped glass that *refracts* light rays so an image of a desired scene is formed on the rear wall of a camera. A lens transmits more light than a pinhole. It increases the brightness and improves the sharpness of an image. The basic principle of a lens—any lens—is relatively simple.

First, consider an image formed with a single pinhole. Next, consider another pinhole above the first. This pinhole forms a second image. When these two images could be made to coincide, the result would be an image twice as bright as the original. Now, consider a third pinhole on the side of the first, a fourth on the other side, and a fifth below the first. All four pinholes project separate images slightly removed from the first or center one. When these four images are made to coincide with the center one, the result is an image five times as bright as the image made by the one center pinhole. By using the principle of refraction, you can make these four images coincide with the center one. By placing a prism behind each pinhole, you are causing the light that forms each of the four images to be refracted and form a single image. In other words, the more pinholes and prisms used, the brighter or more intense the image. A lens represents a series of prisms

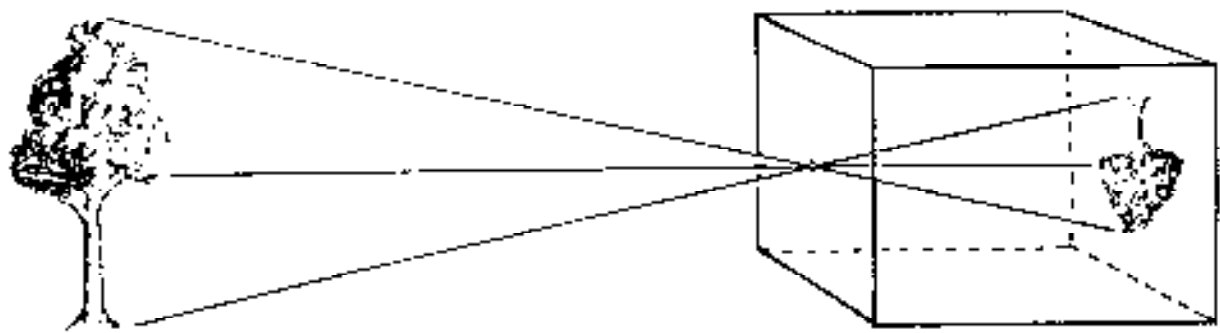
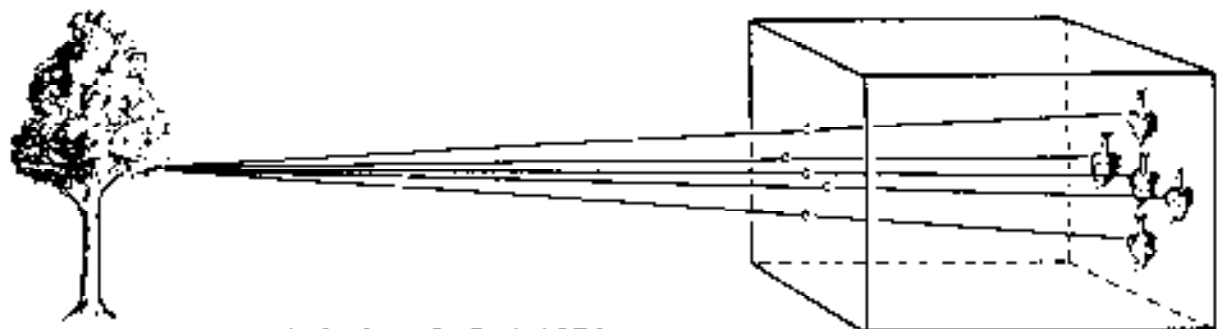
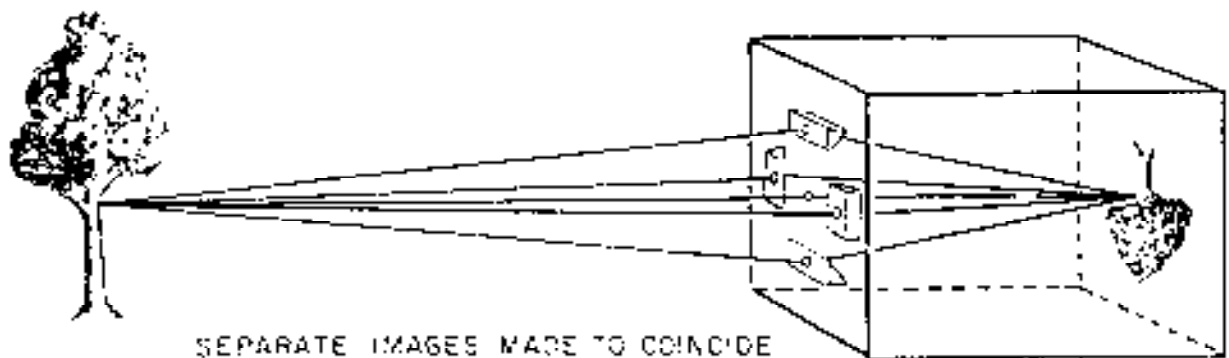


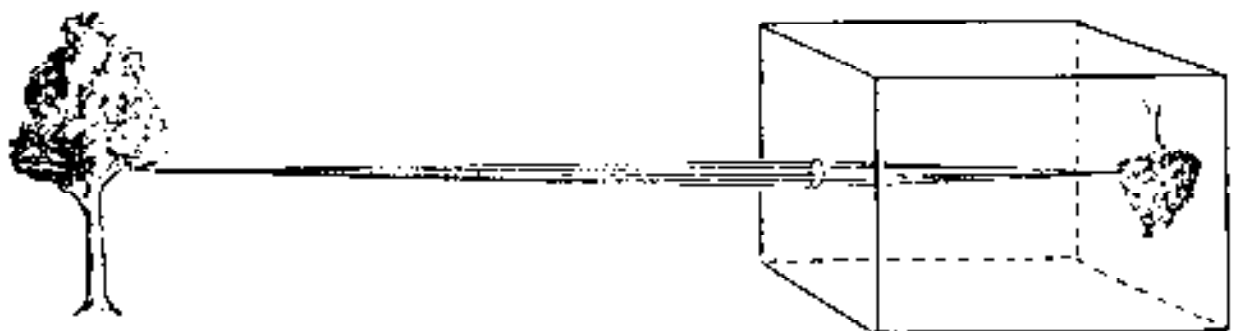
IMAGE PRODUCED BY A PINHOLE CAMERA



SEPARATE PINHOLE IMAGES



SEPARATE IMAGES MADE TO COINCIDE



FORMATION OF AN IMAGE BY A LENS.

Figure 1-16.—Formation of an image by a lens.

incorporated in a single circular piece of glass (fig. 1-16).

CHARACTERISTICS OF LENSES

There are several factors that must be included when you are considering the characteristics of lenses. To perform well as a Navy photographer, you must recognize the effect of these lens characteristics. Realize also that it is the recognition and use of these various lens features and/or qualities that can make the difference between good and poor photography. You must learn to recognize the photographic effect of these characteristics and be able to apply them to produce top quality photography. Finally, you must learn how some of the lens characteristics may limit photographic quality or operational capability.

Lens Focal Length

In photography, lens focal length is the distance between the optical center of a lens and the focal plane (film plane) of the camera when the lens is focused at infinity (fig. 1-17). To understand this definition, you must fully understand the terms *focal plane*, *optical center*, and *infinity*.

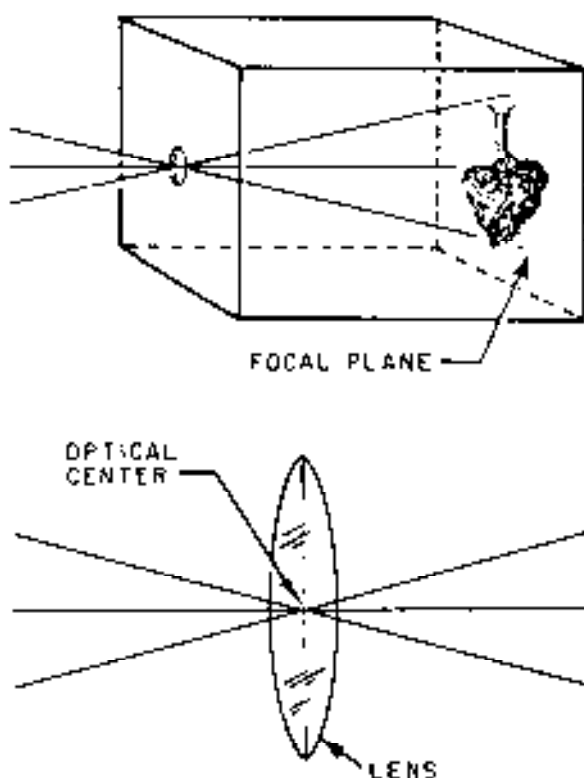


Figure 1-17.—Focal plane and optical center.

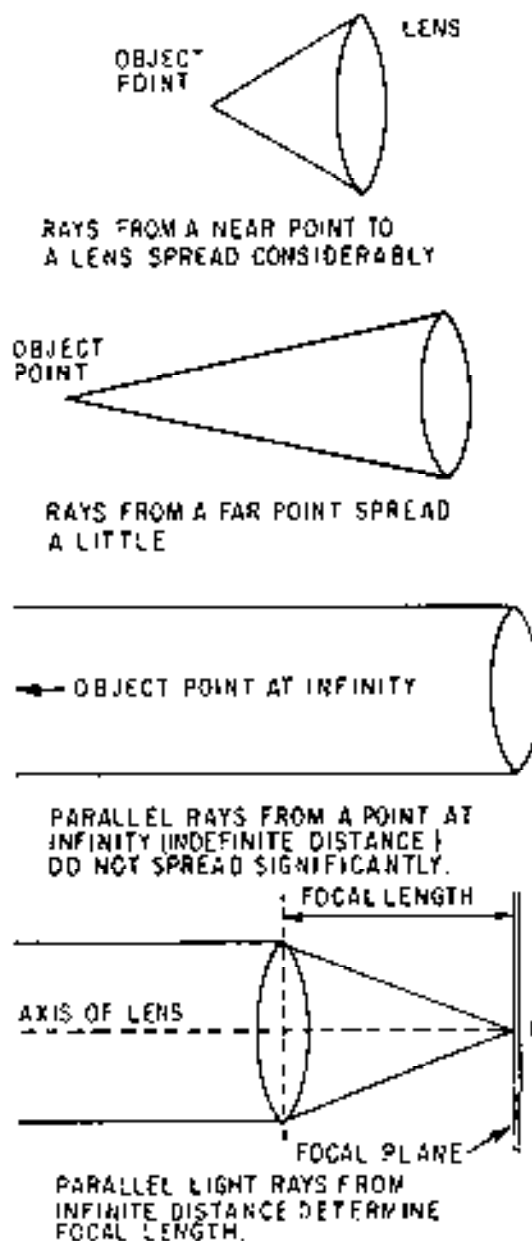


Figure 1-18.—Effects of lens-to-subject distance on light rays.

- ◆ **Focal plane**—The surface (plane) on which an image transmitted by a lens is brought to sharp focus; the surface or area at the back of the camera occupied by the film.

- **Optical center**—The optical center of a lens is a point, usually (although not always) within a lens, at which the rays of light from two different sources entering the lens are assumed to cross.

- ◆ **Infinity**—This term is not easily described. When light is reflected from the point of an object, the closer the point is to the lens, the greater is the angle of the spread of light rays from the object (fig. 1-18). As the

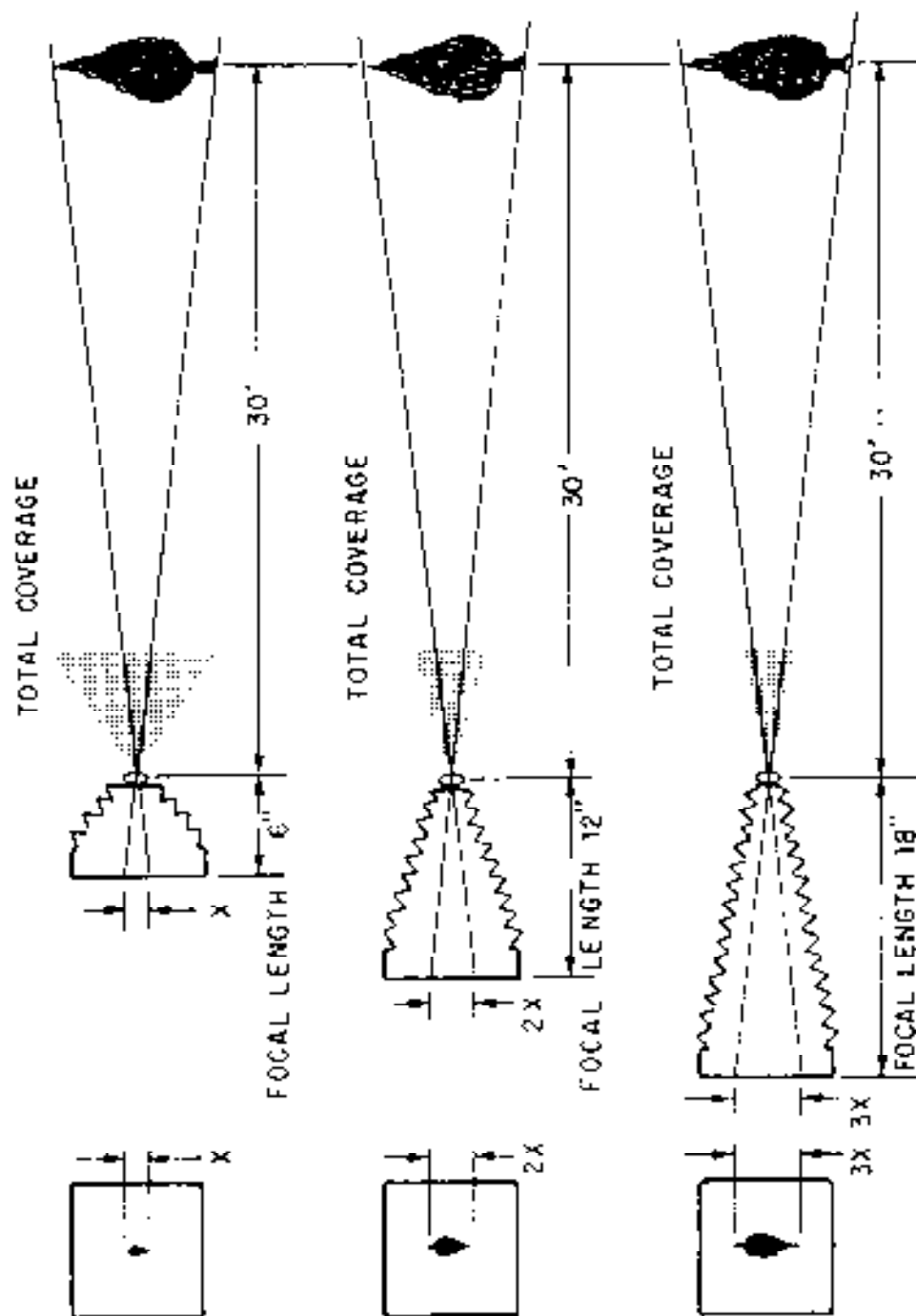


Figure 1-19.—Image size and coverage as compared to the lens focal length.

object point gets farther away from the lens, the angle of spread becomes less and less until a distance is reached at which the rays from a single point, for all practical purposes, can be considered parallel. This distance is known by the term *infinity*. For all practical purposes, light rays from a distant object or an object at 600 or more feet away may be considered to be parallel. But this is only for practical purposes. When very long focal-length lenses or telephoto lenses are being considered, the distance of 600 feet may be much less than infinity. In other words, infinity is a distance so far removed from the camera lens that the rays of light reflected to the lens from a point at that distance may be regarded as parallel. Infinity is expressed by the symbol ∞ and is a setting on a camera focusing scale.

The manner in which light rays are refracted by a lens determines the focal length. This refraction, in turn, depends on the nature of the glass used in the elements, the curvatures of the element surfaces, and the separation of the elements. The first two factors are fixed quantities once the lens is manufactured, but the third factor may be changed individually in certain lenses.

In *zoom lenses* the distance separating the lens elements can be changed. In convertible lenses, portions or elements of the lens can be used by themselves. In either method, the focal length of the lens can be changed. When one of these two conditions cannot be met, the focal length is fixed and constant.

Photographic lenses are measured according to their focal length which is normally imprinted somewhere on the lens mounting (usually the front surface of the lens barrel). This focal length information is sometimes given in inches, sometimes in millimeters, and occasionally in both systems. Focal length is frequently used to indicate the size of a lens. Thus, a lens labeled as an 8-inch lens indicates that when it is focused on a point at infinity, the distance from its optical center to the focal plane is 8 inches.

The focal length of a photographic lens dictates the size of the image produced by the lens at a given lens-to-subject distance. Focal length also determines the minimum distance between the lens and the focal plane. The normal focal length of a lens (normal lens) for a camera is approximately equal to the diagonal dimension of the film being used. Since the diagonal dimension of a 4x5 film is 6.4 inches, a lens about 6 inches is a normal lens for such film.

Lenses with a longer than normal focal length may be used on a camera, provided the distance from the lens to the film can be increased sufficiently to accommodate

the increase in focal length. Lenses shorter than the normal focal length may also be used, provided they are designed to meet the constraints of the camera and film size.

FOCAL LENGTH AND IMAGE SIZE.—When you photograph the same object at the same distance, a lens with a long-focal length produces a larger image than one with a short-focal length. In effect, the longer focal-length lens magnifies or brings the subject closer to the camera without changing the camera-to-subject distance (fig. 1-19). For example, a man 6 feet tall stands at a distance of 25 feet from three cameras, one equipped with a 6-inch lens, one with a 12-inch lens, and one with a 24-inch lens. The 6-inch lens produces a 1 1/2-inch image of the man. The 12-inch lens produces an image that is 3 inches high. The 24-inch lens produces a 6-inch image. From this example, it is obvious that the longer the focal length of the lens, the larger the image size of a given object from a given lens-to-subject distance.

FOCAL LENGTH AND SUBJECT COVERAGE.—Focal length and subject coverage go hand in hand—just as do focal length and image size. But, whereas image size increases with increased focal length, coverage decreases with increased focal length. We can consider coverage as the amount of subject matter included in a given format film size from a given lens-to-subject distance. With two cameras—each with a different focal-length lens—at the same distance from the same subject, the camera with the shortest focal-length lens includes the greatest subject area—the camera with the longest focal-length lens the least subject area (fig. 1-20).

Angle of Field.—The focal length of a lens is a determining factor in the coverage of that lens. The maximum coverage at the focal plane of a lens is expressed in degrees as the *angle of field*. Angle of field is the widest angle at which light entering a lens produces a usable portion of the *circle of illumination* at the focal plane. Light around the edges of the entire circle falls off in intensity before disappearing completely. The usable portion of this circle is called the *circle of good definition*.

The maximum size of film you can use with a lens depends on the angle of field because any part of the film outside the circle of good definition produces an indistinct image.

Angle of field is a basic optical condition that is approximately equal for all normal focal-length lenses. A normal lens, as it is called, has an angle of field of about 45 degrees to 55 degrees. This angle of field

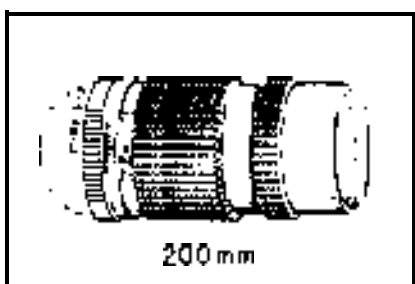
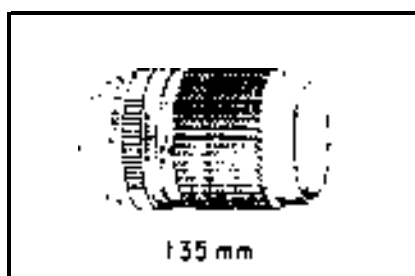
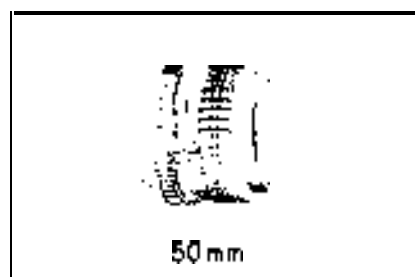


Figure 1-20.—Subject coverage compared to the lens focal length.

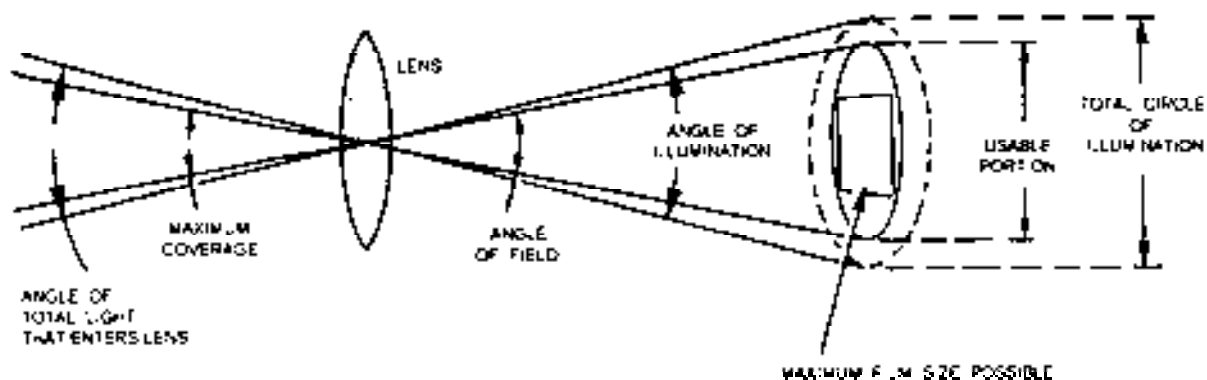


Figure 1-21.—Angle of field.

closely resembles the central vision coverage of the human eye. Wide-angle lenses have a large or wide angle of field. Long focal-length lenses (often called telephotolenses) have a narrow angle of field (fig. 1-21).

Angle of View.—Angle of view determines the coverage of a lens with a particular size of film, with the lens-to-film distance remaining unchanged. Angle of view is an angle with the intercept point at the lens and its sides matching the corners of the film.

The angle of view (fig. 1-22) of a normal focal-length lens with a given film size can approach but never exceed the angle of field of the lens. Any lens recording an angle greater than 55 degrees with a given film size has a short-focal length and is called a wide-angle lens. Any lens with an angle of view less than 45 degrees with a given film size has a longer focal length.

Lens Diaphragm

The diaphragm of a lens is an opening in the lens that allows light to pass through it to expose the film (or other recording medium). This opening can be made larger or smaller to allow more or less light to pass through the lens. When the diaphragm opening is very

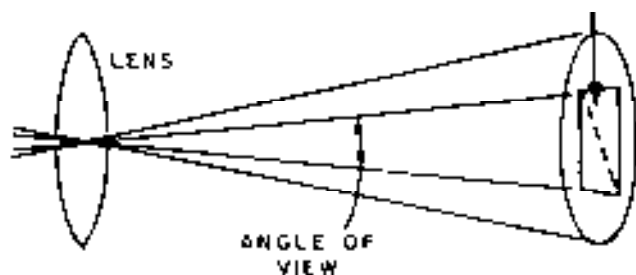


Figure 1-22.—Angle of view.

large, only the object that the lens is focused on is in sharp focus. As the diaphragm opening is reduced (made smaller), more objects in a scene, both in front and behind the point of focus become sharper. The lens diaphragm is used in conjunction with the shutter of the camera to control the amount of light to expose the film.

PERSPECTIVE

The human eyes see objects in three dimensions, but a lens reproduces a view in two dimensions. The missing dimension, depth, is suggested by the relative size and position of the various objects in a picture. *Perspective*, which is the relationship of objects in a photograph, affects the naturalness of a picture. Good perspective represents objects as they actually appear to human eyes.

Since wide-angle lenses take in a greater area, most photographers use them to photograph in tight quarters. And they use long-focus (long focal length) lenses to bring distant objects closer. This is fine, but it is only part of the story. Lenses of different focal length are also used to control perspective.

Perspective is NOT dependent on the focal length of the lens. It is a function of camera-to-subject distance. But a choice of lenses of a different focal length does enable you to get the desired image size at the selected distance for best perspective. For example, suppose you come across a placid farm scene. A rustic rail fence is in the foreground, and a cow is munching on a haystack in the field. The cow and her lunch are 100 feet behind the fence; you are 10 feet in front of the fence. The fence is essential to your picture and you use a 50mm lens. The result! The cow is 110 feet from the camera and is too small in relation to the fence. Your picture is a flop. Now change your perspective. Back up 40 feet from the fence

and use a 200mm lens. The fence at this distance, with the 200mm lens, is the same size as it was at 10 feet with the 50mm lens. The cow is now 140 feet from the camera, but her image is four times larger. In the photograph, it looks as if she were only 35 feet away or 25 feet behind the fence. The results! An interesting picture and pleasing composition. Choosing viewpoint and then selecting focal length for image size is one of the most important functions you should consider when selecting lens focal length.

HOW TO USE LENSES

Today, the Navy photographer is applying photography to the ever-widening specialized and technical fields within the modern Navy. This has led to greater emphasis on the correct and accurate use of the most important part of the camera—the lens. The higher standards of picture quality and the greater interest in picture taking regardless of lighting conditions, all demand more attention to the correct use of lenses. No matter how good the quality of the lenses, if photographers do not use them correctly, they will not do us or the Navy any good.

f/stop of a Lens

To use lenses correctly, the photographer must understand the relationship between the aperture of a lens and the brightness of the image produced at the focal plane. The *aperture* of a lens is simply the opening through which light passes. The aperture is controlled by an adjustable diaphragm or iris. Each setting of the diaphragm is called an *f/stop* and is always read as a number, not as a fraction or true ratio. It is referred to as the f/stop or the f/stop of the diaphragm opening. This value is designated by a lowercase f with a slant (/) between the f and the value. For example, f/8 means that the diameter of the opening in the diaphragm is one eighth of the lens focal length, but only “when the lens is focused on infinity.” In this example f/8 is the effective aperture. If the lens were focused at other than infinity, f/8 would then be the *relative* aperture. In the study of the relationship between aperture and image brightness, the term *relative aperture* is used frequently. The term *relative aperture* then refers to the ratio between the *effective aperture* of the lens and its focal length. The relative aperture of a lens is controlled by two factors: (1) the diameter of the beam of light passed by the lens; and (2) the focal length of the lens, which governs the size of the area over which the light is spread.

f/stop Applications

The formula to determine the f/stop of a lens is as follows:

$$f = \frac{F}{D}$$

Where:

F = focal length

D = diameter of the effective aperture

f = f/stop, or the relative aperture

EXAMPLE: To find the f/stop of a lens that has a focal length of 8 inches and the diameter of the effective aperture is 2 inches, use the formula below.

$$f = \frac{F}{D}$$

$$f = \frac{8}{2} \text{ or } f = 4$$

Therefore, the lens has a relative aperture of f/4.

When the diameter of the opening (aperture) of the lens is made smaller, less light is admitted and the image formed by the beam of light passing through the smaller opening becomes dim. As the size of the opening is reduced, the ratio between the aperture and the focal length increases. Thus an inverse relationship exists between the E/number and the relative aperture; as the f/stop becomes larger, the size of the relative aperture decreases.

Since the f/stop is a ratio of focal length to the lens diameter, all lenses with the same f/stops regardless of focal length provide the same amount of light on the focal plane; that is, when all the other factors that affect image brightness remain constant (fig. 1-23).

DIAPHRAGM

There is in every lens assembly a mechanical device for controlling the amount of light that passes through the lens. This mechanism may have a fixed size, or it may be designed to provide a selection among a number of sizes that can be given to the aperture in a lens. This device is a *diaphragm*, and its scale increments are called f/stops (fig. 1-24). It is located within the lens to cut off or obstruct the marginal light rays while permitting the more central rays to pass. Most lenses have a series of thin metal leaves for this purpose. These leaves are arranged and shaped to provide an approximately circular opening that can be changed in

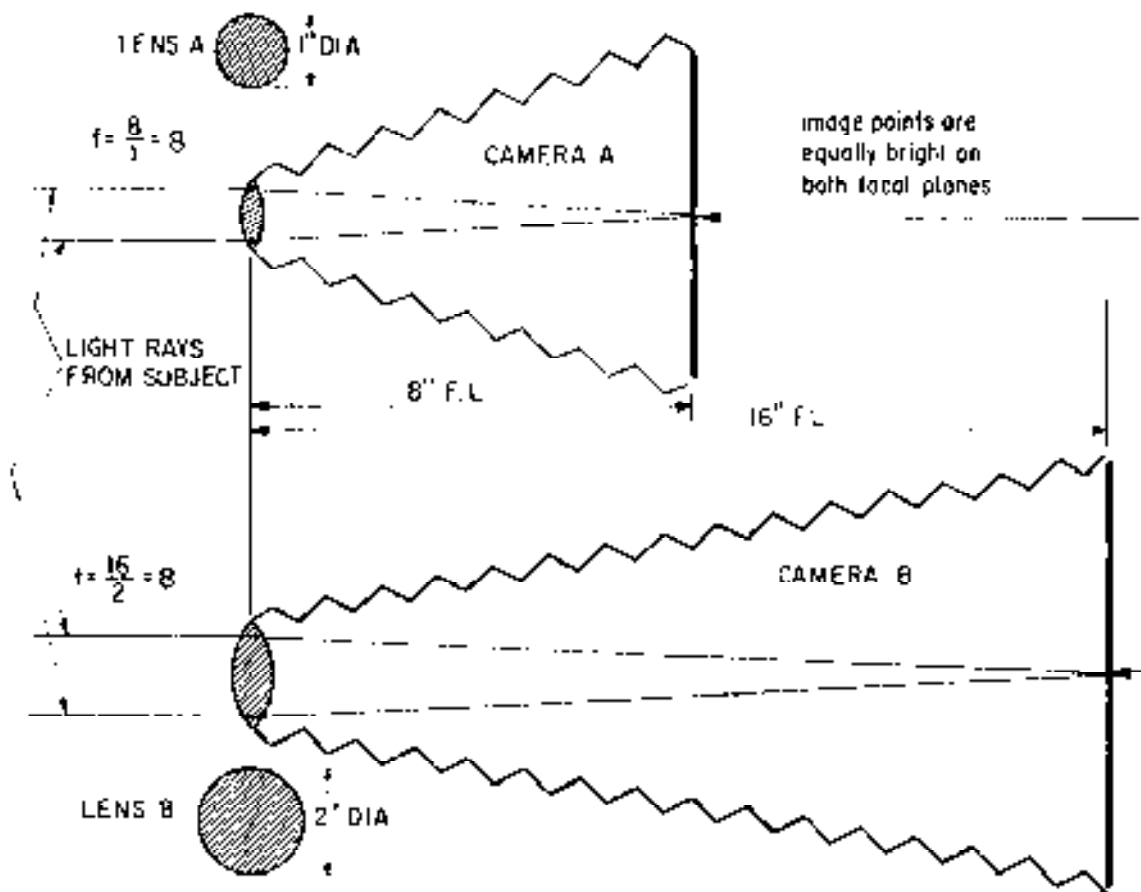


Figure 1-23.—Equal f/stops produce equal intensities.

size, when desired, and is called an iris diaphragm. This opening is always concentric (centered) with, and perpendicular to the optical axis of the lens. Its location in the lens barrel is determined by the manufacturer when the lens is designed.

Rotating the diaphragm control ring in the direction that reduces the size of the aperture is termed *stopping down*. Moving the control ring so it enlarges the aperture

size is termed *opening up*. When the diaphragm is set at the largest aperture, the lens is said to be *wide open*. The better the quality of the optics within the lens, the larger the possible maximum aperture. The size of the largest opening is the maximum working aperture of the lens and is called the *lens speed*. The diaphragm, along with the shutter, controls the amount of light passing through a lens, and hence the exposure the film receives.

There are many different aperture sizes possible with the diaphragm, and each aperture size has a different value. Consequently, a system was devised for marking them so they could be used with consistency. The *factorial system* has become the most widely used. This system uses a set of markings commonly called the *f/system*. By using the diaphragm control ring, or lever, you can bring the index mark into line with the numbers that indicate the measured f/stop of the aperture. Remember, as these index numbers increase in size, the opening decreases in size. Furthermore, these numbers are chosen by moving the index pointer to the next larger number, and the amount of light admitted is cut in half. The first or lowest number in the series is usually an

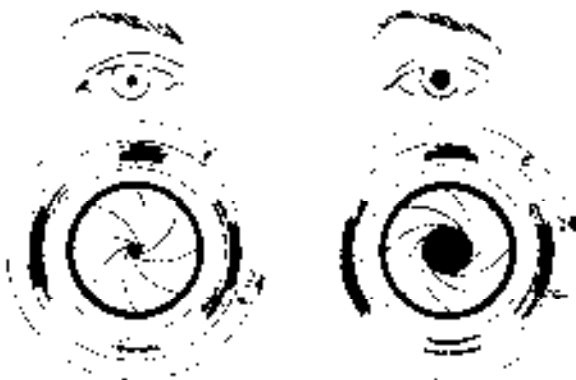


Figure 1-24.—Iris and iris diaphragm.

exception. All these numbers may not exactly reduce the amount of light admitted by one half, but they are sufficiently close for all practical purposes. However, all of these values are in proportion to the squares of their numbers. For example, f/4 admits four times more light than f/8 because the square of f/4 is contained in the square of f/8 exactly four times. Thus,

$$4^2 = 4 \times 4 = 16$$

$$8^2 = 8 \times 8 = 64$$

$$\frac{64}{16} = 4$$

Table 1-1 shows that the amount of light admitted is inversely proportional to the square of the f/stop, while the exposure required is directly proportional to it.

EXAMPLE: The correct exposure at f/8 required 1 second. How long an exposure is required at f/16? The proportion and computation are as follows:

$$\frac{(\text{Old } f/\text{value})^2}{(\text{New } f/\text{value})^2} = \frac{(\text{Old exposure})}{(\text{Required exposure})}$$

$$\frac{8^2}{16^2} = \frac{1}{x}$$

$$\frac{64}{256} = \frac{1}{x}$$

$$64x = 256$$

$$x = 4$$

Thus the required exposure equals 4 seconds.

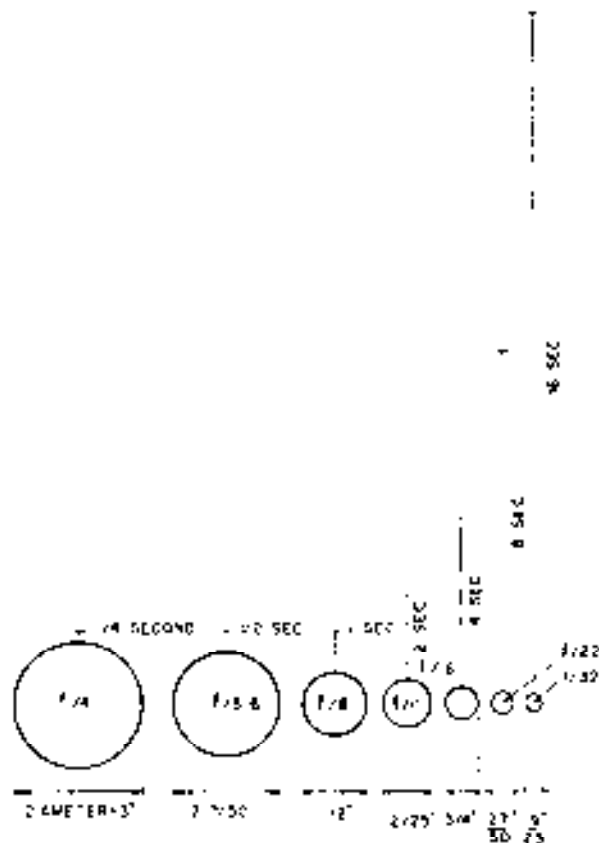


Table 1-1.—Comparison of f/stops with Amount of Light to Exposure Time

f/ value	f/value ² squared	Amount of light admitted	Exposure in seconds
4	16	4	1/4
4.5 (half stop)	20.25	3.2	1/3
5.6	31.36	2	1/2
8	64	1	1
11	121	1/2	2
16	256	1/4	4
22	484	1/16	8
32	1024	1/32	16

Table 1-2.—Amount of light, f/stop, and Exposure Time Relationship

f/stop	Relative exposure	Relative amount of light admitted
1	0.06	16
1.4	0.12	8
2	0.25	4
2.8	0.50	2
4	1.0	1
5.6	2.0	1/2
8	3.0	1/4
11	8.0	1/8
16	16.0	1/16
22	32.0	1/32
32	64.0	1/64
45	128.0	1/128
64	256.0	1/256

The first (lowest) f/stop marked on the lens mount is the correct value for its largest aperture. The next number is the nearest f/stop in an arbitrary series that has been adopted as a standard. In this standard series, each succeeding number going up the scale (from the largest opening to the smallest) permits only half as much light to enter the camera. Thus, as the numbers get larger, the diaphragm openings (apertures) become smaller. However, moving the index pointer in the reverse order, down the scale (from the smallest opening to the largest), the numbers get smaller and the diaphragm openings become larger. As shown in table 1-1, the *smallest number* may not admit exactly twice as much light as the next larger number. Nevertheless, the amount of light admitted remains inversely proportional to the square of the f/stop, and the exposure required is always directly proportional to it.

All lenses are indexed with the standard series of f/stops either completely or in part—except for the first f/stop (as stated earlier) that is computed to indicate the correct value of the maximum aperture. The photographer should become acquainted with this series, so its relative values are known. The following table is a listing of the f/stop, better known as the standard full stops. A comparative exposure based on 1 second at f/4 or 16 seconds at f/16 is also shown (table 1-2).

By studying the table, you can see that when the lens aperture is opened one full stop, the amount of light transmitted is twice that of the nearest preceding stop. And altering the f/stop one full stop less (stopping down) reduces the amount of light passing through the lens to one half that of the nearest larger stop.

In summary then:

- Light passes through an opening (aperture) of the lens. The diameter of the aperture can be changed. The openings are called f/stops. The f/stops indicate to the photographer that a lens (any lens) with a specific f/stop allows a given amount of light to the film. Thus a 12-inch focal-length lens set at f/4.5 gives the same exposure as a 6-inch focal-length lens set at f/4.5.

- The f/stops represent a fraction of the focal length of the lens for a given lens; that is, an f/4 lens has an effective maximum opening of one fourth of its focal length.

- From one full f/stop to the next full f/stop, there is a constant factor of two. As the opening changes from f/8 to f/11, the light passing through the lens is reduced by one half because the larger f/stop (f/11) is a smaller aperture. When the aperture is changed from f/8 to f/5.6, the light passed is doubled because the aperture has been made larger.

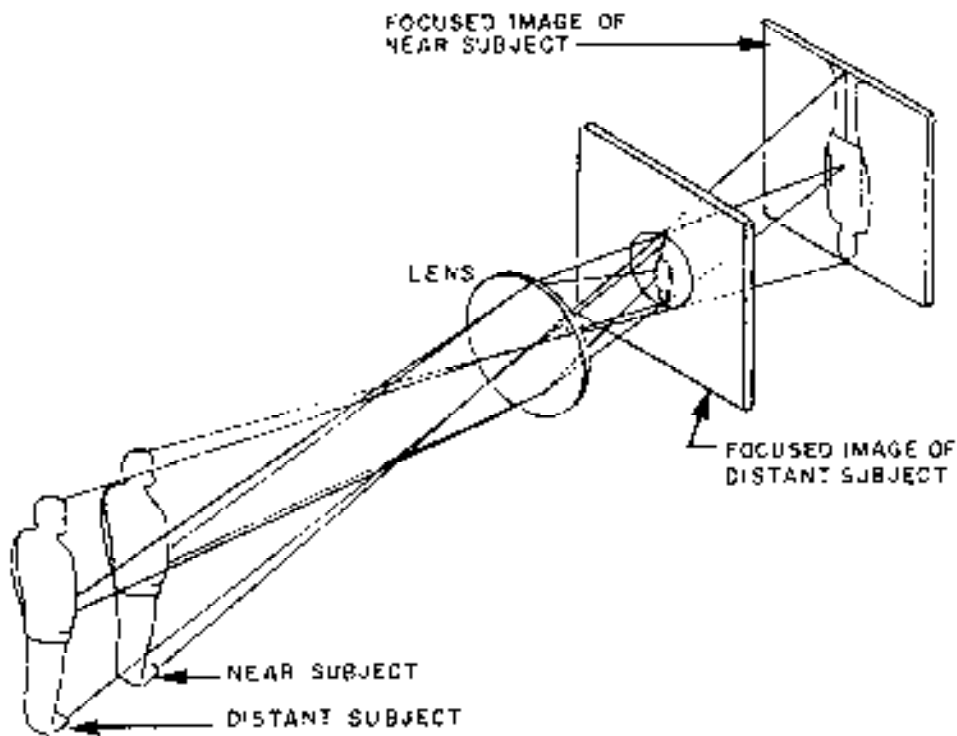


Figure 1-25.—Subject distance and focus.

f/stops Functions

f/stops have three functions:

1. They act as a partial control of exposure (the other exposure control is the shutter).
2. They help control depth of field.
3. They allow the photographer to adjust the aperture to the point of best definition of the lens, sometimes called the optimum or critical aperture.

Each of these functions is discussed in this chapter.

Focusing

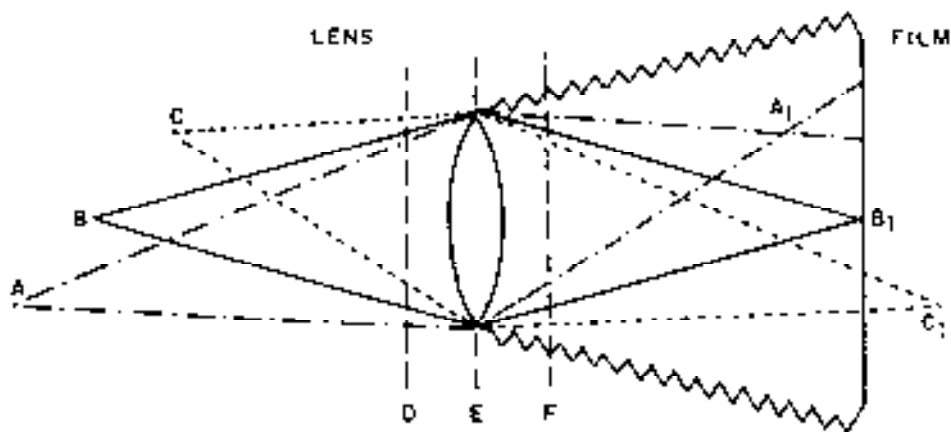
A lens, at a given focus setting, provides a sharp image of an object at only one distance in front of it. However, when the distance between the focal plane and the lens can be adjusted, the lens can be made to form sharp images of objects located at differing distances in front of it. Therefore, to get a sharp image of a subject at a given distance, you must adjust the lens to the appropriate distance from the film plane. This adjustment is known as focusing.

In focusing a camera lens, the nearer the subject is to the lens, the farther behind the lens the image is formed. For close subjects, the lens must be moved away

from the film plane to focus the image; and the farther away the subject is from the lens, the closer to the lens the film plane must be (fig. 1-25).

INFINITY FOCUS.—When the lens is focused on an object so distant that the light rays reflected from it are parallel, these rays converge (after refraction by the lens) at the *point of principal focus*. The point of principal focus is on the *principal focal plane*; that is, at a distance of one focal length behind the lens. Therefore, the lens is said to be on infinity focus.

When the distant object is moved nearer to the lens or the lens is moved closer to the object, the distance between the focal plane and the lens must be increased to keep the image in sharp focus. When the distance between the lens and focal plane is not extended as the object is moved nearer to the lens, the image of the object becomes blurred or out of focus. The closer the lens is to the object it is focused upon, the larger the image becomes until the distance between the lens and the focal plane is extended to twice the focal length of the lens. At this distance, the image and the object focused upon are the same size. Therefore, the size of an image formed by a lens is dependent upon two factors: the distance from the lens to the object focused upon and the focal length of the lens.



Light coming from the far object A passes through the lens to form a sharp image at A_1 and light coming from the nearer object C passes through the lens to form a sharp image at C_1 . To obtain a sharp image of A, move the film to A_1 or move the lens to F. To obtain a sharp image of C, move the film to C_1 or move the lens to D.

Figure 1-26.—Focusing for one object.

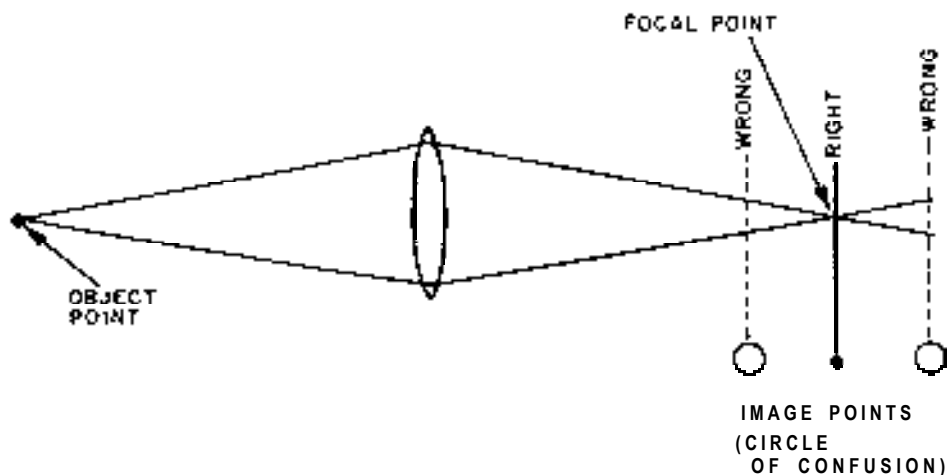


Figure 1-27.—Image on film in front of and in back of the point of sharp focus.

FOCUSING FOR ONE OBJECT.—Focusing is done essentially to obtain the proper distance between the lens and the film. When light rays come from a far object and pass through a lens, they form a sharp image close to the lens. When light rays come from a near object, they form an image farther away from the lens. This means that the lens must be focused on either the far or the near object, depending on which one the photographer wants to have in sharp focus. When a sharp image of the near object is desired, the lens should be focused by moving it farther away from the film. When you want a sharp image of the far object, move the lens closer to the film (fig. 1-26).

CIRCLE OF CONFUSION.—A picture is basically an accumulation of many points that are exact images of points composing the subject. After light strikes a subject, it is reflected from many points on the subject. A camera lens redirects these reflected rays into corresponding points on the film. Each of these points is reproduced by the lens as a circle. When the circle is smaller than $1/100$ inch, it appears as a sharp point to the eye. When the circle is larger than $1/100$ inch, the eye sees it as a circle, and the image is blurred or out of focus. Each out-of-focus circle on the film is called a *circle of confusion* and can be visualized as the cross section of a cone of a light ray (fig. 1-27).

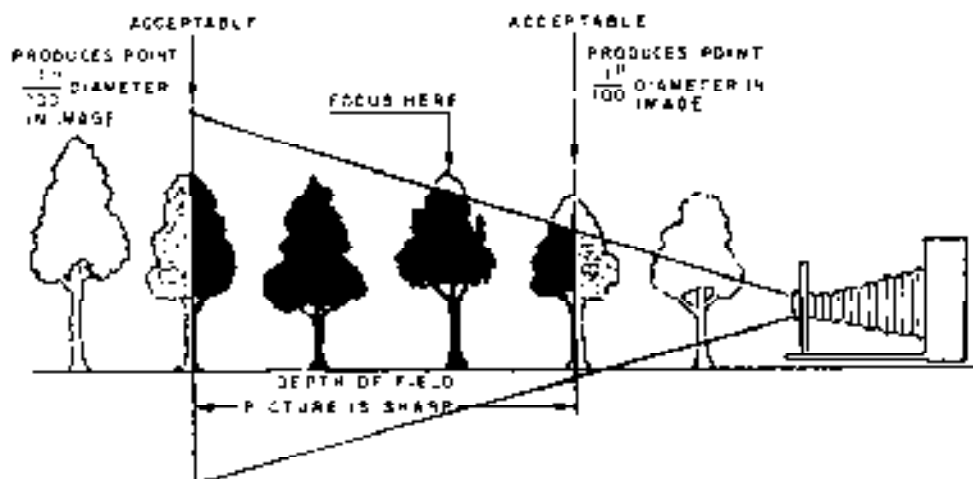


Figure 1-28.—Depth of field.

When a lens is focused on an object at a certain distance, other objects, both closer and farther than the focus distance, form larger circles of confusion. When the film is placed at a point corresponding to the lens focus distance, a clear image is produced (fig. 1-28). When the film is nearer or farther away from the lens than the corresponding lens focus distance, the image becomes blurred because of the larger circles of confusion caused by the intersection of light rays either in front of, or behind, the film plane.

Another factor affecting the circle of confusion is lens aperture. Decreasing a lens opening narrows the light rays passed by the lens. The narrower these rays, the smaller the circles of confusion when the image is not in perfect focus. In practice, this means that a small lens opening is used to record, as clearly as possible, several objects at varying distances. Even when the rays from some objects do not intersect perfectly at the film plane, the circles of confusion ahead or behind the film are negligible and still appear as a sharp image.

The size of the permissible circle of confusion depends on the film format size and the manner in which the film will be used. Experience has shown that the permissible circle of confusion should not exceed about 1/1000 of the focal length of the lens. This is normal for the film size. The generally accepted permissible circle of confusion diameters are given in table 1-3.

The minimum circle of confusion of most lenses is small. Thus the focal plane can be moved slightly and yet retain an acceptable sharp image. However, as the distance of the movement is increased, the circle of confusion becomes greater and the image becomes less

Table 1-3.—Permissible Circle of Confusion Is Dependent on Film Size

Film Size	Diameter (inches)
16mm	0.0010
35 mm	0.002
2 1/4 x 2 3/4"	0.004
4 x 5"	0.006
8 x 10"	0.012

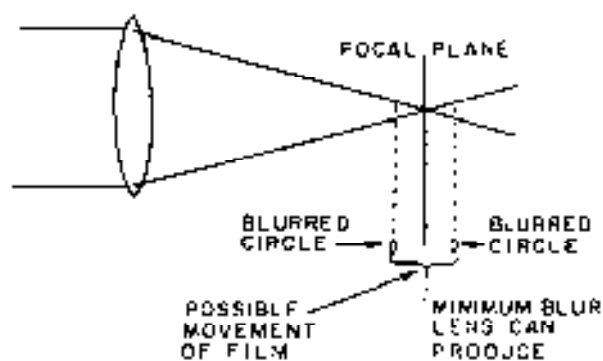


Figure 1-29.—Depth of focus.

sharp. Consequently, the distance that the focal plane can be moved forward or backward from the plane of sharp focus and continue to produce an image of acceptable sharpness is termed the *depth of focus*. This depth is always within the camera (fig. 1-29).

HYPERFOCAL DISTANCE.—The hyperfocal distance of a lens is the distance from the optical center of the lens to the nearest point in acceptably sharp focus when the lens, at a given f/stop, is focused at infinity. In other words, when a lens is focused at infinity, the distance from the lens beyond which all objects are rendered in acceptably sharp focus is the hyperfocal distance. For example, when a 155mm lens is set at f/2.8 and focused at infinity, objects from 572 feet to infinity are in acceptably sharp focus. The hyperfocal distance therefore is 572 feet.

The following equation is used to find hyperfocal distance:

$$H = \frac{F^2}{f \times C}$$

Where:

H = hyperfocal distance

F = focal length of lens

f = f/stop setting

C = diameter of circle of confusion

F and C must be in the same units, inches, millimeters, and so forth.

NOTE: 1 inch is equal to 25.4mm.

Where:

F = 155mm (6.1 inches)

f = 2.8

C = 0.05 (0.002 inches)

Then:

$$H = \frac{6.1^2}{2.8 \times 0.002} = 6650 \text{ inches} = 554 \text{ feet}$$

Thus the hyperfocal distance for this lens set at f/2.8 is 554 feet.

Hyperfocal distance depends on the focal length of the lens, the f/stop being used, and the permissible circle of confusion. Hyperfocal distance is needed to use the maximum depth of field of a lens. To find the depth of field, you must first determine the hyperfocal distance. By focusing a lens at its hyperfocal distance, you cause the depth of field to be about one half of the hyperfocal distance to infinity.

DEPTH OF FIELD.—Depth of field is the distance from the nearest point of acceptably sharp focus to the

farthest point of acceptably sharp focus of a scene being photographed. Because most subjects exist in more than one plane and have depth, it is important in photography to have an area in which more than just a narrow, vertical plane appears sharp. Depth of field depends on the focal length of a lens, the lens f/stop, the distance at which the lens is focused, and the size of the circle of confusion.

Depth of field is greater with a short-focal-length lens than with a long-focal-length lens. It increases as the lens opening or aperture is decreased. When a lens is focused on a short distance, the depth of field is also short. When the distance is increased, the depth of field increases. For this reason, it is important to focus more accurately for pictures of nearby objects than for distance objects. Accurate focus is also essential when using a large lens opening. When enlargements are made from a negative, focusing must be extremely accurate because any unsharpness in the negative is greatly magnified.

When a lens is focused at infinity, the hyperfocal distance of that lens is defined as the near limit of the depth of field, while infinity is the far distance. When the lens is focused on the hyperfocal distance, the depth of field is from about one half of that distance to infinity.

Many photographers actually waste depth of field without even realizing it. When you want MAXIMUM depth of field in your pictures, focus your lens on the hyperfocal distance for the f/stop being used, NOT on your subject which of course would be farther away than the hyperfocal distance. When this is done, depth of field runs from about one half of the hyperfocal distance to infinity.

There are many times when you want to know how much depth of field can be obtained with a given f/stop. The image in the camera viewing system may be too dim to see when the lens is stopped down. Under these conditions, some method other than sight must be used to determine depth of field. Depth of field can be worked out mathematically.

The distance, as measured from the lens, to the nearest point that is acceptably sharp (the near distance) is as follows:

$$ND = \frac{H \times D}{H + D}$$

The distance, as measured from the lens, to the farthest point that is acceptably sharp (the far distance) is as follows:

$$FD = \frac{H \times D}{H - D}$$

ND = near distance

H = hyperfocal distance

D = distance focused upon

FD = far distance

EXAMPLE: What is the depth of field of a 155mm (6.1 inch) lens that is focused on an object 10 feet from the camera lens using f/2.8? (Note: In a previous example the hyperfocal distance for the lens was found to be 554 feet.) By the formula, the nearest sharp point is determined as follows:

$$ND = \frac{H \times D}{H + D}$$

$$ND = \frac{554 \times 10}{554 + 10} = \frac{5540}{564} = 9.8$$

$$ND = 9.8 \text{ feet}$$

Thus the nearest point in sharp focus is 9.8 feet from the lens that is focused on an object at 10 feet, using f/2.8.

Also by the formula, the farthest point in sharp focus can be determined as follows:

$$FD = \frac{H \times D}{H - D}$$

$$FD = \frac{554 \times 10}{554 - 10} = \frac{5540}{544} = 10.2$$

$$FD = 10.2 \text{ feet}$$

Therefore, the far point in sharp focus is 10.2 feet when focused on an object at 10 feet, using f/2.8. Consequently, the depth of field in this problem equals the near distance subtracted from the far distance (10.2 - 9.8 = 0.4-foot depth of field). Thus all objects between 9.8 and 10.2 feet are in acceptably sharp focus. When this depth of field is not great enough to cover the subject, select a smaller f/stop, find the new hyperfocal distance, and apply the formula again.

When the only way you have to focus is by measurement, the problem then becomes one of what focus distance to set the lens at so depth of field is placed most effectively. There is a formula to use to solve this problem.

$$P = \frac{D \times d \times 2}{D + d}$$

Where:

D = distance to farthest point desired in sharp focus

d = distance to nearest point desired in sharp focus

P = distance to point at which the lens should be focused

Substituting the figures from the previous examples,

$$D = 10.2 \text{ feet}$$

$$d = 9.8 \text{ feet}$$

$$P = \text{lens focus distance}$$

Then:

$$P = \frac{10.2 \times 9.8 \times 2}{10.2 + 9.8} = \frac{200}{20} = 10 \text{ feet}$$

$$P = 10 \text{ feet}$$

To obtain the desired depth of field at f/2.8, we set the lens focus distance at 10 feet.

If the preceding explanations and formulas have confused you, here is some good news! Most cameras and lenses have depth of field indicators that show the approximate depth of field at various distances and lens apertures. Figure 1-30 shows that with the lens set at f/8 and focused at about 12 feet, subjects from about 9 feet to about 20 feet are in acceptably sharp focus. By bringing the distance focused upon to a position opposite the index mark, you can read the depth of field for various lens openings.

Keep in mind that a depth of field scale, either on the camera or on the lens, is for a given lens or lens focal length only. There is no universal depth-of-field scale that works for all lenses.

In conclusion, the two formulas used to compute depth of field serve for all distances less than infinity. When the lens is focused on infinity, the hyperfocal distance is the nearest point in sharp focus, and there is no limit for the far point.

CONJUGATE FOCI

Object points and their corresponding image points formed by a lens are termed *conjugate focal points*. The distances from the optical center of the lens to these points, when the image is in focus, are termed *conjugate focal distances* or *conjugate foci* (fig. 1-31).

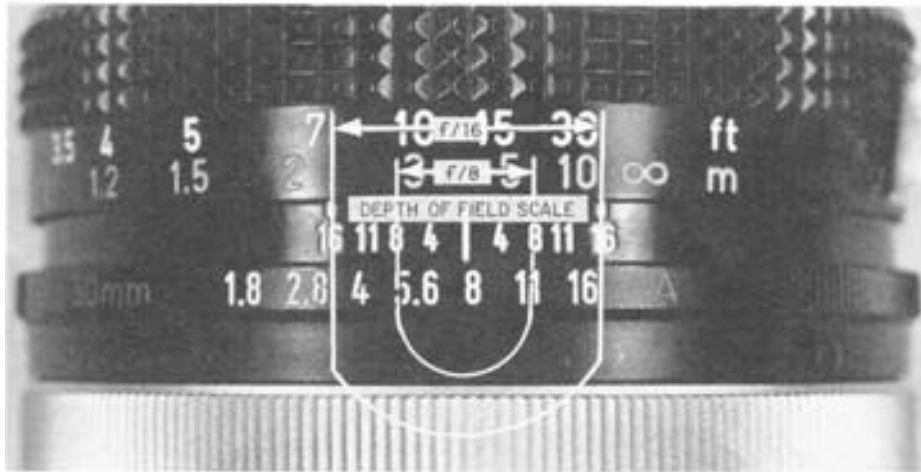


Figure 1-30.—Depth of field on camera focusing ring.

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The terms *object focal distance* and *image focal distance* are often used for these conjugate distances. It is obvious from these two terms that the object distance is outside the camera and the image distance is inside the camera. Since the focal length denotes only the distance from its center to the image when focused at infinity, we need some way to account for the fact that when we focus on closer objects the image focal distance can be much more than the lens focal length, with a corresponding effect on image size, effective aperture, and other factors.

The various ratios between image and object focal distances may be determined by a formula that contains the focal length of the lens and the ratio (scale) between the image size and the object size.

That is:

F = the focal length of the lens

R = the ratio between the image and object size
or the ratio between the conjugate foci of
the image and object

When R is determined by the following formula:

$$R = \frac{\text{Image size}}{\text{Object size}}$$

$$\text{Object focal distance} = F + F \div R$$

$$\text{Image focal distance} = F + (F \times R)$$

For a 1: 1 reproduction using a 50mm lens, your object focal distance is as follows:

$$50\text{mm} + \frac{(50\text{mm})}{1} = 100\text{mm}$$

and the image focal distance is as follows:

$$50\text{mm} + (50\text{mm} \times 1) = 100\text{mm}$$

When the image formed by a lens is smaller than the object, the larger conjugate is outside the camera. When the image formed is larger than the object, the larger conjugate is inside the camera.

These conjugate focal distances have some interesting relationships that may be used in several ways. The following examples illustrate the practical value of these distance relationships:

EXAMPLE 1: A4x5-inch copy negative must be made of a 16x20 print using a camera equipped with a 10-inch focal length lens.

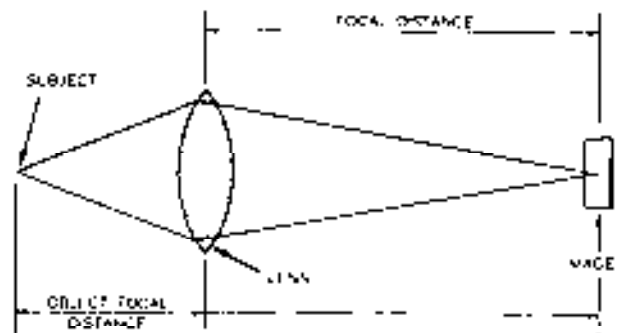


Figure 1-31 .—Conjugate distances.

PROBLEM: Determine the distance that is required between the film and the lens (the image focal distance) and the necessary distance between the lens and the print (the object focal distance).

The ratio between the film size and the print size (4:16 or 5:20) may be reduced by using the following formula:

$$R = \frac{4}{16} = \frac{1}{4}$$

Likewise:

$$R = \frac{5}{20} = \frac{1}{4}$$

Substituting the figures into the formula:

$$\begin{aligned}\text{Object focal distance} &= F + (F \div R) \\ &= 10 + (10 \div 1/4) \\ &= 50 \text{ inches}\end{aligned}$$

$$\begin{aligned}\text{Image focal distance} &= F + (F \times R) \\ &= 10 + (10 \times 1/4) \\ &= 12.5 \text{ inches}\end{aligned}$$

Therefore, the camera lens must be 50 inches from the print and the film must be 12.5 inches from the lens to make a 4x5-inch image of a 16x20 print using a 10-inch lens.

EXAMPLE 2: Make a full-length portrait of a man 6 feet (72 inches) tall using a 10-inch focal-length lens, and make the image on the film 5 inches long.

PROBLEM: How much studio space is required to make this photograph?

The ratio is 5:72, which reduces to

$$R = \frac{5}{72} = \frac{1}{14.4}$$

Substituting the formula:

$$\text{Image focal distance} = 10 + (10 \times \frac{1}{14.4}) = 10.7 \text{ inches}$$

$$\text{Object focal distance} = 10 + (10 \div \frac{1}{14.4}) = 154 \text{ inches}$$

Adding 10.7 inches and 154 inches and converting to feet gives a film to subject distance of 13.7 feet. However, there must be enough space added to this distance to allow a background behind the subject and operating space behind the camera. Three or four feet at each end is about the minimum for good work. Thus, if

the room is not at least 20 feet long ($13.7 + 6 = 19.7$), a portrait this size cannot be made with a 10-inch lens.

EXAMPLE 3: A diagram 4 inches square is to be photographed so the image on the film is 8 inches square. Using a 10-inch lens, how much bellows extension, or camera length, is required? The ratio here is 8:4, or

$$R = \frac{8}{4} = 2$$

The image focal distance equals the bellows extension or the required length of the camera.

Substituting:

$$\begin{aligned}\text{Image focal distance} &= 10 + (10 \times 2) \\ &= 30 \text{ inches}\end{aligned}$$

If the camera does not have sufficient bellows extension to allow the film to be placed 30 inches from the lens, the required negative or image size cannot be made with this camera and lens.

It is not difficult to calculate the various distances for different jobs. The photographer also saves the time and unnecessary work usually required by the trial-and-error method.

Image/Object Relationship

The size of the image formed by a lens is dependent upon the following:

- The size of the subject
- The lens-to-subject distance
- The lens focal length

The size of the image of any object at a given distance is directly proportional to the focal length of the lens being used. That is, when a given object at a given distance appears 1 inch high on the focal plane when a 3-inch lens is used, it appears 2 inches high when a 6-inch lens is used and 1/2 inch high when a 1 1/2-inch lens is used.

The proportion illustrated in the following figure is the basis of the equation commonly used for solving image-object and focal length distance relationship problems (fig. 1-32).

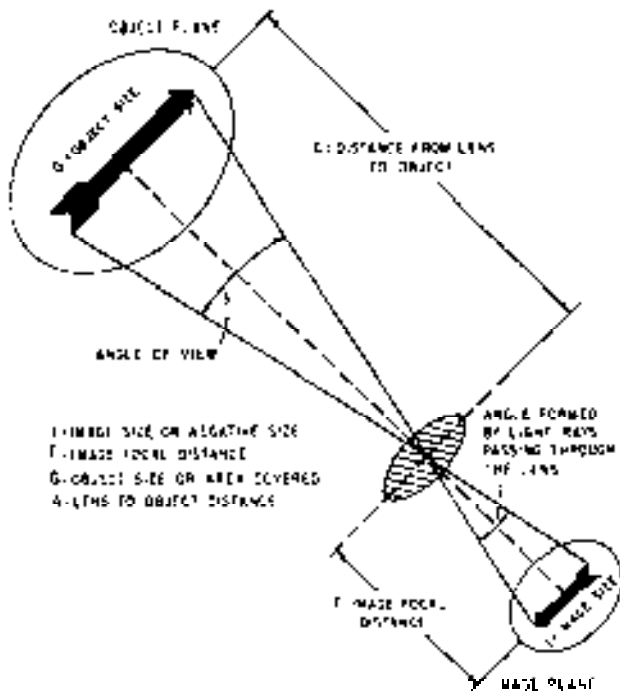


Figure 1-32.—Proportional IFGA.

All image-object and focal length distance relationship problems can be computed with the following simple proportion:

The image size (I)
is to the image focal distance (F)
as the object size (G)
is to the object focal distance (A)

You should thoroughly understand this equation since you will have many uses for it in many different applications of photography.

Study the proportional IFGA figure and note the following:

I - the image size
F - the image focal distance
G - the object size
A - the distance from lens to object

The ratio of image size to image focal distance is the same as the ratio of object size to object focal distance as follows:

$$I:F = G:A$$

The mathematical equation resulting from this proportion is as follows:

$$IA=FG$$

The proportion may be written in fractional form as follows:

$$\frac{I}{F} = \frac{G}{A}$$

When solving for I:

$$I = \frac{FG}{A}$$

When solving for A:

$$A = \frac{FG}{I}$$

To clear or set apart one factor of an equation so it may be solved, divide the equation by all factors on that side of the equation except the one to be set apart.

When solving for F:

$$F = \frac{IA}{G}$$

When solving for G:

$$G = \frac{IA}{F}$$

These four formulas are from the same equation $IA = FG$.

Inches and feet are used in the equation that eliminates the computations required to reduce feet measurements to inches. However, the relation of inches to inches and feet to feet must be maintained on the respective sides of each equation. Keep I and F values in inches and G and A values in feet. Then, when solving for I or F, the result will be in inches. When solving for G or A, the result will be in feet.

In the sample problems which follow, the $IA = FG$ formula is used as though the camera were focused at infinity.

PROBLEM 1: A lens with a focal length of 12 inches is used to photograph an object 10 feet high from a distance of 30 feet. What is the size of the image? Solve for the unknown factor (image size) by substituting the known factors (focal length, object size, and distance) into the equation $IA = FG$. The formula and computations are as follows:

$$I = \frac{FG}{A}$$

$$I = \frac{12 \times 10}{30}$$

I = 4, or image size equals 4 inches

This computation can be done with lenses marked in millimeters; however, the result will also be in millimeters. At this point, you must convert millimeters to inches as follows:

$$I = \frac{305\text{mm} \times 10 \text{ ft}}{30}$$

$$= 101\text{mm} \times .04 \text{ (conversion factor)} = 4 \text{ inches}$$

Where:

I = the image size

F = the focal length

G = the object size

A = the distance from the lens to the object

PROBLEM 2: A 24-inch focal-length lens is used to photograph an object 10 feet high from a distance of 30 feet. What is the length of the image? The formula and computations are as follows:

$$I = 8 \text{ inches}$$

or, solving to prove the unit of measure of the result.

$$I = \frac{FG}{A}$$

$$I = \frac{24 \times 10}{30}$$

$$I = \frac{24 \text{ inches} \times 10 \text{ feet}}{30 \text{ feet}}$$

$$I = 8 \text{ inches or image size}$$

$$I = 8 \text{ inches}$$

As an example of a typical situation whereby you can make use of the $IA = FG$ formula, suppose you are requested to make a 9-inch photograph of a board 12 feet long. This board is mounted on a wall and the maximum distance from that wall to the opposite side of the room is 20 feet. Is it possible to make this photograph using an 8x10 camera equipped with a 12-inch focal-length lens?

The known values are object size (12-foot board), requested image size (9 inches), and the focal length (12 inches). The unknown factor is the necessary lens-to-subject distance required to make the photograph using this camera. The formula and computations are as follows:

$$IA = FG$$

$$A = \frac{FG}{I}$$

$$A = \frac{12 \text{ inches} \times 12 \text{ feet}}{9 \text{ inches}}$$

$$A = 16 \text{ feet}$$

The required lens-to-subject distance equals 16 feet. The answer to this problem then would be yes, since the required lens-to-subject distance is only 16 feet. This allows the photographer 4 feet ($20 - 16 = 4$) in which to set up and operate the camera.

PROBLEM 3: An image 4 inches long of an object 8 feet high at a distance of 20 feet is focused on the film plane. What is the lens focal length?

$$IA = FG$$

$$F = \frac{IA}{G}$$

$$F = \frac{4 \times 20}{8}$$

$$F = 10, \text{ or focal length equals 10 inches}$$

Another problem to illustrate the application of the proportion $I:F=G:A$ follows: When using an 8x10 camera equipped with a 12-inch focal-length lens to obtain a 9-inch image from a distance of 16 feet, you can photograph an object of what maximum length? To solve this problem, you should have the formula and computation as follows:

$$G = \frac{IA}{F}$$

$$G = \frac{9 \text{ inches} \times 16 \text{ feet}}{12 \text{ inches}}$$

$$G = 12 \text{ feet}$$

The maximum length of an object that can be photographed with this 12-inch lens, using an image size of 9 inches from a distance of 16 feet, is 12 feet.

Using Various Lenses

It is possible for you to take all your pictures with only one lens. But before long, you will want to expand your range of lenses to become a more versatile photographer.

Within our Navy, 35mm single-lens reflex (SLR) cameras are coming into ever-increasing use. Every Navy photo unit should have several SLR cameras, and

by and large, they are the cameras most used. For these reasons we shall limit our discussion of using different lenses to 35mm SLR cameras. Keep in mind, however, that the *concepts* discussed apply equally well to all cameras and lenses no matter what their size of focal length may be.

Lens interchangeability is one of the great features of SLR cameras. SLR cameras have focal-plane shutters directly in front of the film so the lens can be removed and replaced at any time without fogging the film. Most makes of lenses and cameras are designed with their own exclusive method of lens attachment. Some use screw-in lenses; others use bayonet mounts. And each lens is either incompatible with or requires special adapters to fit other brands.

Lenses for 35mm cameras are generally divided into two groups. The first group is a basic set of three. These are moderately wide angle, normal, and moderately long focal length. The second group is a variety of special lenses. This group of special lenses includes ultra-wide angle, extreme telephoto, shift lenses, variable focal length (ZOOM), and macro lenses.

Most experienced Navy photographers who use a 35mm camera agree that a basic set of lenses is well worth having. Their choice of actual focal-length lenses is a far more personal decision. One may prefer a 35mm wide angle and a 200mm long focal length. Another photographer may prefer a 28mm wide angle and a 135mm long-focal-length lens.

There are two occasions for changing lenses. The first is when your viewpoint or camera position cannot be changed. Imagine that you are aboard a ship and taking pictures of the coastline. To get a broader view of the coastline, you cannot move your camera position because the ship is on course. The solution is to change to a wide-angle lens. To get a closeup shot of an important section of the coastline, you obviously cannot move closer to the shore. You must change to a long-focal-length lens to bring the important section of coastline closer to you. The second time you would change lenses is when a different focal-length lens enhances your subject (remember the cow having lunch). This depends on your ability to change camera viewpoint, forward and backward, so you can fill the picture area with the subject. Using a long-focal-length lens reduces depth of field, makes the apparent effect of linear perspective less dramatic, and decreases the *apparent* distance between different subject planes.

The use of a wide-angle lens has the opposite effect. It increases depth of field, exaggerates apparent linear

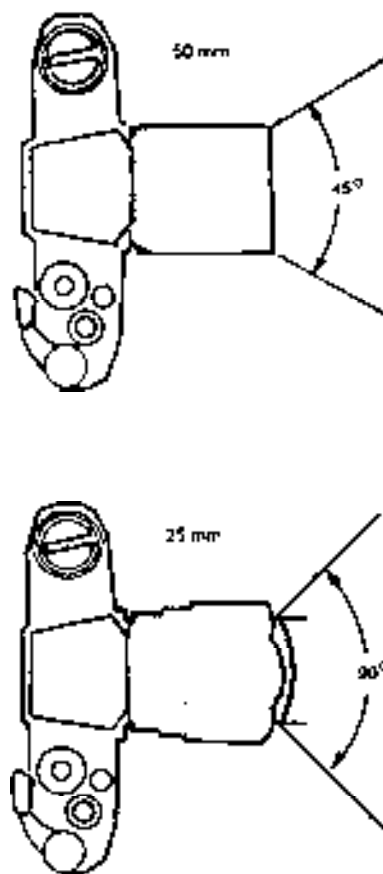


Figure 1-33.—Comparison of angle of view on camera lenses.

perspective, increases the apparent distance between subject planes, and may introduce image distortion.

As the focal length increases, the image gets bigger and the angle of view becomes smaller. You cannot change the picture area produced on film by a 35mm SLR camera. The picture area is always 24mm by 36mm. Lenses for 35mm SLRs (except some ultra-wide lenses) all produce an image that completely fills the picture area. Along lens magnifies the subject image and not as much of it fits into the film frame area (fig. 1-33). Thus long-focal-length lenses cut down the area you see around the subject, and they, therefore, have a small *angle of view*.

Short-focal-length lenses produce much smaller images from the same camera position than long lenses. The small image of a subject looks farther away and much more area surrounding it can be included in the picture area. A short-focal-length lens gives a wide-angle view. This is why short-focal-length lenses are called wide-angle lenses.

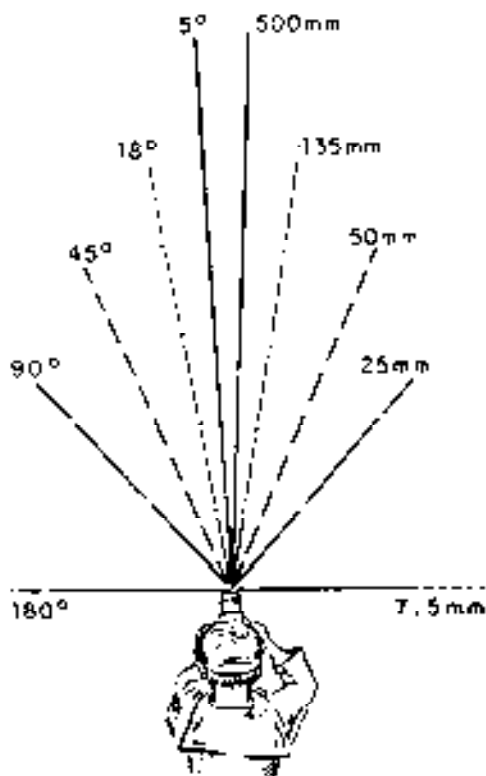


Figure 1-34.—Angle of view.

In figure 1-34, the diagram shows the different angles of view you can expect from several common focal-length lenses used with 35mm SLR cameras.

Table 1-4 can be used in selecting lenses for one film format that provides the same angle of view produced by another film format and the lens focal-length combinations.

To use this table, select the lens for one film format that provides the same angle of view produced by another film format and focal-length combination. Example: The angle of view of a 360mm lens on a 4x5 camera is 19 degrees. To match the angle of view approximately with a 35mm camera, a 105mm lens is needed. The normal focal-length lens (50mm) for a 35mm camera provides an angle of view of 40 degrees (width). You can see from the table that the normal focal-length lens for a medium format camera (2 1/4" x 2 1/4") is an 80mm lens because it provides approximately the same angle of view (38 degrees).

TYPES OF LENSES

There is a large variety of lenses available for most hand-held cameras on the market today. These lenses are used for different photographic applications. The types

of lenses you may use in the fleet are as follows: wide angle, ultra-wide angle, rectilinear, macro, normal focal length, telephoto, and variable focal-length, or zoom, lenses.

Wide-Angle Lenses

Anything less than 40mm in focal length (for a 35mm camera) is considered a wide-angle lens. Again, we are speaking of the lens focal length as it applies to 35 mm cameras.

A wide-angle (short focal length) lens is designed to take in a large view and is indispensable when working in confined spaces or when you want to cover a large area. Wide-angle lenses have their own qualities, causing *apparent*, repeat, *apparent*, distortion and foreshortening of perspective, so objects close to the lens *appear* large, while background objects diminish in size dramatically.

Many photographers choose a 28mm lens for their 35mm camera wide-angle lens. This is partly because this focal length allows the typical wide-angle effects without introducing apparently distorted images, such as *bent walls*. As well as providing a wider field of view, wide-angle lenses also produce great depth of field at all apertures.

Short-focal-length lenses do not, as is often believed, actually change perspective. The close view-points allowed by wide-angle lenses can cause perspective effects that *appear* distorted but are perfectly natural ways of seeing objects at close range.

A wide-angle lens magnifies features nearest the camera. To fill the frame when photographing people with a wide-angle lens, you must move in close. This causes a distorted view. But wide-angle lenses can be used when special effects are desired, such as deliberate distortion, when exaggeration of features or when surrounding areas add to the viewer's understanding of the subject.

A lens hood, or lens shade, is an important accessory for any lens. It is especially important with a wide-angle lens. Strong light can easily cause flare when reflected internally between the elements of the lens, and unless you take proper precautions by using a lens hood, your pictures may be spoiled. Sometimes you are able to see flare or ghosting in the viewfinder, but more often than not, it is not visible to the human eye, and it only shows up on the processed film.

Another precaution to take with wide-angle lenses concerns filters and other accessories attached to the

Table 1-4.-Choosing Lenses to Match Angle of View

Film Format	Focal Length Lens (mm)	Angle of View, Long Film Dimension (degrees)	Angle of View, Short Film Dimension (degrees)
16mm	10 17 25 50 75	52 32 22 11 7.5	41 25 17 8.5 5.6
35mm	15 20 24 28 35 50 90 105 135 200 300	100 84 74 65 54 40 23 19 15 10 6.9	77 62 53 46 38 27 15 13 10 6.9 4.6
2 1/4" x 2 1/4"	30 0 50 80 120 150 250 350	85 69 58 38 26 21 13 9	85 69 58 38 26 21 13 9
4" x 5"	65 75 90 150 210 300 360	85 77 67 44 32 23 19	72 65 56 35 25 18 15
8" x 10"	165 210 300 360 420	73 61 45 38 33	61 50 36 30 26

front of the lens. When you use more than one filter or a particularly thick filter, you may end up with vignetting. This results in the edges of the image being cut off, particularly at wide apertures. When using wide-angle lenses, you should use lens hoods and filters designed for the particular lens in question.

Ultra-Wide-Angle Lenses

Many ultra-wide-angle, or short-focal-length, lenses are known as *fish-eye* lenses. These lenses have a focal length of less than about 17mm (for a 35mm camera). The ultra-wide-angle view of these lenses results in image distortion. Straight lines appear curved and curved lines may appear straight.

The use of fisheye lenses makes objects appear to diminish in size rapidly as the distance from the camera increases and objects which are close to the camera appear far apart.

Depth of field with a fisheye lens is very great. They often give depth of field that extends from only inches in front of the lens to infinity so that focusing is not necessary.

Rectilinear Lenses

A rectilinear lens, despite its wide angle, has normal rectilinear corrections so straight subject lines are straight in the image and there is no obvious distortion. The width of objects close to the camera appears emphasized because of the steep perspective produced by a rectilinear lens.

Macro Lenses

A macro lens is used for closeup photography and is a valuable lens for any imaging facility to have. These lenses come in various focal lengths and are capable of producing up to one half or even life-size 1:1 images. For example, a 100mm macro lens produces a 1:1 image just as a 50mm macro does. With a 100mm lens, you do not have to get as close to the subject. This is especially useful when you are taking pictures of live creatures or doing closeup medical photography.

Normal Focal-Length Lenses

The standard or normal focal-length lens for a 35mm SLR camera is from about 40mm to 58mm (the most common being 50mm). This focal length gives a field of view roughly the same as that over which the eye gives satisfactory sharpness—thus the name *normal*

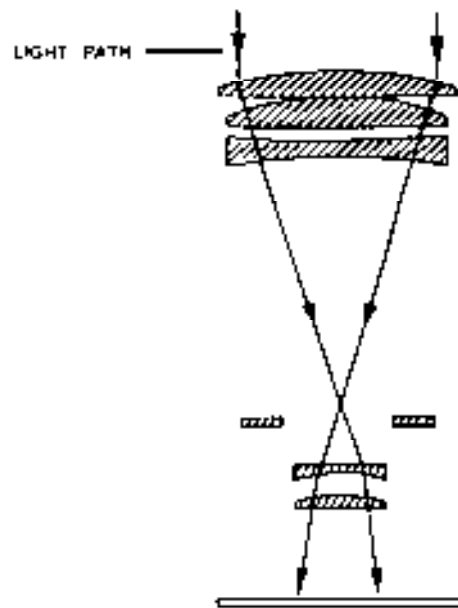


Figure 1-35.—Arrangement of lens elements in a telephoto lens.

focal length. With a normal lens, the angle of view and the image size you see in the viewfinder are normal. That is, you get much the same impression as you would get if you look at the subject with one eye. Many Navy photographers claim, however, that the wider angle of view of a 35mm lens (for a 35mm camera) is preferable. Others maintain that an 85mm focal length is better for general use because it enables the picture space to be filled more easily with subject matter.

A normal lens can be used for making pictures of people if you do not get too close. When you fill the frame with the face of the subject, you get image distortion. It is better to stand farther back and include the shoulders of the subject in the picture. This eliminates distortion.

Telephoto Lenses

A lens with a focal length greater than about 58mm for a 35mm camera is a long-focal-length lens. Most modern, long-focal-length lenses are called *telephoto* lenses because of their compact design. At one time, long-focal-length lenses were essentially a lens at the end of a long tube. A 500mm lens was spaced 500mm from the film, and so on. However, by incorporating other glass elements, the light passing through the lens can be modified (fig. 1-35). This permits the lens barrel to be physically shorter than the lens actual focal length—an arrangement known as telephoto.

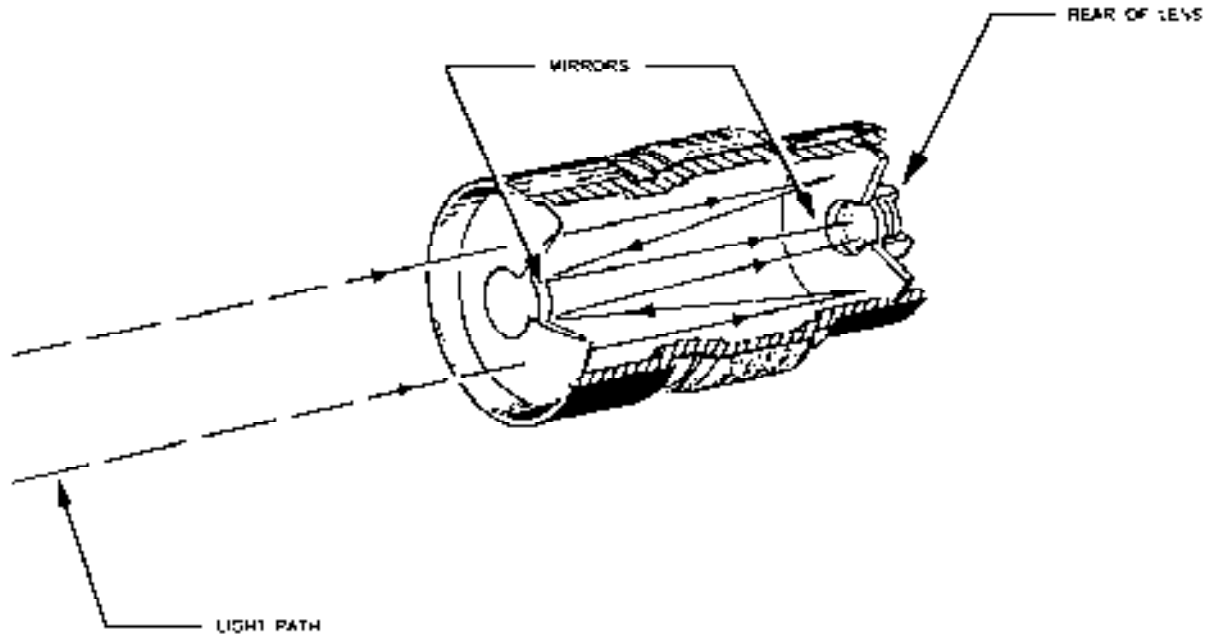


Figure 1-36.—Reflecting telephoto lens.

The overall physical length of a telephoto lens is usually only about one half of its focal length. A basic, long-focal-length lens must be placed one focal length away from the film if it is to form an image of a subject at infinity. In the case of a telephoto (or mirror) lens, the lens-to-film distance is reduced considerably while still retaining the effects of a long-focal-length lens. Thus a 1000mm telephoto lens rear element may only be 500mm away from the film when the lens is set at infinity.

Those 35mm camera lenses that range from about 85mm to 135mm are good for shooting pictures of people. They allow you to shoot from about 6 feet away and still fill the frame with the subject's face. Six feet from the subject is a good working distance. It is not too close for comfort, and it is not so far away that intimacy is lost.

Telephoto compression is the apparent compression of perspective. A telephoto lens does not compress perspective; it only appears that way! Remember, perspective does not depend on the lens being used, but on the position of the camera.

So then, how does a telephoto lens produce the effect of compressed perspective? Several factors are involved:

- ◆ A telephoto lens is used from farther away to obtain the same size image that would be produced by a shorter lens at a closer distance. The more distant camera position produces a flatter perspective. But, because the long lens magnifies the subject, it still produces a normal size image. Thus the looks are flatter than expected.

- ◆ The distance from which the print is viewed also has an effect. An X-times enlargement should be viewed from X-times the focal length of the lens used to make the picture in order for the perspective to appear natural. Therefore, a 6X enlargement of a negative shot with a 50mm lens should be viewed from $6X\ 50mm = 300mm$ or 12 inches, while a picture made with a 500mm telephoto lens and enlarged 12 times should be viewed from 20 feet ($12 \times 500mm = 600 \times 0.04 = 240 \div 12 = 20$ feet). (Note: To convert millimeters to inches, multiply the known millimeters by 0.04.)

A reflecting telephoto lens, the so-called mirror lens, has *folded up* optics. It uses internal mirrors to reflect the light twice. This enables the lens barrel to be much shorter, but because of the mirrors, it must also be much broader. As shown in figure 1-36, light that enters the lens through a glass plate is converged and reflected back by a concave mirror at the back of the lens. This reflected light is directed to a small backward-facing



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Figure 1-37.—Out-of-focus highlights caused by a mirror lens.

mirror lens element at the center of the front glass plate. In turn, the mirror lens reflects the light back through a hole in the concave mirror to a focus on the film.

Mirror lenses have the advantage of long focal length, relatively short physical size, and large aperture. But they also have disadvantages, the main one being that a diaphragm cannot be used and the lens must always be used at maximum aperture. Therefore, exposure must be controlled by the shutter alone or by the use of neutral density filters, or both. Because of this aperture disadvantage, mirror lenses have limited depth of field. Another disadvantage is that out-of-focus highlights record as rings of light (fig. 1-37).

Variable Focal-Length Lenses

A variable focal length, or *zoom*, lens is designed so the focal length can be changed by mechanically moving the elements within the lens. The movement of lens elements, in unison and in precise order, gives a smooth change of image size while maintaining acceptably sharp focus throughout the entire adjustment. The simplified drawing of a zoom lens (fig. 1-38) illustrates how the movement of elements within the lens can

change the focal length while maintaining correct lens-to-film distance.

While only the shortest and longest focal lengths for this particular lens are shown in the drawing, various other focal lengths are possible.

The biggest advantage of a zoom lens is that you have many focal lengths in one single lens. You do not have to change lenses to use a different focal length. Sometimes it is impossible to change your viewpoint to improve a picture. But with a zoom lens you can *zoom* in and out (change focal length) until you get the exact image you want. One disadvantage is the extra bulk and weight of the zoom lenses. There is also some loss in picture quality when compared to the performance of a fixed focal length lens. There are four basic types of wide to telephoto zoom lenses for 35mm cameras:

- *Wide-range* zoom lenses have focal lengths from about 28mm to 80mm. They often take the place of fixed focal-length lenses of 28mm, 35mm, 50mm, and 80mm.
- ◆ *Mid-range* zoom lenses have focal length that do not extend very far on either side of a normal lens focal length. Mid-range zooms for 35mm cameras have a

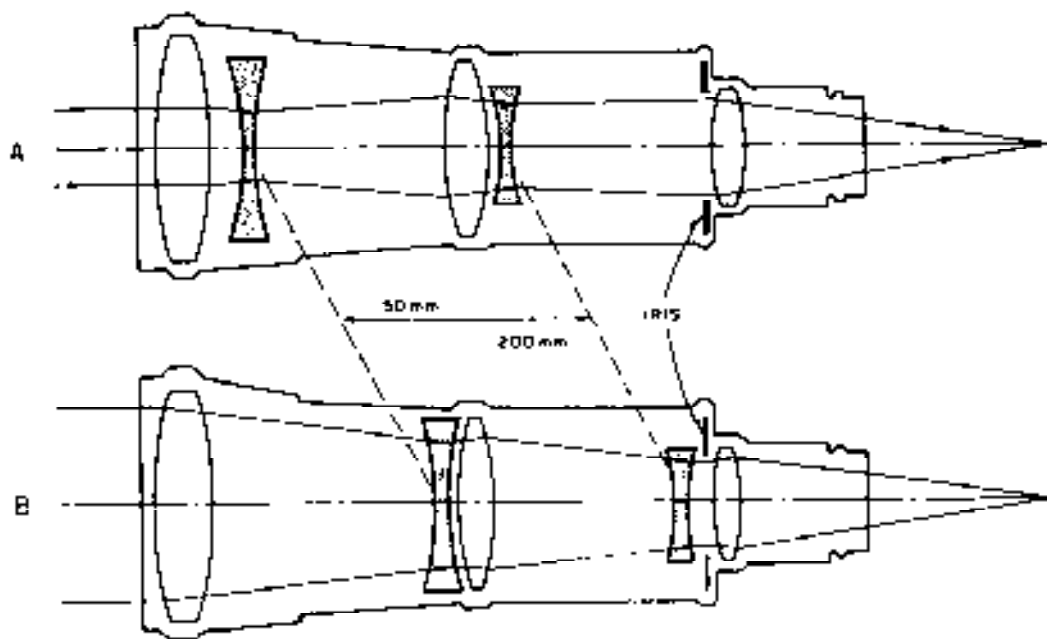


Figure 1-38.—Variable focal-length (zoom) lens.

variable focal length from about 35mm to 70mm. They are usually small and lightweight. They are designed to be used instead of a normal focal-length lens, not to replace a range of focal length lenses.

- *Long-range zoom lenses* start at about 35mm and include the popular 100mm or 105mm focal lengths. They can take the place of four, fixed focal-length lenses: the 35mm, 50mm, 85mm, and 105mm.

- *Telephoto-range zoom lenses* have focal lengths that range from about 50mm to 135mm, 90mm to 230mm, 75mm to 150mm, and even 135mm to 600mm.

The most popular telephoto zoom is from about 80mm to 200mm.

Now you have some basic knowledge of the way light reacts when striking various objects. You also know how it forms an image through a lens. With practice, you will be able to apply these principles in photographic practices. By using various focal-length lenses and aperture settings, you can control image size and depth of field as well as the apparent perspective of your photographs. In the next chapter, light-sensitive materials are discussed. This will enable you to record permanent images.

CHAPTER 2

LIGHT-SENSITIVE MATERIALS

Many substances are affected in some way by light. The light-sensitive substances used in photographic film to record an image are silver salts and are called **silver halides**. The silver halides react to ultraviolet radiation, violet, and blue light only; however, they can be made sensitive to other colors of light and infrared radiation by the addition of dyes. Depending on the amount of light and the type of silver halide, the light produces a visible or invisible change in the halides of a film or printing paper. An invisible change is made visible by development.

Photographic films and papers are composed of two basic parts: the emulsion and the base, or support. The emulsion is the light-sensitive portion of a film or paper that records the image. The emulsion contains the silver halides and any special sensitizing dyes suspended in a binder of gelatin. The gelatin holds the silver halides evenly dispersed and prevents action by a developer until the silver halides have been made developable either by exposure to light or chemical action. Also, the gelatin acts as a sensitizer for the silver salts.

In photographic films and papers, the primary purpose of the base is to support or hold the emulsion in place. The base, or support, may be transparent or opaque, depending upon how the recorded image is to be used. A transparent base is used for transparencies that are viewed by transmitted light and for negatives that are printed with transmitted light. An opaque base is used for prints that are viewed by reflected light.

The latest state of the art in light-sensitive materials used in photography is the use of the electronic medium. Video disks do not contain an emulsion or a base. When electronic mediums are used, light is converted to electrical impulses and these impulses are stored magnetically on a tape or disk. Since it is the camera itself that converts light to electrical impulses, the recording medium and all stages of the photographic process can be carried out in normal room light.

BLACK-AND-WHITE FILM

The characteristics and use of black-and-white film depend largely on the actual construction of the emulsion. These characteristics include the following: the degree of sensitivity to light, response to various

colors of light (color or spectral sensitivity), contrast, exposure latitude, emulsion latitude, and emulsion definition.

There are many types of black-and-white films available. Each type differs somewhat from the others. You should become acquainted with the characteristics of films. This knowledge is helpful in selecting the film most suitable for each photographic assignment.

EMULSION SENSITIVITY TO LIGHT

The silver halides and sensitizing dyes of most film emulsions are very sensitive to small amounts of light. This light causes invisible changes to the emulsion and is called the **latent image**. The latent image can be physically made visible by the chemical step of development. The extent of the reaction to the light of the emulsion is affected greatly by the size of the silver halide grains and the amount of light reaching the film. The inherent property of a film emulsion to respond to light is termed *film speed*.

Film Speed

Film speed is important, since it is related to the amount of exposure required to produce an acceptable image. Emulsions are rated as slow, medium, or fast, depending on the amount of light required to produce an image satisfactorily. Fast emulsions require less light to produce an acceptable image than slow emulsions.

To calculate the exposure for a film emulsion accurately and consistently with a light meter, the manufacturer has developed a system of rating emulsion speed. The rating system used is the ISO film speed system. ISO film speed is a numerical value assigned to an emulsion used for determining exposures.

The International Standards Organization (ISO) is a federation of all the national standard bodies of the world. It has approved a uniform set of film speed standards. The standards call for a universal expression of both arithmetic and logarithmic speed values with the ISO designation. The ISO designation generally looks like the following:

ISO 100/21°

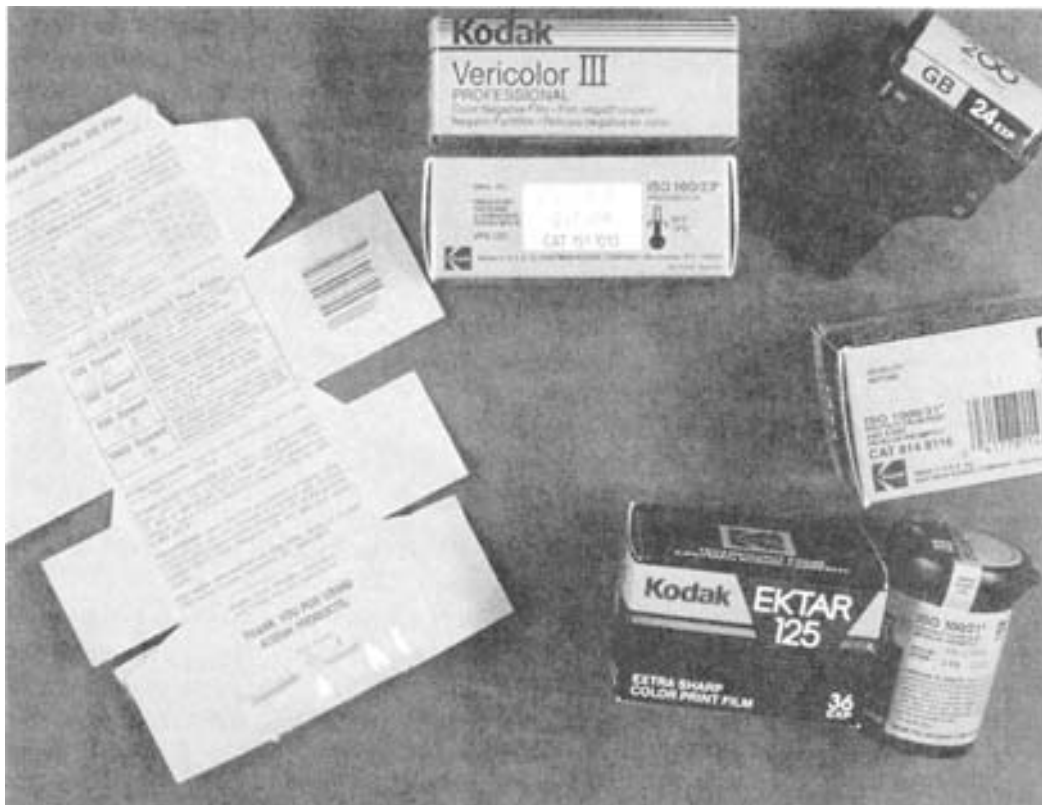


Figure 2-1.—ISO of film.

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The ISO assigned to a film is labeled on the packaging material and on the film cassette or paper backing (fig. 2-1). Some types of black-and-white films are assigned one ISO number; others are assigned two or more. Whether one or more film speeds are assigned depends on whether the film responds differently to different colors or color temperatures of light. Often, this results in a film having one speed for daylight and another for tungsten light. The ISO for a particular film is valid for calculating correct exposure only when that film is developed as recommended by the manufacturer.

An exposure index is another numerical value assigned to some films for exposure calculation. The exposure index is a more accurate method of film speed, because it is determined by processing a particular film through the actual process in an imaging facility. Exposure indexes are generally assigned to films used for copying or for technical applications.

SPECTRAL SENSITIVITY.—The response of an emulsion to specific colors of light or radiant energy is termed *color* or *spectral sensitivity*. You already know, from our earlier study of light in chapter 1, that the visible spectrum is made up of violet, blue, green, and

red light. When speaking of film or emulsion sensitivity, you are also referring to its sensitivity to ultraviolet and infrared radiation. Spectral sensitivity of an emulsion simply means that the emulsion is sensitive to some energy of the electromagnetic spectrum. Also, emulsions have color sensitivity, which means they are sensitive to one or more colors of the visible spectrum. In this chapter, the terms *color sensitivity* and *color response* are used interchangeably. Color sensitivity or color response refer to ultraviolet and infrared radiation as well as visible light.

All silver halides are sensitive to ultraviolet radiation, violet, and blue light. *Color-blind emulsion* is the term given to emulsions sensitive only to these radiations. The addition of sensitizing dyes to silver halides can increase the sensitivity of emulsions and extend their sensitivity to green and red light and infrared radiation. Increasing the color sensitivity of an emulsion to other than ultraviolet, violet, and blue is called dye, color, or optical sensitization.

The color sensitivity of a black-and-white film is an important characteristic, since it controls the way colored objects record as tones of gray in the negative

or print. The color sensitivity determines how the film is classed. There are four general classes of black-and-white film emulsions. The four classes are as follows: colorblind (monochromatic), orthochromatic, panchromatic, and infrared. Some of these emulsions respond to a wide range of wavelengths of light. Others respond to only a narrow band of wavelengths. Light-sensitive emulsions are sensitive to all wavelengths of ultraviolet radiation. For all practical purposes, the general classes of emulsions are considered insensitive to the shorter wavelengths of ultraviolet (UV) radiation. This is because glass lenses and the gelatin in most film emulsions completely absorb the shorter wavelengths of ultraviolet radiation. When UV is to be used for photography, a special film with a thin emulsion is required.

Color-blind Emulsions.—Black-and-white color-blind emulsions are sensitive only to UV radiation, violet, and blue light. Green and red objects record only as clear areas in the black-and-white negative and reproduce as dark areas in the print. Color-blind films are used primarily for copying and graphic arts photography and may be assigned three or more ISO values; for example, ISO/50 for daylight, ISO/8 for tungsten light, ISO/20 for white-flame arcs, and ISO/12 for pulsed xenon.

Orthochromatic Emulsions.—Orthochromatic emulsions are sensitive to ultraviolet radiation, violet, blue, and green light. The sensitivity to green light is gained by the addition of a sensitizing dye to the color-blind silver halides. The emulsions provide an approximate correct reproduction of blue and green objects as corresponding tones of gray in a print; however, red objects record as clear areas in the negative and black areas in the print. Since the emulsion is not sensitive to red. Various orthochromatic films with different degrees of contrast, color sensitivity, and emulsion speed are available. Their trade names usually contain the word *ortho*. Orthochromatic emulsions are used primarily for copying and graphic arts photography.

Orthochromatic emulsions that may be used in either daylight or tungsten light are assigned two separate ISO film speeds. This is because these emulsions are highly sensitive to the predominantly blue colored daylight and less sensitive to the tungsten light that has a higher content of red light.

Panchromatic Emulsions.—Panchromatic emulsions are sensitive to UV radiation, violet, blue, green, and red. The emulsion spectral sensitivity to green and red light is gained by adding sensitizing dyes to the

color-blind silver halides. Panchromatic film of varying degrees of contrast, color sensitivity, and emulsion speed is available. Panchromatic emulsions are used for copying, portraiture, and general black-and-white photography.

Panchromatic emulsions are assigned only one ISO film speed. This is because panchromatic emulsions are sensitive to red light and have an almost equal response to predominately blue-colored daylight and predominately red-colored tungsten light.

Infrared Emulsions.—Infrared (IR) emulsions are sensitive to UV radiation, violet, and blue light, with little or no sensitivity to yellow-green light but with additional sensitivity to red and IR radiation. The sensitivity to infrared radiation is gained by adding a sensitizing dye to the color-blind silver halides. Infrared emulsions are commonly used for aerial and medical photography as well as forensic photography (photography used for evidence). For best results a black-and-white UV film should be exposed only with IR radiation. To prevent any IR radiation or visible light from affecting the infrared emulsion during exposure, you must use a dark, red filter over the camera lens.

Since infrared radiation does not focus at the same point as visible light, a lens focus adjustment is necessary for critical focusing. Most lenses have a calibrated infrared focusing position on the focusing scale. This position is usually marked by a small, red dot or the letter *R* in red.

Determining a useful exposure index becomes a problem with infrared film, because exposure meters are calibrated for visible light and similar light sources can emit different amounts of infrared radiation. When using infrared film, you should make trial exposures for each particular film and photographic situation.

Contrast

In the development process, the silver halide grains in a black-and-white film exposed to light remain in the film. These grains form the image of the original scene. The colors of the scene are recorded in the negative as densities of gray instead of appearing as their original colors. These densities of gray can range from very dense to very thin. This depends upon the brightness of the objects in the scene, their color, and the color sensitivity of the film. The ratio of the maximum to the minimum brightness of objects in a scene is referred to as the scene brightness range. Most long scale black-and-white films are capable of recording scene brightness ranges up to 128:1. In a negative, a

light-colored object records as a heavy-density (dark) area, and a dark-colored object records as a low-density (thin) area; therefore, a negative image is reversed compared to the original scene. This reversal is produced by a bright object in the scene reflecting more light than a darker object. The greater amount of reflected light from the brighter object affects more silver halides in the emulsion.

The portions of the negative where the most silver halides have been affected are referred to as **HIGHLIGHTS**. The portions that are least affected are referred to as **SHADOW AREAS**. The light reflections from objects other than the brightest and darkest are referred to as **MIDTONES**.

The amount of metallic silver deposit in any portion of a negative is referred to as **density**. The amount of light that a negative transmits in a given period of time is controlled by the density of the metallic silver deposits. Therefore, density is used to describe the light-stopping ability of a negative.

The difference in densities between areas in a negative is known as **contrast**. The total contrast (density range) of a negative is defined as the difference in density between the least-dense shadow area and the most-dense highlight area in a negative.

Emulsion Latitude

The inherent ability of a black-and-white film to record a range of scene brightness differences as differences in density is termed *emulsion latitude*. Normal- and low-contrast emulsions can record a wide range of scene brightness values and are considered to have a wide emulsion latitude or long scale. High-contrast emulsions record a short range of scene brightness values and are considered to have a narrow emulsion latitude or short scale.

Exposure Latitude

The amount the exposure can be varied (increased or decreased) from the ideal exposure and still provide an acceptable negative is termed *exposure latitude*.

The least amount of exposure that records sufficient shadow detail generally provides the best quality negative and is considered the ideal exposure. The use of a determined exposure index leads to the ideal exposure for a particular film and process combination. Generally, the use of the assigned ISO speed provides acceptable results.

Emulsion Definition

Several factors, including graininess, resolving power (resolution), and acutance, affect the definition or capability of an emulsion to produce a clear, sharp image.

GRAININESS.—The negative image consists of nearly an infinite number of density deposits of metallic silver. To the naked eye, these grains of silver appear as a smooth, continuous deposit; however, when the image is magnified significantly, a speckled, granular, or mottled effect becomes apparent. This appearance of the enlarged image is called **graininess**.

The graininess of a negative depends upon the size of the silver halides in the emulsion, the exposure the emulsion received, and the clumping action of the metallic silver grains during development. Although each emulsion has an inherent grain size, the graininess effect in a negative can be minimized by giving the film correct exposure and proper development. As a general rule, slower speed emulsions have a finer grain (a smaller grain size) than faster speed emulsions.

The Eastman Kodak Company uses modern tabular, or T-grain, technology in some of their emulsions. In doing so, flat, tabular crystals are used which are very efficient in absorbing light. In T-grain emulsions, fewer silver halide crystals are needed, because the crystals have a relatively large surface area for light to strike, but are thin and contain a small amount of silver halides. These properties provide higher resolution and lower graininess compared to other films with the same relative film speed.

Not all black-and-white films form the final image in black metallic silver; for example, Ilford's XP-1 black-and-white film produces a dye image. The advantage of this technology is the film can be processed in color-processing chemicals along with color film and then printed on black-and-white paper.

RESOLVING POWER.—This is a term used to define the ability of an emulsion to record fine detail. The resolving power, or resolution, of an emulsion is expressed as line pairs per millimeter. Resolving power is determined by photographing a lined test chart at a greatly reduced size then counting the lines present in one millimeter of film.

ACUTANCE.—This is the ability of an emulsion to produce sharp edges between image density differences. Do not confuse this with the ability of an emulsion to produce sharp images controlled by lens focus. Although an image is in focus, the line between a

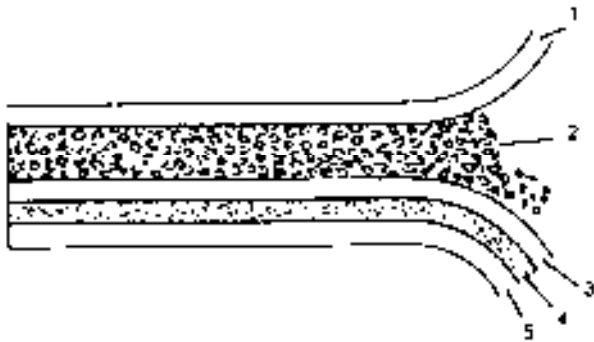


Figure 2-2.-Cross section of black-and-white film.

highlight area and a shadow area is not perfectly sharp. This is because the high-density area tends to “bleed” onto the low-density area due to the scattering or diffusing of light in the emulsion during exposure.

CONSTRUCTION OF BLACK-AND-WHITE FILM

Light-sensitive materials are composed of two basic parts: the emulsion and the base. The emulsion is the light-sensitive portion that records the image. The base is the support to which the emulsion is coated. Also, negative materials have additional layers that perform a special purpose. They are as follows: overcoating, antihalation backing, and noncurl coating (fig. 2-2). The purpose of the five parts of photographic film are as follows:

1. Overcoating—The overcoating protects the film from friction, scratches, or abrasions before development. The overcoating is a clear, gelatin layer that is sometimes called the antiabrasion layer.
2. Emulsion—thin layer of gelatin that suspends and supports the light-sensitive silver halides.
3. Base—This supports or holds the emulsion in place. The base may be transparent, translucent, or opaque, depending upon how the recorded image is to be used. The base is generally made of a cellulose acetate.
4. Antihalation backing—The antihalation backing prevents light from reflecting from the base back into the emulsion. The antihalation dye is sometimes incorporated in the anticurl backing. The dye used to eliminate halation is a color to which the emulsion is least sensitive. This dye is water soluble and is completely dissolved during processing.
5. Noncurl coating—The noncurl coating is a hardened gelatin, about the same thickness as the

PROTECTIVE OVERCOATING
BLUE SENSITIVE EMULSION LAYER - PRODUCES YELLOW DYES
YELLOW FILTER - ABSORBS BLUE LIGHT
GREEN SENSITIVE EMULSION LAYER - PRODUCES MAGENTA DYES
RED SENSITIVE EMULSION LAYER - PRODUCES CYAN DYES
BASE
ANTIHALATION BACKING
NONCURL COATING

Figure 2-3.-Cross section of ordinary color negative film.

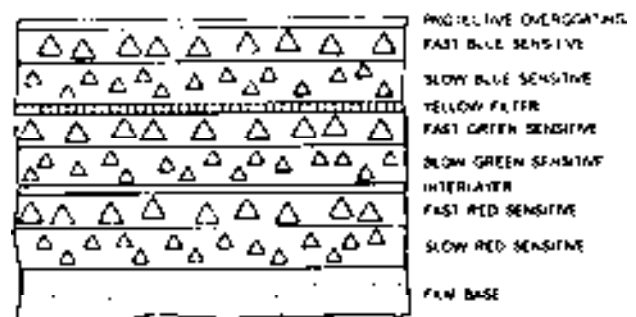


Figure 2-4.-Modern high-speed color film.

emulsion, and is applied to the back of the film. A film emulsion swells when wet and shrinks when dry. This contraction produces a strain on a film base because it is highly flexible. The noncurl coating prevents the film from curling during the drying process.

COLOR FILM

Modern color films are constructed much the same as black-and-white film, but color films consist of three separate emulsions on a single film base. Each of the three emulsion layers records one of the three additive primary colors—red, green, or blue. The top emulsion layer is sensitive to blue light and produces yellow dyes. Between the top emulsion layer and the middle emulsion layer is a yellow filter (fig. 2-3). The yellow filter absorbs the blue light that would otherwise affect the middle and bottom emulsion layers. During processing, this yellow filter is dissolved. The middle emulsion layer records green light and produces magenta dyes. The bottom emulsion records red light and produces cyan dyes. Many of the modern high-speed color films have fast and slow emulsion layers for each primary color (fig. 2-4).

In some color films where tabular-grain (T-grain) emulsions are used, high speed and increased sharpness are combined. When these films are manufactured, the overall thickness of the film is reduced. By reducing the overall thickness, you also reduce the scattering of light within the film, resulting in improved sharpness. Also, double-emulsion layers, one fast and one slow, may be incorporated to improve film speed in color films.

Each emulsion layer of color film either has an incorporated dye coupler or a dye that is put into the emulsion during processing. A dye coupler is a chemical that produces a dye by combining with the oxidized products that occur during color developer.

Color Negative Film

A color negative film records a scene in image densities opposite to the brightness of objects in the scene—the same as a black-and-white negative film. Color films can be recognized because they contain the suffix “color,” such as Vericolor, Kodacolor, and Fugicolor. These color films are used when a print is the final product. Most color negatives (other than color film used for aerial photography) have an orange mask. This orange mask increases the color separation that reproduces colors more accurately in the final print.

During development, colors are formed in the emulsion that are complementary to the color of the original scene; for example, a red object in the scene is recorded as cyan in the negative. It is a combination of yellow, magenta, and cyan that records all the other colors that you see in the scene. Color dyes in the emulsion layers control the colors of light passing through the color negative.

Color negative film images can be printed on color positive materials, such as color paper and color print film, to produce color prints or color transparencies. Color negatives can also be printed on a special panchromatic black-and-white paper to produce black-and-white prints.

Color Reversal Film

Color reversal films produce positive images in densities directly proportional to the reflective brightnesses of objects and in the same colors as those in the original scene. Reversal films are recognized by the suffix “chrome” in their names, such as Ektachrome, Kodachrome, and Fujichrome.

The positive image of most color reversal film is produced by a two-stage development process. This

process causes chemical fogging and color developing of the portions of the silver halide emulsions that were not affected by camera exposure or the first black-and-white developer. Like color negative film, color reversal film has three emulsion layers that are sensitive to blue, green, and red light and produces yellow, magenta, and cyan dyes, respectively. The film contains dye-forming chemicals that are put into the emulsion layers during manufacturing. A color developer produces three dye images in the emulsion layers. The three dye images in a developed color reversal film control the colors of light passing through the film.

Kodachrome film does not contain dye-forming chemicals in the emulsion layers. They are introduced during processing from three separate color developer solutions. Kodachrome film has high resolving power and fine grain and produces a fine image. Processing Kodachrome film is a complex operation and can only be performed by a Kodak processing plant.

Developed color reversal film can be used as a transparency (slide) for direct viewing, printed directly onto a color reversal paper, copied on a black-and-white film for producing black-and-white prints, or copied to a color internegative (copy negative) for producing color prints.

Color Balance

Color balance is the acceptable relationship among the three color images in a positive color print or slide. This means that when the color print or slide looks correct, color balance has been achieved.

To help achieve this acceptable relationship, the manufacturer balances color film emulsions for exposure with a specific Kelvin temperature (K). Remember, daylight usually has a higher content of blue light than red light, while tungsten illumination usually has a higher content of red light than blue light. To compensate for the lower proportion of red light in daylight, the manufacturer balances color films for daylight, so they have a higher sensitivity to red light than to blue light. To compensate for the lower proportion of blue light in tungsten illumination, the manufacturer balances color films for tungsten illumination, so they have a higher sensitivity to blue light than to red light.

Generally, color films are referred to as daylight (outdoor) or tungsten (indoor), indicating their broad use without filters. Specifically, daylight films are balanced for use in sunlight or with an electronic flash

that averages approximately 5400 K. Tungsten films are balanced for use with illumination of 3200 K without filtration.

The Kelvin temperature of the exposing light for reversal films is much more critical than the color of the exposing light for color negative films. When an exposing light is used other than that for which color negative film is balanced, adjustments to the filter pack can be made during printing to achieve proper color balance. With color reversal film, however, a slide is usually the final product. When the color of the exposing light is other than that for which the film is balanced, the transparencies are off-color. You should strive to expose all color films with the color light for which the films are balanced.

Although color films have three separate emulsions, only one ISO film speed is assigned. An ISO film speed for color film is most accurate when the illumination used is the one for which the film is balanced.

Amateur and Professional Color Films

Much of the color film used in the Navy is manufactured by Eastman Kodak Company. Kodak markets color films for both professional and amateur photographers. Color films intended for use primarily by professionals are identified by the word *professional* in the name; for example, Kodak Vericolor III Professional Film, Type S (VPS).

Both professional and amateur films have similar color quality, sharpness, and granularity characteristics. Also, they have emulsions made up of many different chemicals that tend to change slowly with time. Starting from the day they are made, all color films begin to change; and as the films age, their color balance changes.

Amateur films are manufactured to age and reach a peak color balance much later than professional films. The manufacturer allows for the time amateur film will be in storage, on the store shelf, and in the camera before it is developed. The ISO speed assigned is adequate for calculating exposure for normal picture-taking situations.

Professional films are manufactured so they are very near their optimum color balance at the time they are shipped from the factory. These films should be kept refrigerated or frozen until shortly before use. Refrigeration keeps film near the optimum point until used and provides the photographer with confidence in consistent results. Precise film speeds are provided for

professional films. The film is intended for prompt processing to prevent any significant shift in color balance after exposure.

If you require optimum color balance and precise film speed within about 1/6 f/stop professional film is appropriate for your work; however, when you intend to be away from home base for an extended period of time without refrigerated storage or processing facilities, amateur film should be your choice.

Instant Picture Film

Currently, the only manufacturer of instant picture film is Polaroid. There are two basic types of instant picture film: peel apart and integral. After exposure and removal from the camera, peel-apart film must be timed while the film develops. After it has developed for the specified period of time, the negative backing is peeled away and discarded. Integral films develop outside the camera and have no negative backing to be removed.

Instant picture color films are tripack materials with built-in processing. Peel-apart film uses a system whereby the exposed silver halides develop to a metallic silver negative. When no metallic silver is present, dyes pass to form the color image. Integral films use a reversal process in which the areas of unexposed silver halides are the locations where the dyes are produced to form the positive image.

Instant picture film is a very useful medium in an imaging facility, particularly when still electronic technology is not available. Instant picture film is used commonly for identification and passport photographs, but it is also valuable in determining test exposures. Before you make your final exposures on conventional film, a Polaroid photograph can be taken to confirm composition, lighting, and exposure.

FILM SIZES

There are two types of film formats used commonly in photography. They are roll film and sheet film. Both formats come in a variety of sizes.

Roll Film

All roll film is packaged so the film can be loaded and unloaded from a camera in daylight. Number 120 film has a paper backing that prevents the film from being exposed in daylight; 35mm film is wound in a lighttight cassette that prevents the film from being exposed by ambient light.

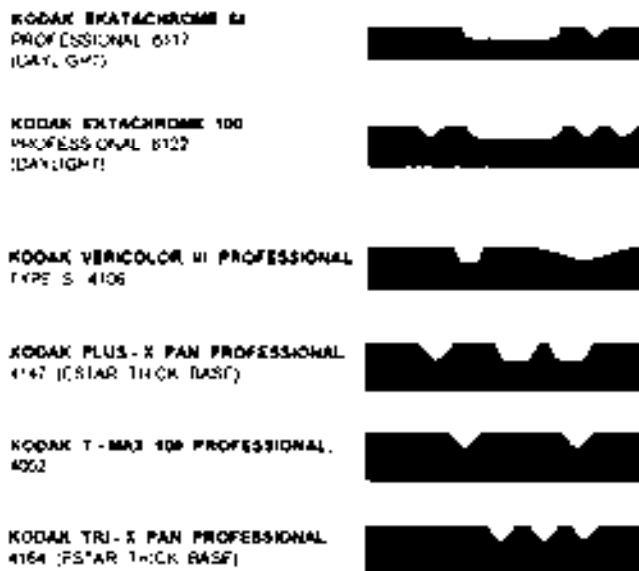


Figure 2-5.—Notch codes used to identify the type of film.

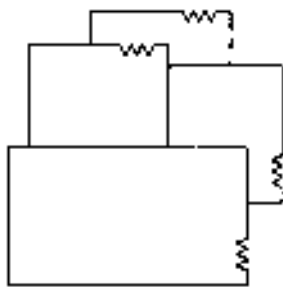


Figure 2-6.—Location of notch code that indicates the emulsion is toward you.

The most popular medium-size format film is No. 120. This film, depending on the camera format, provides negatives that are 6x6 cm (2 1/4 x 2 1/4 inches), 4.5x6 cm, or 6x7 cm. No. 220 roll film is used for making the same size negatives, but because most of the paper backing is eliminated, the roll is longer than a 120 roll and provides twice as many frames as 120 film.

Still picture 35mm films come prepackaged in cassettes in lengths for producing 12, 20, 24, and 36 frames per roll. Also, 35mm films come in rolls 100 feet long that can be bulk-loaded into reusable cassettes.

Sheet Film

Sheet or cut film is made in a variety of sizes from 4x5 to 11x14 inches and larger. The most common sizes are 4x5 and 8x10 inches. Most sheet film has no paper backing and must be loaded into and removed from film

holders in the darkroom in total darkness or under the appropriate safelight. Eastman Kodak does market the Kodak Readyload Packets that provide two sheets of film in a paper packet. These packets can be loaded into a Kodak Readyload Packet film holder or a Polaroid film holder, Model 545. The Kodak Readyload Packets are available only in 4x5 format.

Most sheet films have reference notches in one edge of the film. In the dark, this allows identification of the film type and the emulsion side of the film. Every film type has a different notch code (fig. 2-5). The emulsion side of the film is toward you when the notches are along the top edge in the upper right-hand corner, or on the bottom right edge in the lower right-hand corner of the film (fig. 2-6).

For those sheet films that do not have notches, the emulsion side of the film can be identified under a safelight. The emulsion side is lighter in color than the base side. If the emulsion side of the film must be identified in total darkness, wet your lips and place the edge of the film between them. The emulsion side of the film will stick to one of your moistened lips.

FLOPPY DISKS

Although the floppy disks used in electronic imagery are not light sensitive, they are, however, a commonly used image-recording medium. All floppy disks are the same. There are no black-and-white and color floppy disks. The camera and the printer being used determine whether the image is black and white or color. Images are stored as magnetic impulses on compact 2-inch still-video floppy disks.

The pictures are recorded on tracks on a still-video floppy disk. Each picture is recorded either as a FRAME or FIELD (the frame or field mode is selected on the camera). When the frame mode is selected, each picture is recorded on two tracks. Twenty-five images can be recorded on a floppy disk in the frame mode. When the field mode is selected, each picture is recorded on one track. In the field mode, 50 images can be stored on each disk. The result of using one track per photograph is the images are less detailed than those recorded on two tracks (frame mode). The quality of the frame-recorded image is superior to that of the field-recorded photograph. A combination of field and frame images can be stored on the same disk; however, for higher quality use the frame mode.

Sound can also be recorded on a floppy disk. Sound is not recorded on the same track as the image. It is recorded right after the image is recorded. The sound

associated with the picture can be heard during playback

Floppy disks used in electronic imaging can be reused for endless times-the same as any other magnetic recording medium. No chemicals or darkroom techniques are required to produce these images. Once the image is captured on the floppy disk, it can be transmitted over the telephone lines, edited, and printed using a video printer-all under normal room-lighting conditions.

BLACK-AND-WHITE PRINTING PAPER

The performance and use of black-and-white photographic printing paper, like black-and-white films, depends on the characteristics of the paper material. While the many types of photographic papers differ in their characteristics, they all basically consist of the emulsion on a paper support or base. Photographic printing papers (both black and white and color) are manufactured in both various cut sheet sizes, ranging from 5x7 to 20x24 inches and rolls up to 1,000 feet long.

Photographic papers used in Navy imaging facilities are either coated with polyethylene or are resin-coated. These papers are coated on both sides of the base. This clear coating is treated so the paper does not stick to the surface of other prints during processing. Polyethylene-coated papers (manufactured by Ilford) can be marked on with pencils and pens. Coated papers have water-resistant bases that provide short processing times. Most black-and-white papers with these coatings have developing agents incorporated in the emulsion. The developing agents are activated when the paper is exposed to an alkali solution. The characteristics of resin-coated paper make it ideal for machine processing, but they may also be tray-developed in a regular print developer.

The image on black-and-white film is usually negative or recorded in tones of gray in reverse of the reflective brightness values of a scene. When the negative image is projected onto black-and-white paper, the resulting image is positive or recorded in tones of gray relative to the reflective brightness values of the original scene. A negative is usually used or viewed by transmitted light. A paper print (or simply a print) is usually viewed by reflected light and may be referred to as a reflection print or reflection positive.

Emulsion Sensitivity

The emulsions used for printing paper are much slower (less sensitive to light) than most film emulsions.

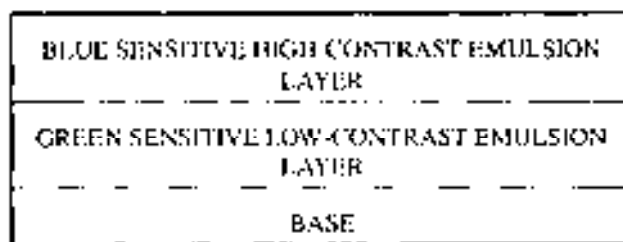


Figure 2-7.—Cross section of variable-contrast black-and-white paper.

A high sensitivity to light is not needed. Prints are often manipulated by providing additional exposure or by holding back exposure to selected areas of the print. If the paper emulsions were fast, exposure times would be extremely short and print manipulation would not be possible.

The color or spectral sensitivity of a paper emulsion indicates the response to specific colors of light or radiation-the same as that for a film emulsion. The terms *colorblind*, *orthochromatic*, and *panchromatic* are also used to describe the spectral sensitivities of paper emulsions. The response of a paper emulsion to wavelengths other than ultraviolet radiation, violet, and blue light is achieved by the addition of sensitizing dyes to the emulsion during manufacturing.

The ranges of sensitivity for all paper emulsions begin in the near-ultraviolet region of the invisible portion of the electromagnetic spectrum. The color sensitivity of undyed silver emulsions extend to blue and blue-green. Panchromatic printing papers are sensitive to ultraviolet radiation, violet, blue, green, and red light. The color sensitivity of a black-and-white paper is NOT a determining factor for selecting a paper to print a specific black-and-white negative. Panchromatic papers, however, are normally used to produce black-and-white prints from color negatives. Color sensitivity DOES determine whether or not a safelight is required and, if so, what color of safelight can be used.

Variable Contrast Papers

Variable contrast papers are used almost exclusively in Navy imaging facilities. The contrast of the print image on variable contrast papers is controlled by the specific color of the exposing light. Variable contrast papers have two emulsion layers. The top layer is a high-contrast emulsion and is sensitive to blue light. The second emulsion layer is a low-contrast emulsion and is sensitive to green light (fig. 2-7). When a normal contrast negative is exposed through a variable contrast filter with blue light, a harsh, contrasty print is produced.

RED SENSITIVE EMULSION LAYER - PRODUCES CYAN DYES
GREEN SENSITIVE EMULSION LAYER - PRODUCES MAGENTA DYES
BLUE SENSITIVE EMULSION LAYER - PRODUCES YELLOW DYES

Figure 2-8.—Cross section of color printing paper.

When the same negative is exposed on another sheet of paper with green light, a flat or not enough contrast print is produced. When the normal-contrast negative is printed with the proper combination of blue and green light, a print with natural contrast is produced; therefore, to control contrast when using variable contrast papers, you can use a series of yellow and magenta filters to control the amount of blue and green printing light during exposure.

COLOR PRINTING PAPERS

Color printing papers are for printing color negatives or color transparencies. Like color negative films, color printing paper can be identified by the suffixes “color” and “chrome.” These papers are designed for printing color negatives and color transparencies, respectively.

Like color films, color papers have three emulsion layers. The order of the emulsions is reversed in comparison to color films (fig. 2-8). The top emulsion layer is sensitive to red light and produces cyan dyes, the middle emulsion layer is sensitive to green light and produces magenta dyes, and the bottom emulsion layer is sensitive to blue light and produces yellow dyes.

PAPER SURFACES

Photographic papers are available in a variety of paper surfaces, such as matt, semimatt, lustre, high lustre, pearl, and glossy. The use of different paper surfaces depends on the final application of the photograph. There are two paper surfaces that are used frequently in Navy imaging facilities: glossy and matt. Paper that has a smooth, glossy surface provides a print with higher contrast and higher densities or color saturations, resulting in an apparently sharper image. This is due to the direct reflection quality of the paper surface (fig. 2-9, view A). Glossy papers are always used for photographic prints that are used to show fine detail, such as equipment damage or intelligence photographs.

Light reflected from MATT paper is diffused and provides a softer, lower contrast image (fig. 2-9, view B). Because of the lower contrast, subject detail does not appear as sharp as an image on glossy paper. Matt papers are used commonly for portraiture and scenic photographs.

PROPER HANDLING AND STORAGE OF FILMS AND PAPERS

Care in handling films and papers prevents fingerprints, abrasions, and scratches on the surfaces of these materials. You should particularly avoid unnecessary contact between an emulsion surface and any other object. Only handle light-sensitive materials by the edges.

Light-sensitive materials should be removed from their packages in a room that is clean, dust-free, and lightproof. The workbench and your hands should be clean and dry. Light-sensitive materials should be

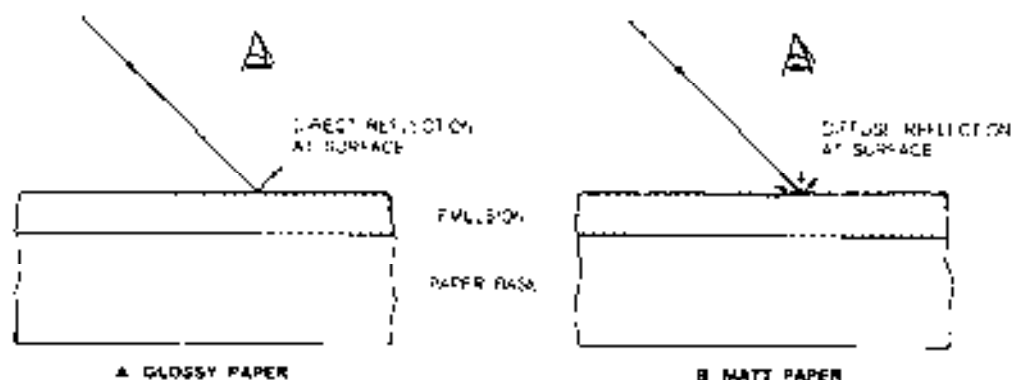


Figure 2-9.—Reflection of light of different surface paper.

handled in total darkness or under safelight conditions specified by the manufacturer.

Unexposed light-sensitive materials deteriorate slowly with time even when the materials are stored under ideal conditions. High temperatures and high relative humidity accelerate this deterioration. You should protect light-sensitive materials from the harmful effects of temperature, humidity, x rays, gases, and vapors that may be present in darkrooms, transport, and adverse storage conditions. Storage instructions are printed on the packaging materials of most photographic products.

Kodak papers and sheet film are packaged in humidity-sealed boxes to protect them from changes in relative humidity (RH). Keep these materials in their original packaging until you are ready to use them. When the RH gets at 60 percent or higher for long periods of time, not only do cardboard packages, labels, and metal containers become damaged, but mold, fungus, and bacteria start to grow. Fungi can destroy film and paper by digesting the gelatin in them. Ideally, film and paper should be stored below 50 percent RH.

The usable life of a light-sensitive material varies with the type of material, but generally, color materials deteriorate more rapidly than black-and-white materials, and black-and-white materials with high-speed emulsions deteriorate more rapidly than black-and-white materials with slow-speed emulsions.

Cold storage in a refrigerator or freezer is recommended for all light-sensitive materials; however, refrigerators and freezers that contain food or unsealed containers of liquids have a high relative humidity. Therefore, food should never be stored in the same refrigerator as film and paper.

Paper and professional film should be stored at about 50°F (10°C) or lower in the original sealed package. All film, including amateur film, must be protected from extreme heat. Never store photographic materials in extreme heat, such as in a glove compartment, trunk, or the back window of a car. Once opened, the original package should be used as soon as possible. After opening, the materials are no longer protected from humidity or chemical fumes.

When film or paper, black and white or color, is removed from cold storage into a warmer atmosphere, allow a warm-up time before opening the original packaging; otherwise, moisture condensation may form on the film or paper. The warm-up time for light-sensitive material depends on the type of material packaging, the size of the package, and the amount of material.

The warm-up times for packages of paper is considerably longer than for film. Paper is usually packaged in larger quantities, 100 to 500 sheets per box and in rolls up to 1,000 feet long. Short roll film and magazines take 1 to 1 1/2 hours to warm-up. Large packages and rolls of film and paper should be allowed to warm-up to room temperature overnight or about 10 hours.

FILM AND PAPER EXPIRATION DATES

Each package of film is marked with an expiration date. Ideally, the film should be processed before this date for best results. If the film has not been used by this date, it should be tested photographically to confirm and determine its adjusted film speed and performance. Much of the film and paper found in Navy inventory has, in fact, expired. When not subjected to adverse storage and handling conditions, the film is probably still usable for a reasonable time. You should consider the expiration date as a guide only.

Use light-sensitive materials of the same type in the order of their expiration dates. The material with the earliest expiration date should be used first. One exception to this is when you know that a material of the same type with a later expiration date has been subjected to improper storage conditions; for example, if film or paper has been sitting on a pallet on the flight ramp in Diego Garcia for several weeks before being delivered to the ship, you should test the material before using it. Film and paper stored under unfavorable conditions or film that has expired may have a loss of emulsion speed, undesirable contrast changes, stains, color shifts, or high gross fog.

CHAPTER 3

PHOTOGRAPHIC FILTERS

Filters are used in all the various steps of the photographic process. Though often neglected in the shooting stage, the use of filters can tremendously enhance the final product in both black-and-white and color photography.

PURPOSE OF PHOTOGRAPHIC FILTERS

The purpose of photographic filters is to alter the characteristics of light that reaches the light-sensitive emulsion. As light is transmitted through a filter, at least one of the following alterations occurs:

1. The color of light is modified.
2. The amount of light is reduced.
3. The vibration direction of the light rays is limited.

The two most important reasons for using photographic filters are to create an effect with an emulsion and to control the exposure of an emulsion. Interlocked with the use of filters are characteristics of light and characteristics of photographic emulsions. The effectiveness of a filter depends upon the ability of an emulsion to respond to the color of light transmitted by the filter.

Colored filters modify the way colors are recorded. Without the use of filters, black-and-white panchromatic film records colors as gray tones. These gray tones correspond roughly to the tonal range as seen by the human eye. Colored filters selectively brighten or darken these tones. In color photography, colored filters are used to correct or distort color balance.

Filters of a specific color transmit most of the light of that color and partially or completely absorb light of all other colors. For example, a red filter transmits red light and may partially or completely absorb blue and green light, depending on the deepness or purity of its color (fig. 3-1). Likewise, a yellow filter transmits red and green light and partially or completely absorbs blue light. Remember, a secondary color of light is produced by combining two primary colors of light. Red and green equal yellow; thus a yellow filter passes red and green light.

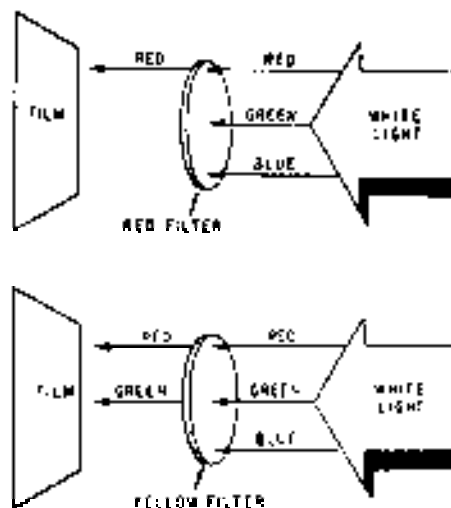


Figure 3-1.—Red and yellow filters.

Filters are available in three forms: optical glass disks bound with metal rims, lacquered gelatin film squares, and glass squares. Glass disk filters are the most practical for general use. They are available in different sizes called series numbers, such as Series 4, 5, and 6 or in millimeter sizes, such as 52mm and 59mm. Glass disk filters attach to a camera lens in two ways. Some have threads and screw directly into the lens barrel, and the others are held on the lens barrel by an adapter ring. Gelatin filters and square filters made of glass are either inserted into special filter holders that are part of the camera, or they are held on the camera by a square filter holder.

FILTER DESIGNATIONS

Filters are usually identified by numbers. This system of designating filters is used to identify Kodak Wratten filters. It uses designators, such as No. 6, No. 8, and No. 11. Some filters have a descriptive name rather than a number; for example, polarizing, skylight, and neutral density. Color compensating and color print filters have yet another designation system.

FILTERS FOR BLACK-AND-WHITE PHOTOGRAPHY

Filters used with black-and-white film are classified as contrast, correction, and special purpose. All contrast and correction filters have a noticeable color. It is important to note that a filter must be used with an emulsion sensitive to the specific color of light it transmits. Colored filters should normally be used with black-and-white film only.

Special-purpose filters for black-and-white film may be colorless, contain a hint of color, be noticeably colored, or almost visually opaque. Some special-purpose filters can be used with both black-and-white and color film. Special-purpose filters are covered later in this chapter.

Contrast Filters

Contrast filters are available in all colors and are designed to exaggerate, reduce, or eliminate specific colors of light. As their name indicates, these filters are used to increase or decrease contrast in a negative that provides differences between tones in the print.

To illustrate this, compare a red apple and a yellow banana in a black-and-white print. With a red filter over the camera lens, the apple appears lighter on the print than the yellow banana. Both objects in this example reflect the same intensity of light.

When you look through a red filter, the filter definitely appears red. This color is the effect it produces in your eye and the reason it is called a red filter. The red filter is transmitting most of the red part of the spectrum, some yellow, and some magenta. The color it is not transmitting is cyan. If you think of this red filter as an anticyan (blue and green) filter, you will better understand the way it works.

When a red filter is used, most of the reflected red light from the red apple is transmitted through the filter and recorded as a dense area on the film. Only a portion of the yellow light is transmitted, so it is recorded as a less dense area on the film. Only some of the yellow light is transmitted because the reflected light from the banana consists of red and green light. Although the red portion of the yellow light is readily transmitted through the red filter, the green portion is absorbed to some degree. Thus less light from the yellow banana reaches the film emulsion.

When the negative is printed, the two print images have separation in contrast because of the differences in negative densities. The print image of the apple is lighter

than the print image of the banana because the negative image of the red apple is more dense than the negative image of the yellow banana.

When using a specific color of contrast filter to provide separation between black-and-white images of colored objects, you should also take into account what effect the filter has on the images of other colored objects in the scene. For example, when there are blue and green objects in the scene, the red filter absorbs some or all of the reflected blue and green light. The red filter renders the negative images of these objects as low-density areas. Thus the print images have darker tones or densities.

Contrast filters can also be used to filter out an image or filter out the image of a transparent stain on an original document by copying it. This filtering-out process takes place by blending or matching the density of the image to be filtered out with the image density of the surrounding area. For example, to eliminate the image of a yellow line on a white background, use a yellow filter. The yellow filter should be as deep (same color density) or deeper in color than the color of the line. The yellow filter reduces the intensity of the light reflected from the white background by absorbing blue light. The intensity of the light reflected from the yellow line is not greatly affected since the yellow filter readily transmits the yellow light. The reduction of the intensity of the light reflected from the white background and the intensity of the light reflected from the yellow line produces equal densities on the negative and thereby does not render an image of the yellow line. Conversely, when the yellow line is on a black background, a blue filter does not allow yellow light to be transmitted. Therefore, light from the yellow object is not allowed to affect the film emulsion. Thus the line appears as a thin area that matches the black background and is thereby "eliminated"

Stains on a drawing or a picture can be filtered out whenever the stain is transparent and reasonably pure in color. The filter should be approximately the same color as the stain. The stain may still show in the negative but, in the case of line material, proper paper contrast and printing exposure get rid of the rest of the stain image.

Remember, the color of filter required to eliminate the image of an object or stain is determined by the color of the object or stain and the darkness or lightness of the surrounding scene area. Also, always use a filter that is as deep or deeper in color than the color of the object or stain to be eliminated. Refer to table 3-1 for clarification on ways to use contrast filters.

Table 3-1.—Parallel Filter Bars

Filter Color and No.		Filter Color and No.	
Deep Red	29	Bluish Green	65
Red	25	Bluish Green	65
Light Red	23A	Cyan	4
Orange	21	Cyan	44
Deep Yellow	15	Blue	47
Yellow	8	Deep Blue	47B
Yellowish Green	11	Violet	34A
Yellowish Green	13	Violet	34A
Green	58	Magenta	33
Green	61	Magenta	33

Use the parallel filter bars to choose contrast filters for black-and-white photography. Adjacent filters lighten colors next to them. Opposite filters darken colors in the print; for example, a yellowish green No. 11 filter lightens subjects that are yellowish green or yellow and darkens subjects that are violet. A No. 44 cyan filter lightens blue and blue-green and darkens light red and orange.

Correction Filters

Although panchromatic film responds to all the colors the eye can see, it does not reproduce tones of red, green, and blue objects in the same relative values as the eye sees them. The human eye is much more sensitive to green than it is to blue and red, and these colors look darker to the eye than green (fig. 3-2). Panchromatic film is more sensitive to blue and violet and looks lighter than green in a black-and-white print. This high sensitivity to blue and violet causes an overexposure to the film of blue objects as compared to green objects. This overexposure causes a dense negative image that results in a light print image (fig. 3-3).

A No. 8 yellow filter with panchromatic film helps to reproduce colors of a daylight scene with the same brightness relationship as seen by the human eye.

When using tungsten lighting, you can use a yellowish green No. 11 filter to reproduce the natural brightness relationship with panchromatic film. The yellow in the filter absorbs the ultraviolet radiation and some of the blue light, while the green in the filter absorbs some of the red light.

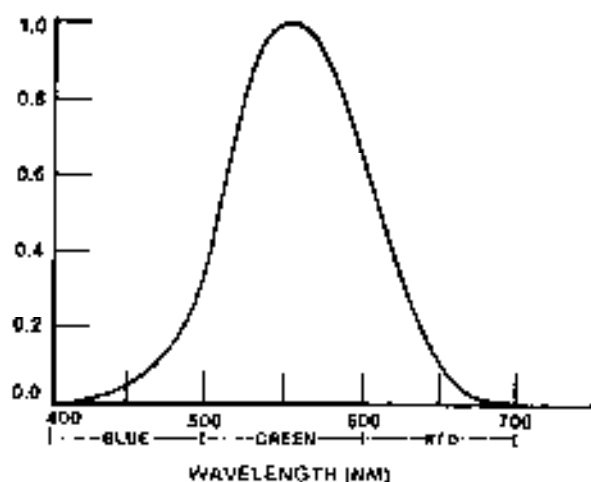


Figure 3-2.—Color sensitivity of the average human eye.

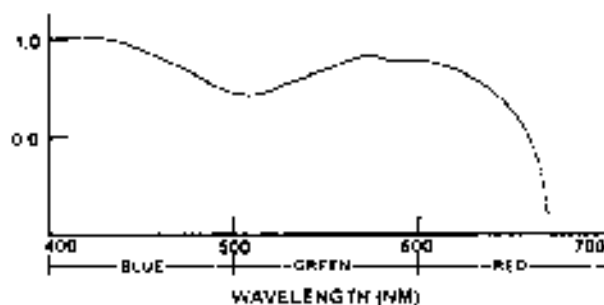


Figure 3-3.—Color sensitivity of panchromatic film.

Table 3-2.—Recommended Filters for Use with Black-and-White Panchromatic Film in Daylight

Subject	Desired Effect	Filter to Use	
Blue Sky	Natural	Yellow	No. 8
	Darken	Deep yellow	No. 15
	Very dark	Red	No. 25
	Near black	Deep red	No. 29
Seascape when sky is blue	Natural	Yellow	No. 8
	Dark water	Deep yellow	No. 15
Sunset	Natural	None/yellow	No. 8
	Brilliance	Deep yellow	No. 15
		Red	No. 25
Landscapers	Added haze for distant effect	Blue	No. 47
	Natural	Yellow	No. 8
	Reduce haze (little)	Deep yellow	No. 15
	Reduce haze (a lot)	Red	No. 25
Green colors		Deep red	No. 29
Green colors	Natural	Yellow	No. 8
	Light	Green	No. 58
Reddish colors	Lighter	Red	No. 25
Bluish colors	Lighter	Blue	No. 45
Wood, stone, sand, snow, fabrics, etc.	Natural	Yellow	No. 8
	Render texture	Deep yellow	No. 15
		Red	No. 25

To obtain desired effects with the use of filters, refer to table 3-2.

FILTERS FOR COLOR PHOTOGRAPHY

Problems associated with color materials are quite different from those encountered with black-and-white materials. In color photography, the main problem is achieving correct color balance. The principal factor involved is the color temperature of the light source being used to illuminate the subject. This color temperature provides a natural appearance to the final product. Filters for color photography are classified as light balancing, conversion, and color compensating.

LIGHT BALANCING FILTERS

Light balancing filters come in two series (not to be confused with a series that indicate physical size): the Series 81, yellowish filters, are used to lower the color temperature of a light source; and the Series 82, bluish filters, are used to raise the color temperature of light from a light source. Both series are used when a tungsten light source is used with color film.

These two series of filters permit minor adjustments in the color quality of an exposing light to obtain cooler (bluer) or warmer (more yellow) reproduction of colors; for example, when the color temperature of a tungsten light source is 3100 K and a color temperature of 3200 K is desired for the exposing light, a Series 82

Table 3-3.–Light Balancing filters

Filter color	Filter number	To Obtain 3200 K from:	To Obtain 3400 K from:
Yellowish	81	3300 K	3510 K
	81A	3400 K	3630 K
	81B	3500 K	3740 K
	81C	3600 K	3850 K
	81D	3700 K	3970 K
	81EF	3850 K	4140 K
Bluish	82C+82C	2490 K	2610 K
	82C+82B	2570 K	2700 K
	82C+82A	2650 K	2780 K
	82C+82	2720 K	2870 K
	82C	2800 K	2950 K
	82B	2890 K	3060 K
	82A	3000 K	3180 K
	82	3100 K	3290 K

color balancing filter can be used to raise the color temperature 100 K. Light balancing filters affect the entire visible spectrum of tungsten light and provide an adjustment from one Kelvin temperature to another.

When the color temperature of a tungsten light source is unknown, you can use a color temperature meter to determine it. When trying to determine what light balancing filter to use for producing a particular color temperature with a given light source, you may use the following methods:

1. Refer to the scale on a color temperature meter.
2. Refer to the tables in the *Photo-Lab-Index*.
3. Consult the manufacturer's publication for a particular filter or meter.
4. Consult appropriate film or filter data sheets.

Light balancing filters are Series 81 and Series 82. Refer to table 3-3 to determine light balancing filters that can be used to raise or lower the color temperature of a given color.

CONVERSION FILTERS

Conversion filters are used in color photography when a significant adjustment of an exposing light is required to convert the color quality of the exposing light to the color temperature for which a film is balanced.

Conversion filters generally come in two series. The 80 series of filters are blue in color and convert tungsten light to color qualities acceptable for use with daylight film. The 85 series of filters are amber in color and convert daylight to color qualities acceptable for use with tungsten film.

The correct filter to use for a given situation with a given film can most accurately be determined by consulting conversion filter tables in the *Photo-Lab-Index* or reading the filter and film data sheets.

COLOR COMPENSATING FILTERS

Color compensating (CC) filters are used to adjust the overall color balance obtained from color film, particularly slide film. Without the use of color compensating filters, improper color cast can result.

For cameras, CC filters are normally used to color balance the light from sources, such as fluorescent, tungsten, and mercury-vapor lights, and the "bounce" light reflected from colored surfaces. They are also used to balance lighting effects under unusual circumstances; for example, underwater lighting. These filters can be used to compensate for a known color deficiency of an unexposed color film. They can also be sandwiched (layered) when mounting a color transparency to compensate for an off-color hue.

Table 3-4.—Filters and Exposure Increase for Making Color Pictures by Fluorescent Light

Type of fluorescent lamp	Type of color film	
	Daylight	Tungsten
Cool White	30M + 2/3 f/stop	50M + 60Y + 1 1/3 f/stops
Deluxe Cool White	30C + 20M + 1 f/stop	10M + 30Y + 2/3 f/stop
Standard Warm White	40C + 40M + 1 1/3 f/stops	30M + 20Y + 1 f/stop
Deluxe Warm White	60C + 30M + 1 2/3 f/stops	10Y + 1/3 f/stop
White	20C + 30M + 1 f/stop	40M + 40Y + 1 f/stop
Daylight	40M + 30Y + 1 f/stop	No. 85B + 30M + 10Y + 1 f/stop

Whenever possible, you should conduct photographic tests in advance, using the type of light you expect to encounter. Consult the *Photo-Lab Index* for the most accurate filtration to use for your film, filter, and lighting situations. Table 3-4 provides an example of a good starting point for test exposures. When in doubt, you should use a filter that provides for average correction. For daylight film, you should use a 30M filter with a 2/3 f/stop exposure increase. For tungsten film, you should use a 50R filter and a 1 f/stop exposure increase.

CC filters may be used alone or in various combinations. However, when you use them in combination, the maximum number of filters in front of a lens should not exceed three. More than three filters adversely affect image quality. When combining CC filters, you should avoid creating a neutral density effect. Neutral density is caused when all three of the primary colors are present in the combined filters; for example, a cyan (blue and green) filter and a red filter.

CC filters are available in blue, green, red, yellow, magenta, and cyan. Each color is available in a range of densities. The color and density of a CC filter are identified in the filter designation, such as CC50Y. The CC indicates color compensating, the 50 indicates a peak density of 0.50 to blue light, and the Y is the first letter of the filter color-yellow. The peak density of a CC filter refers to the maximum absorption of the color of light that is complementary to the color of the filter. CC filters are available only in gelatin squares.

The color star (fig. 3-4) indicates various color relationships of color compensating filters as follows:

1. Complementary colors are opposite each other: cyan is complementary to red, yellow is complementary to blue, and magenta is complementary to green.

2. Any one color is a combination of the two colors adjacent to it:

$$R = M + Y$$

$$Y = R + G$$

$$G = Y + C$$

$$C = G + B$$

$$B = C + M$$

$$M = B + R$$

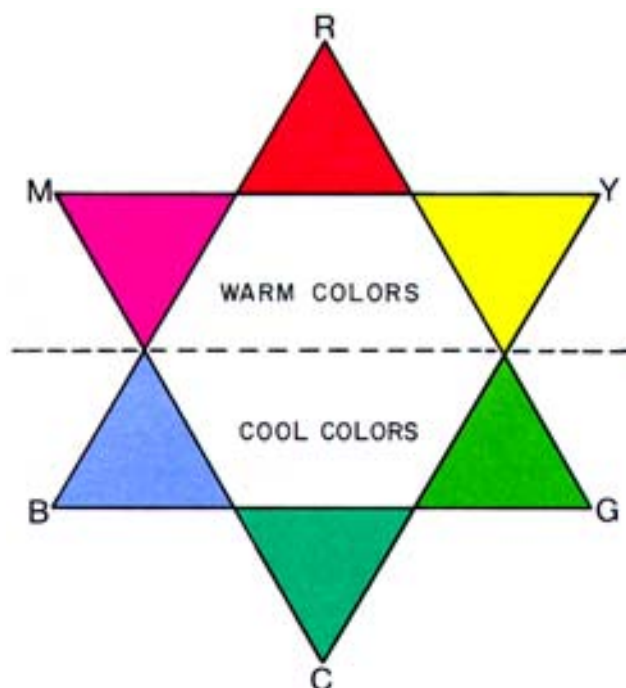


Figure 3-4.—Color star.

C302.24

3. The warm colors are at the top of the horizontal axis. The cool colors are at the bottom.

4. Filters of the same color are added and subtracted normally:

$$30M + 20M = 50M$$

$$10B - 05B = 05B$$

5. When two filters of different colors and equal densities are combined, the color of the combined filters changes, but the peak density remains the same.

$$10M + 10C = 10B$$

$$10R + 10G = 10Y$$

6. A filter combination having all three primary colors creates neutral density. To correct this neutral density, subtract the lowest density from each color.

$$10R + 20G + 30B$$

$$\underline{-10 \quad -10 \quad -10}$$

$$0R + 10C + 20B \text{ (Results)}$$

SPECIAL-PURPOSE FILTERS

Special-purpose filters for use with black-and-white film are those filters not classified specifically as contrast or correction filters. Some of the special-purpose filters can be used with both black-and-white and color film. Two of these special-purpose filters are intended primarily for use with color film.

NEUTRAL DENSITY FILTERS

Neutral density (ND) filters reduce the amount of light passing through a camera lens without changing the reproduction of colors in the scene. These filters are nonselective in their absorption of colors of light and therefore uniformly reduce the various colors of light in the spectrum. Thus white light and colored light are transmitted through an ND filter with only the intensity of the light being affected. These filters can be used with both black-and-white and color film. Neutral density filters are gray in appearance. These filters may be needed for pictures being made of a brilliant subject in bright sunlight. When you have set the fastest shutter speed and the smallest f/stop and still cannot make the picture without overexposing the film, you can use an ND filter to further reduce the exposure. Neutral density filters manufactured by Kodak are called Wratten Neutral Density Filters and are available in several densities. The ten most popular densities, with the

Table 3-5.—Neutral Density Filters

Density	Exposure reduced by f/stops
.10	1/3
.20	2/3
.30	1
.40	1 1/3
.50	12/3
.60	2
.70	2 1/3
.80	2 2/3
.90	3
1.00	3 1/3

amount of exposure reduction provided, are shown in table 3-5.

When you desire to reduce the depth of field but maintain a given shutter speed, ND filters permit the use of a larger f/stop which in turn, reduces the depth of field. Neutral density filters are used extensively in motion-picture photography where depth of field is usually quite deep. ND filters are also used with mirror type of lenses where there is no aperture control.

HAZE FILTERS

Suspended in the earth's atmosphere are minute particles of vapor and dust that cause a veil-like appearance called haze. This haze is most apparent in distant scenes. Haze is the result of sunlight being scattered by minute particles of matter that are present in the air. The amount of haze can vary due to atmospheric conditions. Haze should not be confused with mist, fog, smog, smoke, or clouds. These conditions can also produce a veil-like appearance, but filters have no effect.

When sunlight is scattered, both green light and red light are also scattered by the ever-present haze, but not nearly as much as ultraviolet radiation, violet, and blue light.

When filters are used to absorb scattered sunlight, penetration of the haze is possible. A haze filter is any filter that absorbs atmospherically scattered sunlight. A

haze filter includes contrast and correction filters. When contrast and correction filters are used for haze penetration, they may be considered special-purpose filters. Although contrast filters can be used for cutting haze, these filters affect the gray tone rendering of colored objects. The contrast and correction filters that absorb the shorter wavelengths are the most effective. The recommended contrast and correction filter colors, in the order of greatest to least effective for haze penetration, are as follows:

Red
Orange
Yellow
Green

The use of an infrared sensitive black-and-white film with an infrared filter provides the greatest haze penetration of all. Special, visually opaque infrared filters completely absorb the scattered ultraviolet radiation and the visible light that produce haze. This absorption by an infrared filter allows the scene to be photographed entirely with unscattered infrared radiation. An infrared sensitive black-and-white film without an infrared filter, or at least a red contrast filter, is not effective for haze penetration. Infrared black-and-white film is sensitive to ultraviolet radiation, violet, and blue light as well as infrared radiation and red light. The gray tone rendering of a colored subject in a black-and-white print produced from an infrared negative is greatly distorted or contrasty.

The visually opaque infrared filters are identified by numbers as follows:

87
87A
87B
87C
88A
89B

When the effect of haze is to be reduced with an equal change to the gray tone rendering of all colored objects in a black-and-white print, filters that primarily absorb ultraviolet (UV) radiation are required. These filters have a very pale pink or yellow tint and may be identified by numbers as follows:

2A
2B

2C
2E

Colorless haze or ultraviolet absorbing filters are often used to protect the front element of a lens from damage. It is much cheaper to replace a filter than it is to repair or replace a lens.

The polarizing filter is another type of special-purpose filter that can be used to reduce the effects of haze.

POLARIZING FILTERS

Polarizing filters look like gray neutral density filters. However, their effect becomes apparent when you look at the blue sky through a polarizing filter while rotating it. As you rotate the filter, the sky appears to get darker, then lighter.

Polarizing filters are used in black-and-white and color photography for the following reasons:

1. Reduction or elimination of unwanted reflections (glare) from nonmetallic surfaces, such as glass and water
2. Exposure control, similar to ND filters
3. Reducing the effects of haze
4. Darkening the blue-sky image in both black-and-white and color photography
5. Increasing color saturation in a color photograph without altering the hues of image colors

As discussed in chapter 1 of this training manual, the term *polarize* refers to a property of light that cannot be seen—the direction in which light rays vibrate. Unpolarized light rays vibrate in all directions at right angles to the ray itself. A light ray is polarized when vibrations are in one direction only.

Any synthetic material that polarizes light may be called a polarizer, or polarizing device. A polarizing screen is a polarizer in sheet form.

There are a number of different polarizing filters. However, there are only two main types: one type fits over the camera lens and the other is designed to be used over a light source. Since they do not affect color, polarizing filters and screens may be used for both black-and-white and color photography. A polarizing device used over the camera lens may have small posts (known as indicator handles) projecting from the rim for aligning the axis of the polarizing grid.

The polarizing filter may be thought of as a screen, with an optical grid or slots, that stops all light that is not vibrating in a plane parallel to the axis of the grid lines.

As the filter is rotated, the amount of polarized light can be controlled. When the rodlike crystals are perpendicular to the vibration direction of the light, the polarized light is greatly absorbed. When the rodlike crystals are parallel to the vibration direction of the polarized light, the polarized light is almost totally transmitted.

Because polarizing filters are colorless, they can be used as neutral density filters. Even when polarized light is not present in a scene, polarizing filters can be used to reduce the intensity of light. When two polarizing filters are used, their combined densities can be varied considerably.

In color photography, the only way you can reproduce the sky darker without affecting the other colors in the scene is to use a polarizing filter. You can achieve various effects from light sky to dark sky by rotating the filter to various positions. You can see this effect by viewing the scene through the viewfinder of a single-lens reflex (SLR) camera or by viewing the scene through the ground glass of a view camera. To see how much reflection control you are getting, rotate the filter as you are viewing the scene.

Getting the maximum effect with a polarizing filter depends on your angle to the subject as well as the rotation of the filter. When the reflection cannot be completely eliminated, try changing your camera angle to the subject. The maximum control of unwanted surface reflections and greatest reduction of light intensity occurs when two polarizing filters are used with their optical grids perpendicular to each other. This arrangement can be either two filters in tandem in front of the camera lens or one filter in front of the light source and another filter in front of the camera lens. You cannot control reflections from bare metal surfaces because the reflected light is not polarized.

SKYLIGHT FILTERS

By absorbing ultraviolet radiation, a skylight (1A) filter adds warmth to a scene recorded on a color transparency film. It does this by reducing the bluish cast prevalent in distant scenes and in scenes photographed on heavily overcast days or in open shade. A skylight filter is used primarily with daylight color reversal film exposed under the above conditions. A skylight filter is light pink in color.

FILTER FACTORS

Filters function by absorbing a portion of the light reflected from the subject to the camera. To compensate for this absorption and the loss of light, you may have to increase the exposure to compensate for the light absorbed by the filter. A numerical value is assigned called a “filter factor” or multiplying factor. This numerical factor is based on several variables that include the color sensitivity of the film, density of the filter, color of the filter, and color temperature of the light source. As these variables change, the filter factor also changes to produce the correct exposure consistently. Filters are often identified as “2 X yellow” or “4 X orange.” That implies that the filter factor is 2 and 4, respectively. Remember, the filter factor does not always remain constant when conditions change.

For example, a blue filter used with panchromatic film exposed with daylight requires a smaller filter factor than when the same film and filter are used with tungsten light. The reason for this is daylight has a higher content of blue light that is readily transmitted by the blue filter. Thus, with the same film and filter combination and with the same camera shutter speed and f/stop, more exposing light is available at the film plane with daylight as compared to tungsten light.

A filter that absorbs a great amount of illumination from a given light source is assigned a larger filter factor. A filter that absorbs a lower amount of illumination from the same light source is assigned a smaller filter factor.

To obtain the necessary light at the film plane for correct exposure with a filter, you must increase the original calculated exposure (without a filter). This increase in exposure is determined with a filter factor. When a filter has a factor greater than 1, an adjustment to the exposure must be made.

There are three general methods of using filter factors to determine the exposure increase required:

1. Divide the ISO speed by the filter factor, and use the product as the effective film speed.

Example: If the filter factor is 2 and the ISO speed of the film is 100, the effective film speed is 50 ($100 \div 2 = 50$).

Thus setting a film speed of 50 on your light meter produces the equivalent of 1 f/stop of additional exposure.

2. Determine the required exposure without the use of a filter; then multiply the unfiltered shutter speed by the filter factor.

Table 3-6.—Filter Factor Equivalent Exposure Table

Filter factor	Open lens aperture (f/stop)	or if the "unfiltered" shutter speed is									
		1/2	1/4	1/8	1/15	1/30	1/60	1/125	1/250	1/500	1/1000
2	1	Use a "filtered" shutter speed of									
		1	1/2	1/4	1/8	1/15	1/30	1/60	1/125	1/250	1/500
4	2	2	1	1/2	1/4	1/8	1/15	1/30	1/60	1/125	1/250
8	3	4	2	1	1/2	1/4	1/8	1/15	1/30	1/60	1/125
16	4	8	4	2	1	1/2	1/4	1/8	1/15	1/30	1/60

Example: The unfiltered exposure calls for 1/60 second, and the filter factor is 3. The correct exposure is 1/20 second ($1/60 \times 3 = 1/20$ second). However, most cameras do not have a 1/20 second shutter speed; therefore, use 1/15 second or the next slowest shutter speed.

3. When you are using an SLR camera with through the lens (TTL) metering, put the filter on the camera lens and adjust the exposure in the normal manner. However, certain dark blue, red, and orange filters may give faulty readings if used with TTL metering systems because the meter reads 18 percent gray. The camera light meter may not be sensitive to the color of light passed by the filter.

4. Consult a filter factor equivalent exposure table. (See table 3-6.)

DARKROOM FILTERS

No types of filters are used almost exclusively in the photographic darkroom. They are safelight filters and printing filters. The printing filters include variable contrast filters for printing black-and-white materials and color printing filters for printing color materials.

SAFELIGHT FILTERS

The word *safelight* in photography is used to describe filtered tungsten illumination or direct illumination from a sodium-vapor lamp. The color of a sodium-vapor lamp does not affect (expose) light-sensitive materials under prescribed darkroom conditions. The word *safe* is misleading since light-sensitive materials are never completely safe from

safelight illumination. The use of a safelight with some types of light-sensitive materials is not recommended. Compatible safelight filters for use with certain light-sensitive materials should be selected on the basis of color sensitivity and emulsion speed of the material. The best method of selecting a darkroom safelight filter is to use the filter recommended by the manufacturer of the light-sensitive material. Safelight filters absorb that portion of the visible spectrum produced by a tungsten lamp that would affect the light-sensitive material being handled.

Sodium-vapor lamp safelights use sodium gas to provide safelight illumination. Incandescent sodium gas produces a very narrow band of visible light in the yellow-orange portion of the spectrum. Colorblind printing papers are not sensitive to this monochromatic (one color) band of light, whereas the human eye is very sensitive to it. Therefore, a brighter print room is possible without the light affecting the printing paper. By using specially designed filters that further reduce the narrow band of sodium-vapor light, black-and-white materials sensitive to green and red light can be handled under this illumination. Table 3-7 provides some examples for the application of safelight filters. Always consult the *Photo-Lab-Index* to determine the best safelight for use with various light-sensitive materials.

VARIABLE CONTRAST PAPER PRINTING FILTERS

To obtain various degrees of contrast using variable contrast printing papers, use a series of magenta and yellow filters. The magenta filters are used to print black-and-white negatives that are low in contrast.

Table 3-7.—Safelight Filters

Filter Designation	Color	Use With
OA	Greenish Yellow	Black-and-white contact and duplicating materials and projection films
OC	Light Amber	Printing papers
No. 1	Red	Blue sensitive films
No. 1A	Light Red	Orthochromatic copy films
No. 2	Dark Red	Orthochromatic films
*No. 3	Dark Green	Panchromatic films
<p style="text-align: center;">NOTE</p> <p>*Use caution when processing panchromatic film under a No. 3 safelight. When a No. 3 safelight is used, the film should not be exposed to it until at least half of the developing time has passed. Then the film should be examined quickly at a distance of about 36 inches from the safelight. Much experience is needed to judge proper negative development by the process of inspection, and it is rarely performed.</p>		

Yellow filters are used to print black-and-white negatives that are high in contrast. Variable contrast printing filters are discussed in chapter 10 of this TRAMAN.

FILTERS FOR COLOR PRINTING

Filters used to print color are as follows: color compensating (CC), color printing (CP), ultraviolet absorbing, and dichroic. Each one of these filters is discussed below.

Color Compensating Filters

The color compensating filters used for printing color materials are the same CC filters used with color film. These filters are used to modify the color quality of the exposing light needed to print the color negatives or transparencies. CC filters are used between the lens and the paper in the color printing process. These CC filters are referred to as a filter pack

CC filters control the color of light that strikes the emulsion. They control the amount of light each emulsion layer receives during exposure. That results in the amount of color dyes formed in each emulsion layer. The overlapped colored dyes (cyan, magenta, and

yellow in proper proportions) represent the colors of the original scene.

Color Printing Filters

Color printing (CP) filters are used in color printing, the same as CC filters with one exception. CP filters are placed in the enlarger between the light source and the negative or transparency being printed. That is done because CP filters are made of acetate and affect image definition.

CP filters are available in red, cyan, magenta, and yellow with densities of 0.05, 0.10, 0.20, and 0.40. The color of a filter and its peak density are identified the same as CC filters.

Ultraviolet Absorbing Filters

Ultraviolet absorbing filters for color printing prevent the fogging of the color material by ultraviolet radiation emitted by the exposing light source. This filter is not considered part of a printing filter pack, but it is always present in color printing systems. An ultraviolet absorbing filter for color printing is identified as 2B.

Dichroic Filters

Most photographic filters use colored dyes that absorb certain wavelengths and allow others to be transmitted. Such filters do not begin and end transmission at precise wavelengths.

Sharp-cutting, narrow-band filters are produced using wavelength interference rather than wavelength absorption. Dichroic or interference filters pass certain precise wavelengths and reflect all others.

Dichroic filters are used extensively in color printing and photographic testing systems. Because of their stability and long life, dichroic filters provide more accurate and more precise filtration.

HANDLING AND STORING OF FILTERS

A gelatin filter is protected by a thin lacquer coating that provides little protection against careless handling. Handle these filters carefully and only the edges. When not in use, gelatin filters should be stored in their original package, or they can be stored in clean paper between pages of a book. Gelatin filters should be kept flat and stored in a dark, dry place. Continued stress on gelatin filters can deform them permanently. When stored in high-humidity areas, they can become cloudy.

Dust particles should be removed from gelatin filters by brushing gently with a clean camel-hair brush or by clean, low-pressure air.

Glass filters or gelatin filters mounted between glass should be treated the same as photographic lenses. They should be kept in protective boxes or containers and should never be exposed to dampness or dirt. Never wash glass-mounted filters with water. When water comes in contact with the gelatin at the edges of a glass-mounted filter, it causes it to swell and allow air to enter between the gelatin and the glass. That causes a defect in the optical properties of the filter.

When a glass-mounted filter becomes dirty, you should not rub or breath on it. Use a piece of soft cloth or lens tissue moistened with lens cleaner. Do not allow the lens cleaner to touch the edges of the filter. Large pieces of grit should be removed with a camel's hair brush before attempting to clean the filter.

Do not expose gelatin or glass filters to temperatures higher than 122°F (50°C). High temperatures, high humidity, and time affect the stability of the dyes and shorten the life of the filter.

You should now have a basic understanding of filters and how they affect various wavelengths of light. You should know the ways in which filters are used for exposing light-sensitive materials. Filters are an integral link to high-quality products. This knowledge provides you with an invaluable tool in filter application for all the various stages of the photographic processes.

CHAPTER 4

STILL CAMERAS AND CONTROLS

Cameras have gone through many changes in design over the years. Several of your chiefs and division officers remember lugging around bulky, cumbersome 4x5 Speed Graphic cameras with film holders and tripods just to cover routine assignments. Through the development of modern-day cameras and film, small, hand-held cameras are commonly used. A large variety of cameras are available in the imaging facilities of the Navy. After learning the nature of your assignment and the equipment available, you must choose the equipment that will get the job done best, whether it be a 4x5 view camera or a small, hand-held electronic camera.

The human eye may be compared to a camera. There are several similarities. The eye is a physiological optical instrument. The camera is a mechanical optical

instrument. The eye has a lens, and like the lens of a camera, it forms an image on a light-sensitive surface (fig. 4-1). The lens of the eye focuses light on the retina. The camera lens focuses light on the film plane. The lens of the eye focuses by changing its curvature, the camera lens by changing its focal length. The diaphragm on a camera is similar, like the iris of the eye. When the light is bright, the iris closes down, reducing the brightness of the image. Likewise, when the light is bright, the camera diaphragm closes down. When the light is dim, the diaphragm opens up. The components of the eye are held together by the sclera, the components of the camera by the camera body.

A camera in its simplest form (fig. 4-2) is a lighttight box with a lens to form an image, a shutter to control the length of time light is allowed to act on the film, a

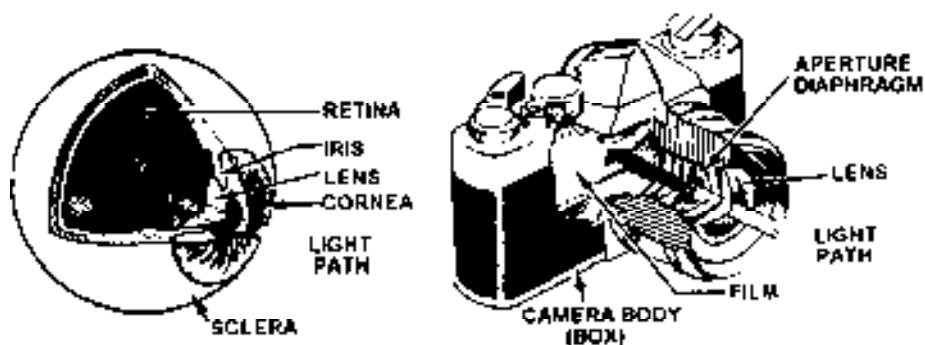


Figure 4-1.—Comparison of human eye to a camera.

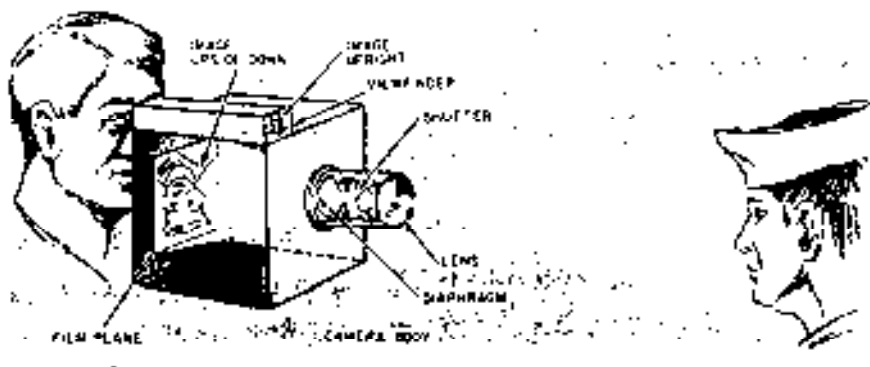


Figure 4-2.—A simple camera.



R. B. Burrows
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Figure 4-3.—35mm single-lens reflex (SLR) camera.

diaphragm to control the brightness of the image, a means of holding the film at the back of the camera, and a viewfinder so the photographer knows what the image is, and of course a body to hold it all together.

Simple cameras, such as the one described, have limited capabilities. They have a fixed-focus lens that cannot produce a sharp image of a subject closer than about 6 feet. Also, the shutter speed and diaphragm are preset and cannot be altered. The capabilities of a simple camera can be enhanced by adding features to perform the following:

- Focus on subjects at various distances
- Adjust the lens for different lighting conditions
- Change various lenses quickly to change focal length and fields of view

- Change shutter speed to “capture” images of moving subjects
- Use synchronized electronic flash
- Meter the image brightness of the subject to either manually or automatically adjust the diaphragm and shutter speed

Figure 4-3 illustrates a common 35mm camera and identifies the various camera controls.

CAMERA TYPES

In this chapter, the characteristics and functions commonly found on most cameras are discussed. No single camera can meet the requirements of every photographic assignment. There are a number of cameras to choose from in the fleet. These cameras

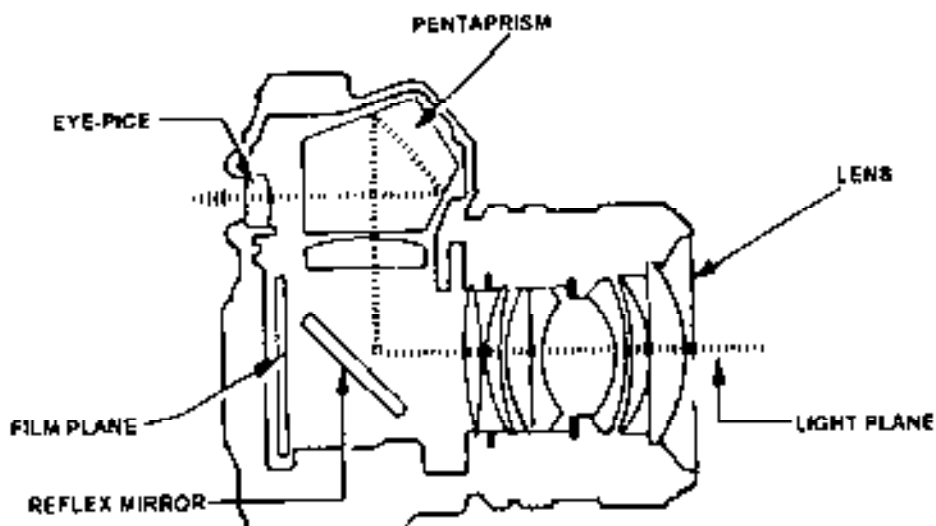


Figure 4-4.—Design of a typical SLR camera.

produce negatives that range in size from 35mm to 8x10 inches. You will learn to choose the camera that best meets the conditions of your assignment and the customer's photographic requirements.

The number and types of cameras available at an imaging facility depend primarily on the mission of the facility. All cameras have common features. Once you become familiar with the operation of one camera, you can learn quickly to operate other types. There are three general categories of cameras: small format, medium format, and large format.

SMALL-FORMAT CAMERAS

Cameras that produce negatives smaller than 35mm are considered small-format cameras. Small-format cameras are preferable when you need maximum freedom of movement and a large number of negatives without reloading the camera. The accessories, lenses, and flash equipment can be carried easily, and commonly 36 frames may be taken rapidly without reloading the film. This type of camera is helpful for news and action photography where several pictures must be taken in a short time from various ranges and under varying light conditions. The primary disadvantage of small-format cameras is they produce small negatives. The smaller the negative, the more it must be enlarged in printing.

The most popular professional small-format camera is the 35mm single-lens reflex (SLR). This camera has a mirror in the path of the image formed by the lens that

is reflected to a viewing screen for focusing and composition. This allows you to see what the lens sees regardless of the lens focal length or the lens-to-subject distance. The reflex system is simple and reliable. It has three main elements: a hinged mirror, a matte focusing screen, and a five-sided glass prism called a pentaprism. The mirror, in the viewing position, is below the viewing screen and behind the lens. It is at a 45-degree angle and projects the image formed by the lens up to the focusing or viewing screen. The pentaprism reflects the image from the focusing screen, so you can see it in the camera eyepiece. Figure 4-4 shows the design of a typical SLR camera.

When the shutter release is pressed, the mirror swings up and out of the light path, so the light can reach the film. It also seals off the viewfinder, so light entering the eyepiece cannot reach the film. After the film is exposed, the mirror swings back down, and the image is visible again in the viewfinder.

CAUTION

The reflex mirror is thin glass coated on the front with silver, so care must be taken not to damage it by touching or scratching it. Follow only the procedures listed in the Planned Maintenance System (PMS) for cleaning camera mirrors.

Almost all 35mm cameras have focal-plane shutters. Focal-plane shutters simplify the construction of the camera and make interchangeable lenses smaller,

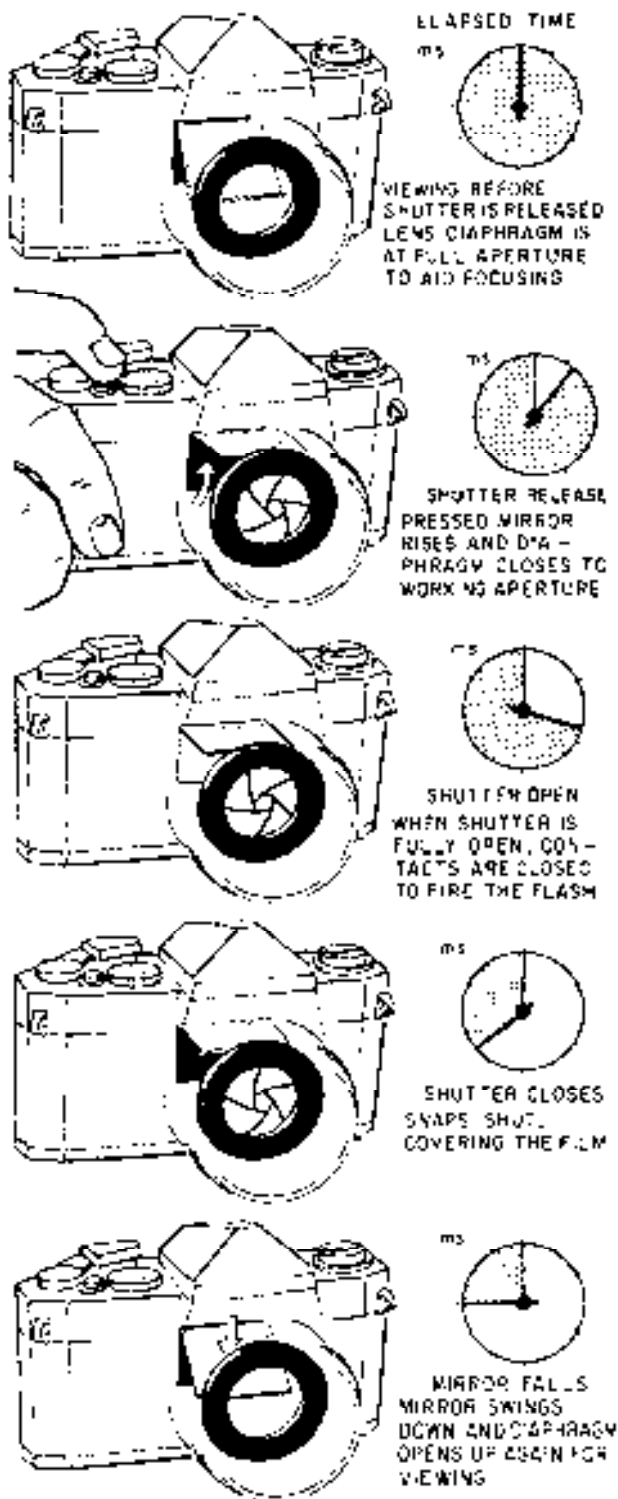


Figure 4-5.—The shutter, aperture, and mirror operate in a precise sequence when exposures are made.

lighter, and less expensive. The shutter, aperture, and mirror work together in a precise sequence that is repeated each time the shutter is tripped (fig. 4-5).

Most SLR lenses have an iris diaphragm. The diaphragm is held wide open for focusing and viewing.

The aperture is then stopped down automatically to the preset working aperture at the instant the exposure is made. That means the image on the viewing screen is bright, easy to see, and focus; but only controlled brightness reaches the film for exposure.

Focusing is done by turning the lens focusing ring. A screw thread that runs around the inside of the lens barrel moves the lens closer or farther away from the film as the focusing ring is turned. The interchangeable lenses of most 35mm cameras are attached by a bayonet flange. Each lens mount differs slightly for each manufacturer of lenses and cameras, thus different lenses and camera bodies cannot be interchanged.

Most 35mm SLRs have a built-in light meter that reads through the lens (TTL). The light meter may read the light falling on the mirror, the shutter curtain, the focusing screen, or even on the film at the instant of exposure. On an automatic camera, the f/stop or shutter speed is adjusted automatically for correct exposures. On manual cameras, the light meter produces a display in the viewfinder to indicate the correct camera settings. You must then set the camera controls to get the correct exposures.

MEDIUM-FORMAT CAMERAS

Medium-format cameras are very popular in Navy imaging facilities. Except for the increased size, these cameras are just as versatile as small-format cameras. Interchangeable lenses, TTL metering, SLR focusing systems, and both manual and automatic controls are available on medium-format cameras. The advantage of a medium-format camera is the larger negative size of 120 or 220 film. These cameras are commonly used for portraiture or when relatively large prints are required from the negative. The most common medium-format camera used by Navy imaging facilities is the Bronica ETRS (fig. 4-6). This camera is available in almost all Navy imaging facilities, both afloat and ashore.

LARGE-FORMAT CAMERAS

Large-format cameras are used when you must retain maximum detail in the negative. This is necessary when certain subjects are photographed to exact scale or when large prints are required. Large-format cameras produce negatives 4x5 or larger. The most common large-format cameras are view cameras and copy cameras. Features common to all large-format cameras are as follows:

- Ground glass viewing and focusing



*Courtesy of Tamron Industries, Inc.
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Figure 4-6.—Bronica ETRS medium-format camera.

- Both front and rear focusing
- Bellows that extend to permit at least a 1:1 image ratio

In addition to the features listed above, the view camera has additional features that control image sharpness and distortion. The view camera is discussed later in this chapter.

CAMERA CONTROLS

When you take a picture, the camera causes light reflected from the subject to be imaged on light-sensitive material. The camera controls this action in several ways. The first control is focus. Cameras have components to show what part of the scene will be recorded in sharp focus on the film. For example, some cameras use a coincidence or split-image range finder, and others use a focusing screen or ground glass.

The second camera control is the **lens aperture**. This control is located next to the focusing ring on most cameras. As discussed in chapter 1, the aperture affects both focus and exposure.

The third control is **shutter speed**. The shutter controls the length of time light is admitted to the film. Shutter speed also has an effect on the way movement is recorded on film.

FOCUS

Focusing involves adjusting the distance between the lens and the focal plane, or film plane, when photographing subjects at various camera-to-subject distances. When a camera lens is focused on a subject point, all light rays from that point, and only that point, are brought to sharp focus at the film plane. When about 600 or more feet from the camera, the subject is considered to be at infinity. A subject at infinity is so far from the camera that rays of light reflected to the lens from the subject are considered parallel. When a camera is focused on a subject at infinity, the distance between the optical center of the lens and the film plane (lens-to-film distance) is equal to the lens focal length. At this point the lens is closest to the film plane. As the camera-to-subject distance decreases, the lens-to-film distance must be increased to bring the subject into focus.

When you are taking a picture of only one subject, focusing is simple; however, when you want to include several subjects at different distances from the camera in the same picture and have them all in sharp focus, it becomes more complicated. Unless the subject is distant scenery with nothing in the foreground, there is always one object that is closer to the camera than another. Then you must decide what part of the scene is to appear in sharp focus. In simple cases, such as a sailor standing against a plain background, the decision is simple—focus on the sailor. In more complex cases, when subjects both close and far from the camera must be in sharp focus, you should focus about one third of the distance into the scene. In other words, focus about one third of the distance between the closest and farthest subject you want in sharp focus. This is known as the **depth of field**.

The way you focus the camera will depend on what part of the picture is most important and its purpose; for example, the pictures a civil engineer needs of a building at a naval air station is altogether different from the pictures a visitor to the air station wants to take home. The engineer needs pictures that show a maximum amount of detail throughout the scene. The visitor, on the other hand, is more interested in pictures that bring back pleasant memories. The requirements of the picture determine what you should focus on. The engineer needs to have everything in the picture in sharp focus. You might accomplish this as follows: Measure the distance to the nearest point of the picture and the distance to the farthest part of the scene. Then consult the depth-of-field scale on the camera lens to focus on a point between these two distances. Now, when the lens is stopped down to a small aperture, the depth of field is



Figure 4-7.—Focusing scale.

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increased. Both near and far points will appear in focus. In photographing the scene for a visitor, you may want to emphasize only the entrance way to the building, rather than concentrating on getting everything in the picture in sharp focus.

Focusing Systems

Accurate focusing and framing are essential to good pictures, and modern cameras have many devices to help you get good focusing and framing results.

Because of the principles of depth of field, simple cameras are manufactured without any way of adjusting focus. The lenses of these simple cameras are prefocused at the hyperfocal distance. Remember from chapter 1, that the hyperfocal distance for a lens is determined by the focal length and the aperture. That allows “point and shoot,” ID, and passport cameras to produce pictures where everything from about one half of the hyperfocal distance through infinity are acceptably sharp.

Focusing is accomplished by adjusting the distance from the lens to the film. It does not matter which of the two is actually moved, the lens or the film. With hand-held cameras the lens is moved in and out. Usually on large-copy cameras, the camera back (film plane) is moved toward or away from the lens. That is because

the distance from the photographer to the lens board is usually too great to focus through the ground glass.

No matter what system you use to focus the camera, there must be a means for you to determine when the image is in focus. Some cameras have autofocus systems. Most camera systems used by Navy personnel are focused manually.

Focusing Scale

This is the simplest type of focusing system. It uses a scale of distances that indicates the distance where the focus is set. Primarily, these scales are engraved on the lens barrel. To use the focusing scale, you can measure the camera-to-subject distance, but, in most cases, you must estimate the camera-to-subject distance. This distance is then set to the focus index mark on the lens (fig. 4-7). Scale focusing can be useful when you anticipate quick action but do not have sufficient time to focus the camera. When using scale focusing, a small f/stop is helpful so you can rely on depth of field to provide an acceptably sharp image.

Ground Glass Focusing

With some cameras, focusing is done by viewing the image on a glass screen, called a ground glass. The image formed by a view camera is projected directly to the ground glass for viewing and focusing. Accurate focusing can be achieved using a ground glass. There is a drawback to this type of focusing. Because of the texture of the ground glass, very fine detail of the image is difficult to distinguish. That results in some leeway in focusing. Additionally, when you work too long at focusing the image, your eye will adjust and accept an image that is less than sharp. For this reason, it is helpful to place a magnifying loop directly on the ground glass. That helps in focusing quickly and accurately.

A ground glass focusing system shows directly the image that will appear on the film. The image size and depth of field records on the film the same as it appears on the ground glass. Ground glass focusing systems are commonly found on copy cameras and view cameras. The image on the ground glass appears upside down and backwards.

Reflex Focusing

A reflex focusing system also uses a ground glass or focusing screen; however, instead of the image being

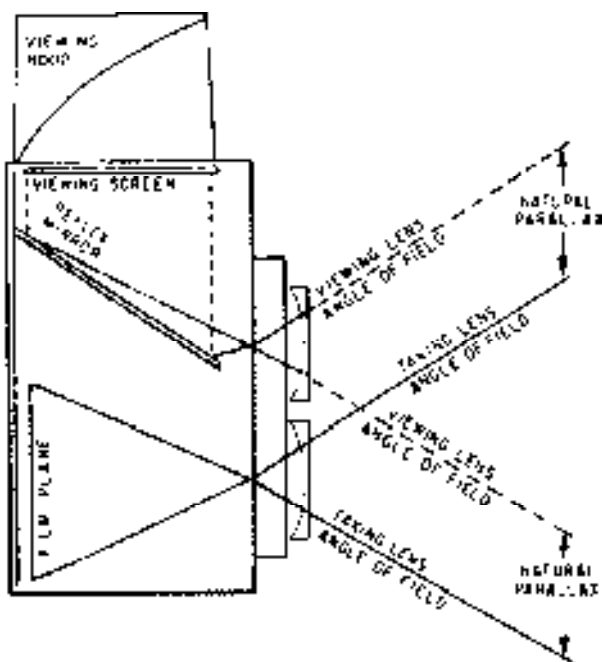


Figure 4-8.—Twin-lens reflex camera.

formed directly on the ground glass or focusing screen, the lens forms the image on a mirror that reflects the image to the focusing screen or ground glass.

TWIN-LENS REFLEX.—The twin-lens reflex (TLR) system uses a matched set of lenses for focusing and viewing. One lens is the viewing lens; the other is the picture-taking lens. The viewing lens is always wide open. That makes focusing and viewing easy, but depth of field cannot be viewed. Depth of field must be determined by a scale that is provided on the lens or camera body.

An advantage of the twin-lens reflex system is that the image is visible on the focusing screen, before, during, and after exposure. A disadvantage of twin-lens systems is that parallax errors occur. Parallax refers to the difference between the image seen through the viewing lens and the image transmitted to the picture-taking lens (fig. 4-8). For distant subjects the difference is not very great or noticeable; however, when your subject is close to the camera, parallax is much more noticeable. You see a different image area through the viewing lens than what is being transmitted through the picture-taking lens. Some twin-lens reflex cameras have an indicator in the viewing lens, so you can compensate for parallax. Another disadvantage of the twin-lens reflex camera is that it takes practice to

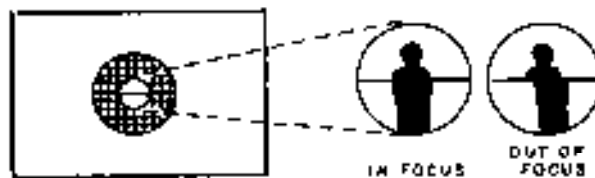


Figure 4-9.—Split-image focusing.

follow action and compose the subject. The image seen on the focusing screen is backwards from the actual image. Twin-lens reflex cameras are no longer commonly used in Navy imaging, but they are still around.

SINGLE-LENS REFLEX.—Single-lens reflex (SLR) cameras have a focusing and viewing system that shows you the image formed by the picture-taking lens. SLR cameras are designed so the distance between the focusing screen and the lens is exactly the same as the distance between the lens and the film; therefore, whatever appears in focus on the focusing screen will also be recorded in focus on the film. With an SLR camera, there is no parallax error.

Sometimes two small prisms or a split screen is included in the central area of an SLR camera viewing screen. When the image is out of focus, it appears split in this area (fig. 4-9). Some screens have a central grid of minute prisms that produce a shimmering effect when the image is out of focus.

An SLR camera is focused by rotating the focusing ring on the lens until the image seen through the viewfinder is in sharp focus. SLR cameras are the most commonly used camera in Navy imaging today.

Direct-Vision Range Finder Focusing

Cameras that use direct-vision range finder focusing produce a double image in the viewfinder until the subject is in focus on the film plane. This system has a coupled range finder optical device that is linked to the focusing ring. To focus a direct-vision coincidence or split-image range finder camera, you must align two separate images of the subject. When looking through the camera viewfinder, you see a pale or tinted area in the center of the viewing window. This area shows the double image. To set the correct focus, you aim the camera so the subject you want in sharpest focus is in the pale area. You then turn the lens focus ring, or camera

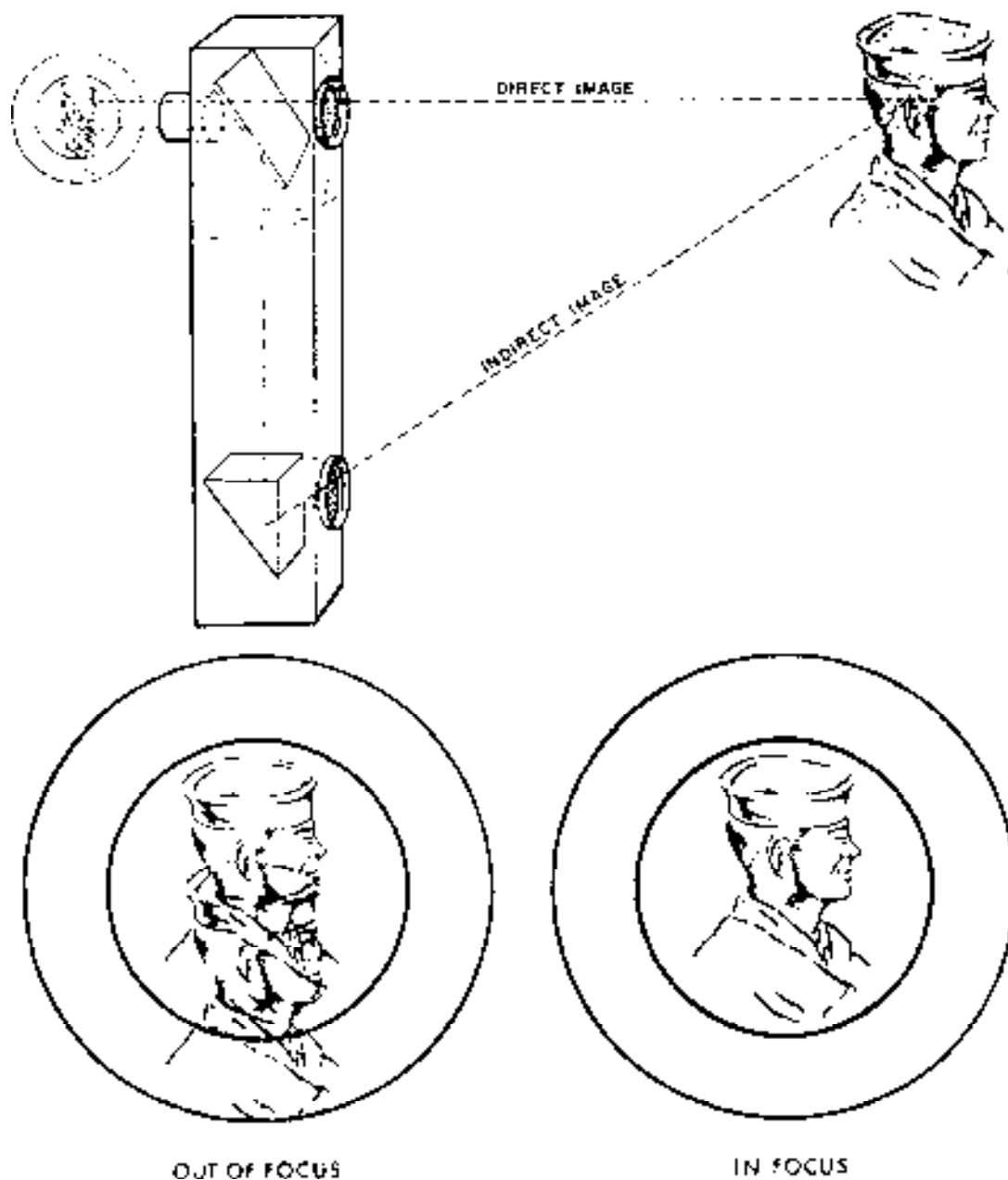


Figure 4-10.—Direct-vision range finder focusing.

focus knob, until the double images coincide and only one image is seen (fig. 4-10).

The disadvantages of a direct range finder system are that it does not couple to a large variety of lenses, thus restricting its use to only several different focal-length lenses. Unlike the ground glass and SLR focusing systems, depth of field cannot be determined

in the direct-vision range finder system. Everything appears sharp through the viewfinder window.

Autofocus

Most autofocus cameras use the same principle as a direct-vision range finder camera. The autofocus camera determines the subject distance by comparing



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Figure 4-11.—Use of selective focus.

the contrast brightness of two images: one reflected from a fixed mirror, the other from a movable mirror. This system works on the theory that the sharpest images have the highest contrast. When maximum contrast is reached, an electronic device converts the contrast brightness information into impulses. These impulses start a motor that moves the lens to the point of sharp focus. This type of autofocus system does not perform effectively when the subject is all one color or does not contain much contrast.

Another type of autofocus camera uses sonar or infrared. These systems emit either a sonar or infrared signal to determine subject distance. The distance is determined by the amount of time it takes the transmitted energy to reflect back from the subject to a sensor on the camera. This information is then sent to a motor that moves the lens to the point of sharp focus. The sonar autofocus system has a disadvantage. You cannot photograph subjects through glass. The sonar reflects off the glass and not the subject.

SELECTIVE FOCUS

You do not always want everything in your photographs to be in sharp focus. By using selective focus, you can emphasize the main subject and draw attention to it. “Selective focus” means the use of a shallow depth of field to isolate or emphasize the subject (fig. 4-11). Selective focus is the control of the zone of sharpness, or depth of field, in your photographs.

Once the lens has been focused on the main subject of the picture, using a progressively larger aperture (f/stop) will reduce the zone in front of and behind the subject that is in focus. Long-focal-length lenses are more effective for selective focusing because of their larger real apertures. Wide-angle or short-focal-length lenses are not as effective for selective focus because of the great depth of field they provide at most apertures. The following factors provide the maximum selective focus control by minimizing depth of field:

- Working close-up
- Using a wide aperture

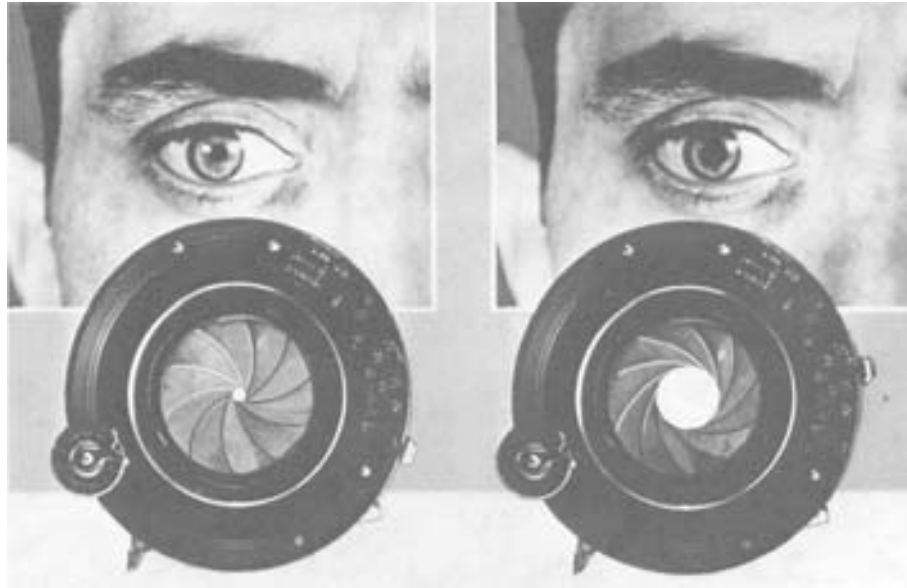


Figure 4-12.—Iris diaphragm.

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- Using a long-focal-length lens
- Focusing on near objects

APERTURE

The aperture, or f/stop as it is commonly called, is used to regulate the diameter of the lens opening. That controls the luminance on the film plane. Besides controlling the luminance on the film plane, the f/stop also controls image sharpness by partially correcting various lens aberrations.

The most commonly used aperture control device is the iris diaphragm. An iris diaphragm is an adjustable device that is fitted into the barrel of the lens or shutter housing. It is called an iris diaphragm because it resembles the iris in the human eye (fig. 4-12). An iris diaphragm is a series of thin, curved, metal blades that overlap each other and is fastened to a ring on the lens barrel or shutter housing. The size of the aperture is changed by turning the aperture control ring. The blades move in unison as the control ring is moved, forming an aperture of any desired size. The control ring is marked in a series of f/stops that relate to the iris opening. The aperture controls the **intensity** of light that is allowed to pass to the film and the parts of the image that will appear in sharp focus.

Depth of Field

Depth of field is that zone both in front of and behind your subject that are in acceptably sharp focus. The focusing controls on most cameras are easy to use, providing you understand the factors that effect depth of field. To produce professional quality photographs, you must know how to control the depth of field.

Aperture, or f/stop, is the most important factor in controlling the depth of field. The smaller the f/stop opening, the greater the depth of field; for example, at f/16, a normal lens focused on a subject 16 feet from the camera may show everything in focus from 8 feet to infinity. At f/5.6, depth of field may range from about 3 feet in front of the subject to about 6 feet behind the subject. At f/2, only the subject focused on is sharp. As shown in figure 4-3, a shallow depth of field results in a blurry foreground and background, whereas greater depth of field results in more overall sharpness.

Camera-to-subject distance also has an effect on the depth of field. In general, the closer you are to the subject, the shallower the depth of field. Even at f/16 with a normal lens, if you focus on a subject only 3 feet from the camera, the depth of field may only be about 1 foot. At f/2, the subject's eyes may be in sharp focus, but the nose and ears are blurred. As you increase the camera-to-subject distance, the depth of field increases rapidly. Using an aperture of f/16 and focusing at 6 feet, the depth of field may extend from a foot in front of the subject to about 3 feet in back of the subject. Still using

Table 4-1.–How to Control Depth of Field

If you want less	If you want more
Use a larger f/stop (lower number).	Use a smaller f/stop (higher number).
Use a longer focal length lens.	Use a shorter focal length lens.
Move closer to the subject.	Back up from the subject.
Use a filter to reduce the amount of light allowed to be transmitted and use a larger f/stop.	Use a faster film or a slower shutter speed and use a smaller f/stop.
	Focus at the hyperfocal distance.

f/16 but focusing now at about 16 feet, the depth of field is almost at infinity. Most normal lenses for 35mm cameras produce these maximum ranges of sharpness at about 16 feet. Focusing any farther from the camera only reduces foreground sharpness. You must remember this point when attempting to get the greatest possible depth of field.

Lens focal length is also a factor in depth of field. The shorter the lens focal length, the greater the depth of field at a given aperture. In other words, a wide-angle lens provides more depth of field at f/8 than a normal lens, and a normal lens provides more depth of field at f/8 than a telephoto lens.

You know that a small aperture like f/16 provides more depth of field than a wide aperture like f/2. With experience, you can predict the best aperture for the depth of field desired. Even with experience, you do not always have to guess the aperture setting or calculate the hyperfocal distance, near distance, and far distance by using formulas. Most lenses have a depth-of-field scale to guide you (fig. 4-13). The depth-of-field scale indicates the distance range from the camera that the subject(s) appear in acceptably sharp focus. The depth of field on an SLR is marked between the aperture ring and the focusing scale. Use the depth-of-field scale as follows:

1. Focus on the subject.
2. Select the f/stop.
3. Look at the depth-of-field scale and locate the marks that correspond to your chosen f/stop. The f/stop appears twice, once on either side of the scale center line.
4. Read the two distances on the focusing scale that are adjacent to the two f/stops on the

depth-of-field scale. You may have to estimate the distances.

You can see in figure 4-13 that the lens is focused at a distance of 30 feet with the aperture set between f/16 and f/22. You can see from the depth-of-field scale that the depth of field extends from approximately 11 feet to beyond infinity. If the aperture is opened up to f/8, the depth of field will range from about 16 feet to infinity.

At any given aperture, depth of field is maximized by focusing the lens at the hyperfocal distance. That is the closest point of acceptable sharp focus shown on the depth-of-field scale when the lens is focused at infinity. When you are changing the focus setting to the hyperfocal distance, the zone in front of the subject that is sharp is increased, and infinity is still the farthest point



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Figure 4-13.–Depth-of-field scale.



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Figure 4-14.—When the lens is focused at 20 feet and set at f/22, the depth of field ranges from about 10 feet to infinity

in sharp focus. In figure 4-14, when the lens is set at f/22 and focused at infinity, the depth of field ranges from about 20 feet (the hyperfocal distance) to infinity; however, when you change the lens focus to 20 feet, the depth of field ranges from about 10 feet to infinity.

The lenses of modern SLR cameras stay at their maximum aperture until the shutter is tripped. These lenses provide a bright image in the viewfinder to focus. As a result, when you look through the viewfinder, you only see the depth of field for the maximum aperture and not the working f/stop. Most SLR cameras have a depth-of-field preview button to compensate for this. When you press it, the aperture closes down to the set f/stop. Although the viewfinder becomes darker, you can see the actual depth of field at the selected aperture.

Image Sharpness

The outer edges of a lens are least likely to produce a well-defined or aberration-free image; therefore, proper use of the diaphragm, aperture, or f/stop can improve image sharpness by blocking off light rays that would otherwise pass through the outside edges of a lens.

There is a limit to how far the aperture can be stopped down and still increase image sharpness. When the aperture is very small, it causes diffraction of light rays striking the edge of the diaphragm. Diffraction

results in a loss of image sharpness. This loss of image sharpness is especially noticeable in copy work

Physical limitations in the design of lenses make it impossible to manufacture a lens of uniform quality from the center to the edges; therefore, to obtain the best quality with most lenses, you can eliminate the edges of the lens from being used by closing down the aperture about two f/stops from wide open. This recommended adjustment is called the **optimum** or **critical aperture**. The optimum aperture for a particular lens refers to the f/stop that renders the best image definition.

When a lens is stopped down below the optimum aperture, there is an actual decrease in overall image sharpness due to diffraction. Although the depth of field increases when a lens is stopped down below the optimum aperture, image sharpness decreases; therefore, increased depth of field should not be confused with image sharpness. For example, the image formed by a pinhole camera has extraordinary depth of field but lacks image sharpness. When the lens aperture is closed down to the size of a pinhole, it behaves like one. This is an important factor for subjects in a flat plane (such as copying) where depth of field is not needed.

SHUTTER

A camera shutter controls both the exact instant when the film is exposed to light and the duration of that exposure. The shutter is used in conjunction with the diaphragm to control the exposure of the film. The most important function of the shutter is that it limits the time that light is allowed to pass through the lens and act on the film. There are two types of camera shutters: leaf and focal plane.

Leaf Shutter

The blades of this type of shutter are usually located between or near the lens elements and close to the diaphragm. It is sometimes called a between-the-lens shutter; however, a more correct term for this type of shutter is a leaf or diaphragm shutter.

Leaf shutters have several blades made of thin spring steel. When the shutter is closed, these blades, or leaves, are at rest and overlap each other. This prevents light from reaching the film. When the shutter release button is pressed, the blades move apart or open quickly and allow light to pass and expose the film. They remain open for the duration of the preset exposure time before springing shut again (fig. 4-15).

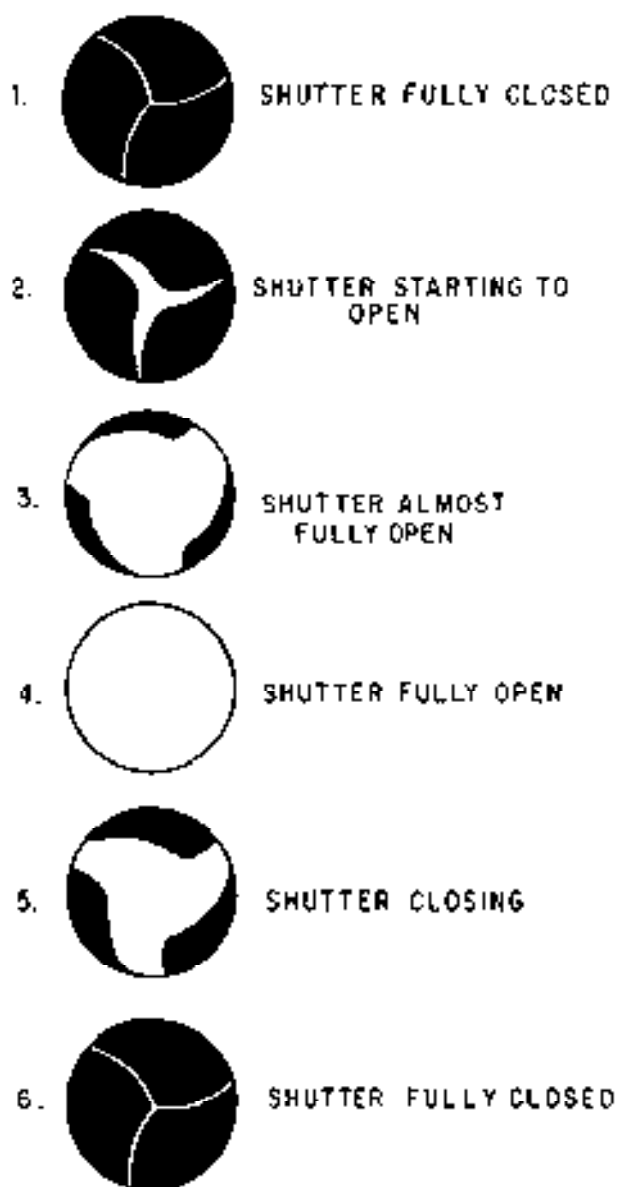


Figure 4-15.—Leaf shutter operation.

Leaf shutters have an important advantage over focal-plane shutters. Leaf shutters can be used with electronic flash at all shutter speeds. This is not true with focal-plane shutters. Focal-plane shutters can only be used at slow shutter speeds, usually at 1/125 second and below.

Focal-Plane Shutter

A focal-plane shutter is essentially two lightproof cloths or thin metal curtains that move across the film aperture in the same direction. This type of shutter is housed entirely within the camera body and is mounted on two rollers, one on each side of the film aperture

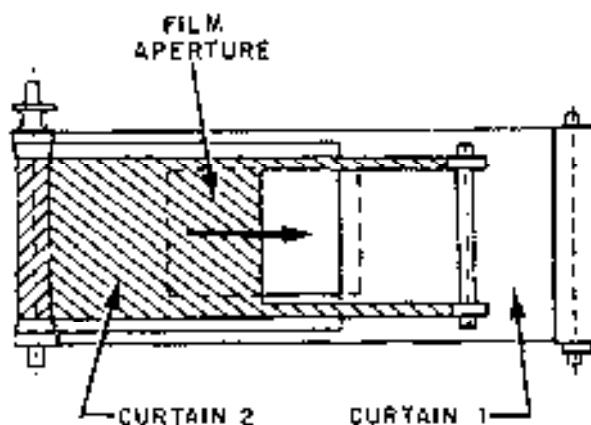


Figure 4-16.—Focal-plane shutter.

(fig. 4-16). As the curtain is moved from one roller to the other by spring tension, the second curtain follows, forming an opening that permits light to pass from the lens to the film. After the opening has passed, the second curtain stops and prevents additional light from reaching the film. In the design of focal-plane shutters, the curtains form a slit that travels across the film aperture to expose the film. When a slow shutter speed is set, the second curtain waits a relatively long time before it follows the first curtain; in this case, the slit is quite wide. When a fast shutter speed is set, the second curtain quickly follows the first and only a narrow slit is formed.

Shutter Speed

A range of shutter speeds is available on professional cameras. Common shutter settings are as follows: T, B, 1 second, 1/2, 1/4, 1/8, 1/15, 1/30, 1/60, 1/125, 1/250, 1/500, 1/1000, and 1/2000 second. The fastest between-the-lens (leaf) shutter speed is 1/500 second. Some focal-plane shutters can be as fast as 1/12000 second. In addition to a given set range of speeds, most shutters are made so they can be opened for an indefinite period of time. At the setting marked "T" (time), the shutter opens the first time the shutter release button is depressed and remains open until the shutter release button is depressed again. At the setting marked "B" (bulb), the shutter remains open as long as the shutter release button is depressed, but closes as soon as it is released.

The interval that you want the shutter to remain open is selected by moving a lever or shutter speed dial to that particular setting on the shutter speed scale. Unlike f/stops, the shutter speed you select must align exactly with the index mark. You cannot select a shutter speed in between two indicated shutter speeds. On the shutter

speed dial, the top part of the fraction (numerator) is not indicated; for example, the shutter speeds 1/60, 1/125, 1/250, and so forth, are indicated as 60, 125, and 250.

When a camera with a focal-plane shutter is used with an electronic flash, a predetermined shutter speed must be set. At this speed the shutter and flash unit are said to be in synchronization. When the flash and shutter are synchronized, the shutter opening is wide open at the same instant the flash fires. Usually, the slowest shutter speed that syncs with a flash unit is indicated in red or another off color or a lightning bolt symbol on the shutter speed dial.

Function

The shutter serves two functions: controlling the duration of the exposure and controlling subject movement. These two functions are entirely separate and distinct. You must determine the shutter speed required for each condition. After determining the shutter speed, you select the f/stop that provides the correct exposure for the film speed and lighting conditions. Normally, the duration of exposure is short enough to prevent image blurring. You can always set the shutter speed faster than the speed required to stop image motion, but it should not be longer if you want the image to be sharp; for example, when a shutter speed of 1/125 is sufficient to stop subject motion, you can set the shutter speed to 1/250 or faster, but not at 1/60 if you want to stop the motion and produce a sharp image. Each time you change the shutter speed, the diaphragm is adjusted to produce a properly exposed image.

The correct sequence in determining the diaphragm and shutter to produce a properly exposed negative is as follows:

1. Compose and focus the image.
2. Stop down or open up the diaphragm until the desired depth of field is achieved.
3. Select the shutter speed that will produce a proper exposure when combined with your aperture setting.
4. Determine whether the shutter speed is fast enough to prevent image blurring.
5. If the selected shutter speed is too slow, reset it to a faster speed and open up the aperture accordingly.

When you increase the shutter speed, you compromise and lose depth of field. Sometimes this is the only way to produce a useable image. If you cannot

sacrifice some depth of field, there are several alternatives you can use: select a faster film, increase the camera-to-subject distance, select a shorter focal length lens, or change the camera angle, so the relative motion of the subject to the camera is decreased.

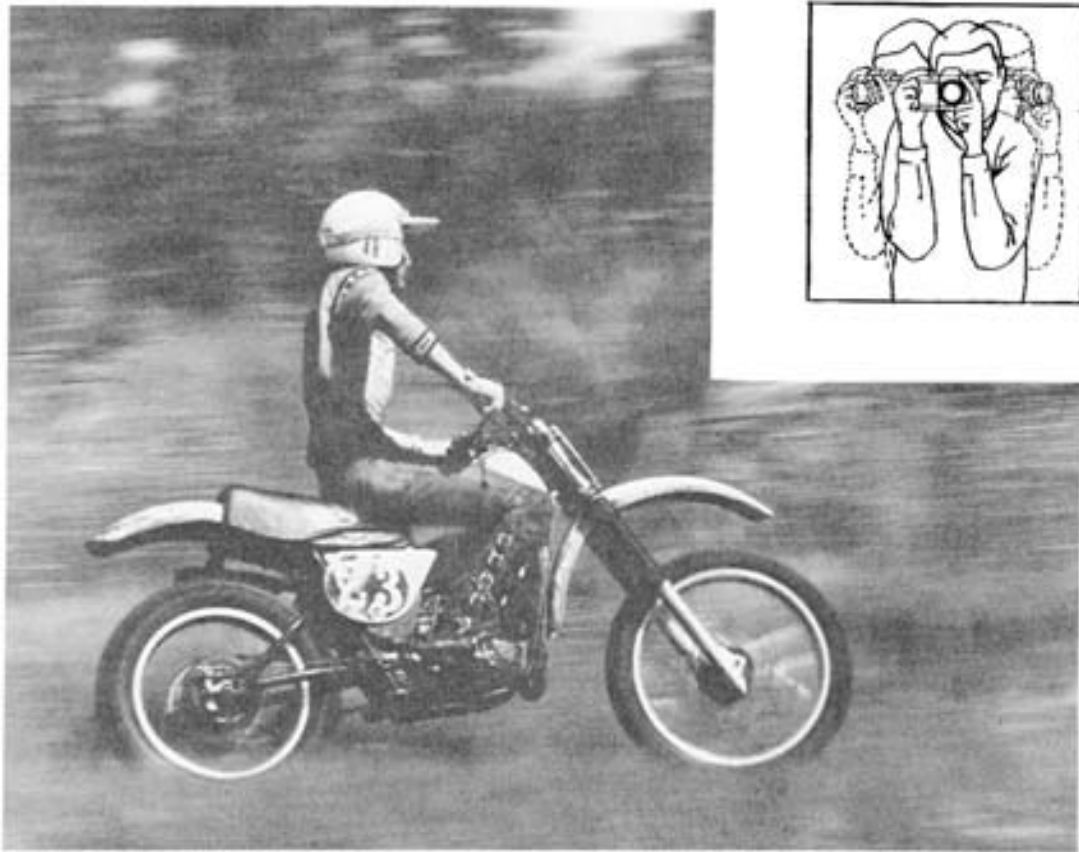
Selecting the Shutter Speed

Knowing what shutter speed produces the right effect for each picture is a skill you, as a Navy Photographer's Mate, must acquire. Your pictures may easily be spoiled by movement of either the camera or the subject. In some instances, this movement can actually improve your photographs.

Novice photographers often find it hard to believe anything can happen during the brief instant the camera shutter is open. This is not true; images can be blurred when a shutter speed as fast as 1/250 of a second is used; for example, when the camera or subject moves during the fraction of a second the shutter is open, the image may be recorded on the film as a blur. Blurring caused by camera movement is noticeable in all images within the photograph. When blurring is caused by subject movement only, the background or some other part of the scene will be sharp, and the subject blurred. Camera movement blur can be corrected by supporting the camera properly or by using a faster shutter speed. Subject image movement can be reduced by using either a faster shutter speed or by panning the subject.

As explained previously, when a faster shutter speed is used, a wider aperture is required to produce correct exposure. For this reason you should know what minimum shutter speed is required to stop or freeze different actions. You must take into account conditions that exist when taking photographs. Strong winds, vibrations, or a ship rolling from side to side must be considered. There is a general rule you must follow for determining shutter speed when handholding a camera. The slowest shutter speed recommended to prevent camera movement blur is to set the shutter speed so it matches the focal length of the lens. When a shutter speed does not exist for the focal length of the lens, select the next highest shutter speed; for example, 1/30 second for a 25mm lens, 1/50 second for a 50mm lens, 1/125 second for a 100mm lens, 1/250 second for a 200mm lens, and so forth.

When a subject is in motion during exposure, the image on the film also moves. Even though the duration of exposure may only be 1/1000 of a second, the image moves a small fraction of an inch during this time. The problem you encounter is how much image movement



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Figure 4-17.—Panning with a moving object.

can be tolerated before it becomes objectionable and adjust your shutter speed accordingly. To determine what forms an objectionable blurring of the image, you must visualize how the photograph is going to be used. An image of a contact print can be much blurrier than an image that is magnified many times. A print that is viewed up close must be much sharper than a print viewed from a distance.

Once you know how the photograph is to be used, you can determine the shutter speed required to produce an acceptably sharp image. In some situations, it may not be possible to produce an image that is completely sharp. When you want a sharp image of a fast-moving object, use the **panning** technique. When using the panning technique, you move the camera and follow the action of the subject until you make the exposure. This method may blur the background but can provide a sharp image of a moving object even at relatively slow shutter speeds (fig. 4-17).

There are five factors that determine the distance an image moves on the film during exposure. You must consider these factors each time you photograph a moving object. These five factors are as follows:

1. The lens-to-subject distance
2. The lens focal length
3. The speed of the object perpendicular to the lens axis
4. The direction of movement
5. The exposure time

Whenever one of these five factors change, the distance the image moves during exposure also changes. The first four factors determine the speed that the image moves across the film. The fifth factor limits the time it is allowed to move, thereby limiting the distance of image movement.

Subject movement on the film plane is greatest when the subject is moving across the angle of view of

the lens (perpendicular to the lens axis). For example, when the subject is moving straight towards or straight away from the camera, it may appear as though it is hardly moving and a fast shutter speed is not required to produce a sharp image; however, when that same subject moves at the same speed across the field of view of the camera, the speed of the subject appears much faster. A faster shutter speed is required to stop the action in this case.

The camera-to-subject distance also affects the amount of image movement at the film plane; for example, a car moving across your field of view at 55 mph from a distance of 700 yards appears to be moving slowly. The same car moving at 55 mph and only 15 feet away appears to be moving very fast; therefore, the closer a moving object is to the camera, the faster the shutter speed must be to capture a sharp image. When the subject is moving diagonally across your angle of view, movement is more apparent than when moving straight away or toward the camera, but less apparent than when moving straight across the field of view.

Remember, long-focal-length lenses exaggerate the effects of camera and subject movement, and short-focal-length lenses reduce the effect.

Experience and common sense are your best guides for determining shutter speed that will minimize image movement, but the following can be used as a guide to help make these determinations:

- Double the shutter speed when the subject speed is doubled.
- Halve the speed when the speed of the subject is halved.
- Double the shutter speed when the camera-to-subject distance is halved.
- Halve the shutter speed when the camera-to-subject distance is doubled.
- Double the shutter speed when the focal length is doubled.
- Halve the shutter speed when the focal length is halved.
- When in doubt, use the next higher shutter speed.

There are mathematical formulas used to determine appropriate shutter speeds for subjects moving at all speeds when photographed with various lenses, but the use of these formulas is not practical. Table 4-2 shows stop motion relationships when a 50mm lens is used. This table is not intended to be memorized but is only

intended to provide a better understanding of the relationship of subject motion, distance, and direction.

COMBINING APERTURE AND SHUTTER SPEED

So far three camera controls have been discussed separately: focus, aperture, and shutter. Focus is the most straightforward because it is used to produce a sharp image of the subject. Aperture and shutter each affect the image in two distinct ways. They both control the amount of light that makes the exposure, and they both affect image sharpness. The aperture alters depth of field, and the shutter controls the image movement or blur.

The light-sensitive material must receive the correct amount of light to produce a quality photograph. Under most lighting conditions, it does not matter whether you use a wide aperture with a fast shutter speed or a small aperture with a slow shutter speed. When the combination is correct, both provide the same amount of exposure.

Aperture and shutter speeds each have a doubling and halving effect on exposure. This doubling and halving relationship of aperture and shutter allows you to combine different f/stops and shutter speeds to alter the image, while, at the same time, admitting the same amount of exposure to the light-sensitive material; for example, you have determined that the correct camera settings for your subject is 1/125 second, at f/16. Instead of using this combination of shutter speed and f/stop, you could double the shutter speed (to stop action) and halve the f/stop. In this example your new camera setting could be 1/250 second at f/11, 1/500 second at f/8, or 1/1000 second at f/5.6, and so on. Or when you need more depth of field, 1/60 second at f/22 or 1/30 second at f/32, and so on, can be used. These shutter speed and f/stop combinations are called equivalent exposures. Equivalent exposures are used to control depth of field and to stop motion. Table 4-3 shows some equivalent exposures of a typical situation.

Each of the combinations in table 4-3 produces the same exposure; however, the amount of depth of field and image blur are different in each image. The combination of shutter speed and f/stop is used to best capture the subject and effect you want to create.

You should use a light meter for most of the photographs you take. The light meter provides you with a number of f/stop and shutter speed combinations; however, depending on the situation, the level of light alone can determine the camera settings. For example,

Table 4-2.—Action Stopping Shutter Speeds for Normal-Focal-Length Lenses

Speed MPH	Type of Action	Distance	Direction of Action		
			Across Field of View	Diagonally	Straight Toward or Away
5	Slow walk, working with the hands	12	1/500	1/250	1/125
		25	1/250	1/125	1/60
		50	1/125	1/60	1/30
		100	1/60	1/30	1/15
10	Fast walk/ work, slow-moving vehicles	12	1/1000	1/500	1/250
		25	1/500	1/250	1/125
		50	1/250	1/125	1/60
		100	1/125	1/60	1/30
25	Running, sports, very active people, vehicles moving at a moderate speed	12	1/2000	1/1000	1/500
		25	1/1000	1/500	1/250
		50	1/500	1/250	1/125
		100	1/250	1/125	1/60
100	Very fast-moving vehicles and aircraft	25	1/2000	1/2000	1/1000
		50	1/1000	1/1000	1/500
		100	1/500	1/500	1/250
		200		1/250	1/125

Table 4-3.—Equivalent Exposures

Shutter Speed	f/stop
1/2000	f/4
1/1000	f/5.6
1/500	f/8
1/250	f/11
1/125	f/16
1/60	f/22
1/30	f/32
1/15	f/64

the light level may be so low that you have to use a slow shutter speed and the largest f/stop to get the proper exposure. After determining the correct exposure, you can decide how to present the subject. Remember, depth of field can be used to emphasize your subject, and shutter speed affects subject blur.

EXPOSURE CONTROL

The *term exposure* in photography means the amount of light that reaches the film or other light-sensitive material. The mathematical formula for exposure is the product of light intensity and the amount of time that the light acts on a light-sensitive material. There are two ways a formula is presented in photographic publications. They are as follows:

$$E = I \times T$$

and

$$H = E \times T$$

Where:

E or H = Exposure (lux-seconds or meter-candle seconds)

I or E = Intensity or illuminance (lux or meter candles)

T = Time (seconds)

Both of these formulas represent exposure. The second formula is presented in the more current publications.

As explained previously, camera exposures are controlled by the shutter speed and aperture. The shutter speed controls the time light is permitted to reach the film. The illuminance (or intensity as it is sometimes called) is controlled by the aperture of the camera. The term *illuminance* means the amount of light reaching the film plane. By adjusting these controls, you allow the correct amount of light to reach the film. The correct amount of light varies, depending on the film speed. Correct exposure for negative films is defined as the exposure required to produce a negative that yields excellent prints with the least amount of difficulty. Correct exposure for color reversal film produces color images in densities that represent the appearance of the original scene.

FACTORS THAT AFFECT EXPOSURE

You must consider four major factors that affect exposure when you are taking photographs. These factors are as follows:

- Film speed (ISO)
- Reflected properties of the subject
- Lighting conditions
- Bellows extension

Film Speed

As explained in chapter 2, ISO is a system of rating film speed or sensitivity to light. ISO numbers are arithmetic; that is, an ISO number that is twice as high as another ISO number is twice as sensitive to light. Each time an ISO film speed is doubled, the exposure should be halved. When the ISO is halved, the exposure should be doubled; for example, if the correct camera setting is 1/250 second at f/16 with ISO 100 film, the same subject photographed with ISO 200 film would require only half the exposure or 1/500 second at W16 or 1/250 second at f/22, and so on.

Daylight Conditions

The two primary considerations for determining your exposure under daylight conditions are the intensity and the direction of daylight.

INTENSITY.—From early morning until later evening, even on a clear day, the intensity of daylight is constantly changing as the sun rises, moves across the sky, and sets. Although the intensity of daylight varies throughout the day, the time between about 2 hours after

sunrise until about 2 hours before sunset is considered a time when the light intensity for the same geographical location remains constant for exposure purposes.

Daylight conditions for camera exposures can be divided into the following five intensity conditions.

Bright Sun on Light Sand or Snow.—Bright sun is daylight that is not affected by any apparent atmospheric interference. Because of the amount of reflected light from sand or snow, the intensity of light in these scenes is greater than that of a scene with average reflectance. This greater intensity of light requires a higher f/stop or a faster shutter speed to provide approximately one half of the exposure required for the basic exposure with bright or hazy sun.

Bright Sun.—This type of daylight illumination is produced on a bright, sunny day where distinct shadows are present. Bright sun is the condition that determines the BASIC EXPOSURE for an average scene.

Cloudy Bright.—A weak, hazy sun is the result of a heavier or thicker haze or cloud cover as compared to the bright sun condition. The condition causes a decrease in the daylight intensity and an increase in the diffusion of daylight. This lighting condition produces shadows that are soft or indistinct. A lower f/stop or slower shutter speed is required to approximately double the basic exposure to compensate for this decreased daylight intensity.

Cloudy.—Cloudy conditions are the result of a layer of clouds that further reduce the intensity of daylight and diffuse the light completely. This condition occurs on an overcast day when the position of the sun can be located only as a bright area in the clouds. Shadows are not present under this lighting condition. The scene brightness range is low and therefore photographs made during this condition usually lack good contrast. An increase of four times (two f/stops) from the basic exposure is required to compensate for the decreased intensity of light.

Heavy Overcast or Open Shade.—This condition exists when the position of the sun cannot be located. The scene brightness range is low and therefore photographs made during heavy overcast conditions usually lack good contrast. An increase of eight times (three f/stops) to the exposure is required horn the basic exposure to compensate for the decreased intensity of light.

DIRECTION.—The direction of the sun or light source illuminating your subject also affects your basic exposure. The camera settings recommended for films

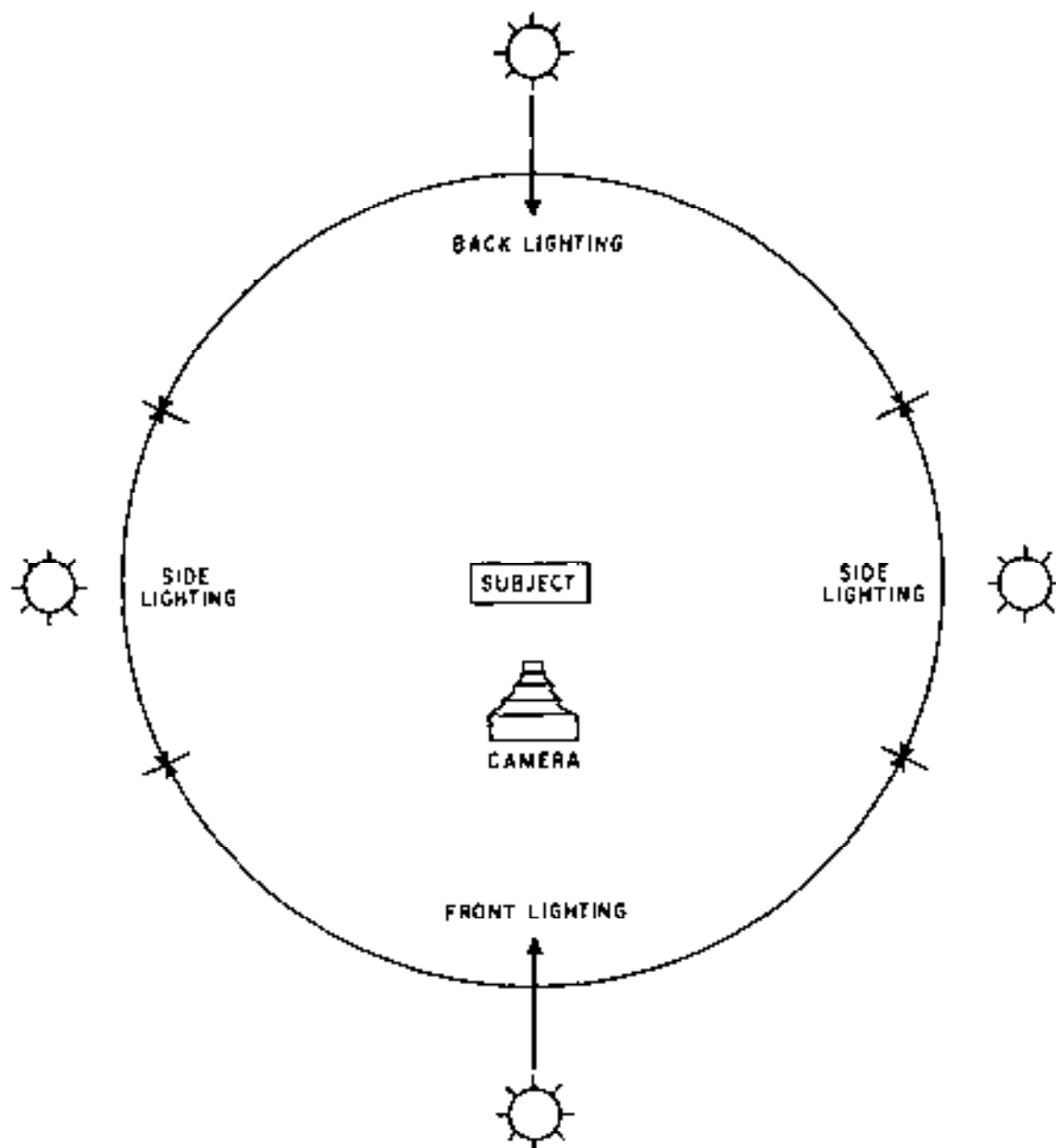


Figure 4-18.—Lighting directions.

exposed during bright sun on light sand or snow, bright sun, cloudy bright, and cloudy conditions are for scenes that are front-lighted only. The direction of the light source from heavy overcast or open shade conditions does not affect exposure because it is extremely diffused and the direction is not apparent.

The amount of light reflected from the scene changes, as the direction of the light changes. As the lighting direction is changed from in front of the subject to behind the subject, the amount of light reflected from the subject is reduced; therefore, depending on the

direction from which the light is falling on your subject, you may have to compensate the camera exposure. There are three basic lighting directions with which you must become familiar. These lighting directions are as follows: frontlighting, side lighting, and backlighting (fig. 4-18).

Frontlighting.—Whenever light originates from behind the camera and illuminates the front of the subject, it is called frontlighting. A subject appears brightest and reflects the most light toward the camera when the subject is front-lighted.

Side Lighting.—As the camera is moved in an arc away from frontlighting, less light is reflected from the subject into the lens. Whenever the light source has a 90-degree relationship with the camera, the incident light on the subject is called side lighting. In side lighting situations, part of the subject is in shadow. Photographs of side-lighted scenes usually require two times (one f/stop) more exposure than frontlighted subjects when you want detail in the shadows.

Backlighting.—When the light source is directly behind the subject and aimed toward the camera, it is called backlighting. In back-lighted situations, the subject is in shadow and the light reflected from the subject toward the camera is decreased greatly. A silhouette effect (no shadow detail) of a back-lighted scene is produced by closing down one f/stop from the basic exposure. If shadow detail is desired, an increase of four times (two f/stops) from the basic exposure is required.

Reflection Properties

Otherwise the intensity and direction of light falling on the subject, the texture of the surface, and the colors and shades of the scene also have an effect on film exposure.

SURFACE TEXTURE.—Smooth, glossy surfaces scatter or diffuse reflected light very little; therefore, these objects reflect a large percentage of light to the lens. Rough surfaces greatly scatter and diffuse light. Less light from rough surfaces is reflected to the lens.

COLORS AND SHADES.—Not all light that falls on the surface of a subject is reflected. A brilliant white object reflects a high percentage of incident light, and a black object reflects very little of the light. Between these two extremes are the numerous tones of gray and colors of various hues and brightnesses. Each colored or gray object in a scene reflects a specific amount of light. A scene that consists primarily of light-colored or light-toned objects usually requires an exposure compensation to decrease the exposure as compared to the basic exposure for an average scene. A scene that consists primarily of dark-colored or dark-toned objects usually requires an exposure compensation to provide more exposure as compared to the basic exposure for an average scene. The primary reason light scenes and dark scenes require less exposure and more exposure, respectively, as compared to the average scene, is to maintain detail in the highlight of the light scenes and detail in the shadow areas of the dark scenes.

The color quality of a light source also has an effect on the amount of light reflected from an object; for example, a blue object does not reflect as much light when illuminated with a red light source, as compared to the same object being illuminated with a blue light source. This difference in reflectance is caused by the blue object absorbing the reddish light and reflecting the bluish light.

Any man-made light is an artificial light source. This light may be a tungsten lamp, a fluorescent lamp, a mercury-vapor lamp, and so on. The same factors that affect exposures for daylight apply to artificial light as well. Artificial light has some advantages. Distance, direction, and color temperature can be controlled using these light sources.

Bellows Extension

When copy cameras or view cameras are used, many subjects are photographed at very close distances. When you are photographing at these close distances, it is not uncommon for the bellows of these cameras to extend beyond one focal length. The farther the bellows are extended, the larger the image size produced at the film plane. When a 1:1 subject to image ratio (on the film plane) is needed, the bellows are extended to two times the focal length of the lens; for example, when a 6-inch lens is used to produce a 1:1 ratio, the bellows are extended to 12 inches. The distance the bellows are extended is determined by measuring the distance from the optical center of the lens to the film plane.

When the bellows are extended beyond one focal length, an exposure compensation is needed. Because light must travel a greater distance, some of the intensity is lost. This loss of light intensity must be compensated for by opening up the aperture or increasing the exposure time. There are two formulas used to adjust the exposure when the bellows are extended.

Generally, the exposure time is extended to compensate for bellows extension, because view cameras and copy cameras are mounted securely and the critical aperture is used to produce the sharpest image. To adjust the exposure time, use the following formula:

$$\left(\frac{BE^2}{FL} \right) \times T = \text{NEW EXPOSURE TIME}$$

Where: BE = Bellows extension

FL = Lens focal length

T = Indicated exposure time

EXAMPLE: You are photographing a document with a camera that has a 5-inch lens and the bellows are extended 7 inches. Your light meter indicated an exposure of 1/30 second at f/4. The new exposure time is determined as follows:

$$\left(\frac{7}{5}\right)^2 \times \frac{1}{30} = 1.96 \times \frac{1}{30} = \frac{1.96}{30} = \frac{1}{15} \text{ SECOND.}$$

To adjust the aperture, use the following formula:

$$\frac{\text{indicated } f/\text{stop} \times \text{focal length}}{\text{lens-to-film distance}} = \text{adjusted } f/\text{stop}$$

EXAMPLE: A 4-inch lens is extended to 4 inches beyond one focal length. The original camera settings are 5 seconds at f/11. Using the above formula, the problem is solved as follows:

$$\frac{11 \times 4}{8} = \frac{44}{8} = 5.55 \text{ or } f/5.6.$$

f/16 RULE

You should use a light meter for most of the photographs that you take in the field. These light meters are either built into the camera or are separate hand-held models; however, there may be times when your light meter does not operate properly, or you do not have time to use it in order to “grab” an awesome shot. The f/16 rule of exposure allows you to determine basic camera exposure settings for both black-and-white and color photography without the aid of electronic devices.

The f/16 rule states: The basic exposure for an average subject in bright frontal sunlight is

$$f/16 \text{ at: } \frac{1}{\text{film speed}}$$

Therefore, to calculate the BASIC exposure for bright, sunny conditions, set f/16 on the camera lens and use the ISO speed of the film for the shutter speed; for example, when you use ISO 125 film, set the shutter speed at 1/125 second and the lens aperture at f/16. For ISO 64 film, set the shutter speed at 1/60 second and the lens aperture at f/16, and so on. When the camera does not have a shutter speed corresponding to the ISO of the film, use the shutter speed that is closest to the ISO of the film.

The f/16 rule is based on the correct exposure for an average subject under bright, sunny conditions. If the sun goes behind a cloud, however, then the lighting on the subject is decreased and you must change the basic

exposure. The aperture settings for different daylight intensities are as follows:

- Bright sun on light sand or snow-f/22
- Bright sun-f/16
- Cloudy bright-f/11
- Cloudy-f/8
- Heavy overcast or open shade-f/5.6

For each of these different daylight intensity situations, you begin with the ISO speed to determine the shutter speed, set the aperture to f/16, and open up or stop down the aperture for the lighting conditions.

After calculating the exposure, you can change the setting to any equivalent exposure; for example, if you determine the required exposure to be 1/500 second at f/5.6 but you wish to use a small aperture for greater depth of field, you can change the setting to 1/60 second at f/16.

Remember, the f/16 rule provides you with a basic exposure for front-lighted subjects only. When the subjects are side-lighted or back-lighted, you must double or quadruple the exposure, respectively.

Because many cameras are fully automatic, you may wonder why you need to know basic exposure. There are three good reasons for knowing and understanding the basic principles of exposure. First, you want to control the depth of field and stop action instead of the camera controlling it. Second, a light meter cannot think. All a light meter does is respond to the light it receives. You must know when to override the camera; for example, when the subject is side-lighted or back-lighted. Third, meters are mechanical and can fail. They can be inconsistent, consistently wrong, or fail altogether. When you can work out in your head, roughly what the camera exposures should be, you will know when the camera or light meter is wrong. Knowing when a light meter is giving incorrect readings could make the difference between success or failure of an important photographic assignment.

LIGHT METERS

The correct use of a light meter greatly increases the accuracy in determining your camera exposure. You should also understand that the incorrect use of a light meter can result in consistently unacceptable results. To assure consistently acceptable exposures, you must become thoroughly proficient with the correct operation of a light meter.



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Figure 4-19.—Hand-held light meter.

A light meter can be either built into the camera or a separate hand-held unit (fig. 4-19). Both types are sensitive instruments and should be handled with care. There is little maintenance, but they do require batteries. When you think a light meter is not working properly, have it checked by a qualified technician. Always be sure to check your equipment before leaving on an assignment. Like all camera equipment, careless handling and excessive heat and moisture limit the life of a light meter. A light meter must not be subjected to high temperatures for prolonged periods of time. Unless the light meter is designed for underwater photography, it should be protected in inclement weather.

LIGHT METER READINGS

There are two methods of measuring light with hand-held light meters. These two methods are the incident-light method and the reflected-light method.

Incident-Light Method

This method requires the use of an incident-light meter. An incident-light meter has a diffusing dome that covers the photoelectric cell. When an incident-light meter reading is taken, the meter is held at the position of the subject with the photoelectric cell pointed toward the camera. The meter measures the light falling upon the scene. The incident-light method of measuring light is used extensively in motion-media photography and gives fast accurate results in all photography.

Most light meters are designed for use as either incident-light or reflected-light meters. By removing the diffusion dome from the photoelectric cell, you can use the meter to measure reflected light.

Reflected-Light Method

When you are taking this type of light-meter reading, the diffusing dome should be removed from the photoelectric cell and the meter pointed toward the subject.

A reflected-light meter receives and measures the light reflected from a scene within the angle of acceptance of the meter. The term *angle of acceptance* compares to the term *angle of view* of a lens. Both are predetermined during manufacturing. The angle of acceptance and the distance between the meter and the scene are the controlling factors as to how much of the reflected light from the scene is measured by the meter. When the angle of acceptance is greater than the angle of view of a lens (when using a telephoto lens for example), the meter should be moved closer to the scene.

Light meters that are built into the camera are reflected-light meters. When these meters are used, the angle of acceptance is not greater than the angle of view of the lens being used. The meter measures the light from the scene as seen by the lens.

Some reflected-light meters have angles of acceptance between 1 and 4 degrees. These meters can be used from a distance to measure the reflected light from specific objects within a scene. Exposure meters with angles of reflectance this small are called **spot meters**.

LIGHT METER OPERATION

You must understand the way light meters operate to determine whether the information they provide is accurate. No matter what type of light meter you use, it

is an electrical-mechanical device that can only provide information for which it is designed. You are responsible for translating this information into useful exposure data.

Light meters are calibrated to see one shade only—middle gray. This means the information that the meter provides, no matter how much light is falling on the subject or what the reflection characteristics are, reads the subject the same as though it were middle or neutral gray (18-percent gray). Theoretically, if you take a reflected-exposure meter reading from an 18-percent gray card and expose your film according to the reading, the result should be a picture that matches the tone of the gray card exactly; however, when you take a light meter reading of a white or black object, the light meter still reads the objects as though they were 18-percent gray.

When you take a photograph that includes a gray, white, and black card, you will see how, depending on where you take the light meter readings, they affect your photograph; for example, when you take the light meter reading from the black card, the final picture reproduces the black as middle gray, and the gray and white cards as white. When you take the reflected-light meter reading from the white card, just the opposite occurs. In your final picture, the white card reproduces as middle gray, and the gray and black cards reproduce as black.

This example demonstrates overexposure and underexposure. When the reading was taken from the black card, the meter raised the black tone to middle gray, and the gray card tone was also raised so it reproduced as white. Thus both the black and gray cards were overexposed. The opposite occurred when the exposure was based on the reading from the white card. The white tone was lowered to middle gray and the gray card tone to black, resulting from underexposure. Only a light meter reading taken from the gray card allows all three cards to be imaged at their true tone.

A more practical example on the way a light meter reads 18-percent gray is illustrated in the following example. Suppose you are going to photograph a ship alongside a pier. Bright sunlight is striking the ship from the side, causing part of the ship to be in shadow. This creates a brightness difference between the highlight area and the shadow area. Both highlight and shadow areas are equal in size and importance. When you get close to the ship and take a reflected meter reading of the highlight area alone, you expect the finished photograph, like the white card in the above example, to be middle gray. When you stop down the aperture to the recommended exposure of the meter, you are also

reducing the amount of exposure from the shadow area. This results in a loss of detail in the shadow area of the ship, because it is underexposed. The opposite effect occurs when you take a meter reading from the shadow area. In this case, the shadow tones are raised to middle gray and have detail, but the highlights are overexposed and completely “washed out.”

If, however, there was an area in this scene whose tone was midway between the highlight and shadow areas, you could use it to take your light meter reading (like the gray card was used in the previous example). In this example, assume there is no tone midway between the two extremes. You can still get an accurate light meter reading of the entire ship. Since the highlight and shadow areas are of equal size, the *average* light meter reading you get will represent a tone that is midway between the two extremes.

REFLECTED LIGHT METER READING VARIATIONS

There are variations of light meter readings used to provide accurate light meter readings of different types of scenes. These methods are as follows: the integrated, or average, method, the brightness range method, the darkest object method, the brightest object method, the substitution method, and the bracketing method.

Integrated, or Average, Method

The technique of making reflected-light meter readings from the camera position is called the *integrated*, or *average*, method. This method was used and explained in the examples above. This method is accurate for the majority of photographs taken.

The integrated, or average, method of measuring reflected light is acceptable for scenes that consist of approximately equal portions of light and dark areas; however, when a scene is composed of either predominately light or dark areas, the meter reading may not be accurate.

The reason for these inaccurate meter readings can be more easily understood by using an example of photographing a checkerboard with alternating black-and-white squares. When the meter is held at a distance to include the entire board, the reflected light from both the black and the white squares influence the meter, so an average reading results. The light measured from this position is the integrated sum of both the white and the black squares, as though the checkerboard were one gray tone. The light meter reading from this point should produce an acceptable image.

If you hold the meter so close to one of the white squares that the black squares have no effect on the meter reading, the reading is higher than the integrated reading and the meter indicates that the scene requires less exposure. The same principle applies when a reading is taken close to a black square. The reading indicates that the scene requires more exposure. Each of the meter readings is a measurement of 18-percent gray. You can apply this checkerboard example when you photograph scenes that are predominately light or dark. Compensation is required to expose such scenes correctly.

As a general guide, you should double the indicated exposure when the light measurement is taken from a predominately light scene and detail is desired in the shadows. When you take a light meter reading from a predominately dark scene and detail is desired in the highlight areas, you should reduce the exposure by one half.

Brightness Range Method

This method requires you to take two readings from the scene: one from the highlight area where detail is desired and another from the shadow area where detail is desired. You then base your exposure on a point midway between the two readings.

The brightness range method of determining exposures for most scenes usually provides detail in both the highlight and the shadow areas. An exception to this is when the exposure latitude of a film is not capable of recording the brightness range of the scene. This can occur with scenes that have extremely great brightness ranges. A scene brightness range is the difference between the brightest and the darkest areas of a scene and is usually expressed as a ratio. The average brightness range of a normal scene is 160:1. Films used for pictorial work are capable of reproducing this brightness range. When the scene exceeds a brightness range of 160:1, you must compromise the exposure. This compromise can be as follows:

- Underexpose and sacrifice shadow detail to retain highlight detail.
- Overexpose and sacrifice highlight detail to retain shadow detail.
- Do not compensate and expose for the midtones and sacrifice both highlight detail and shadow detail.

Darkest Object Method

The darkest object method of determining exposures is actually a variation of the brightness range method. When you desire detail in the shadow area or darkest object within the scene, you take the light meter reading from this area. This method actually overexposes the film overall, causing the highlight areas of the scene to be greatly overexposed. This overexposure occurs because the light meter averages the light reflected from the shadow area and indicates an exposure to produce middle gray. When a great amount of detail is not needed in the shadow area and you want to expose the overall scene normally, you can take your light meter reading from the darkest object or shadow area and stop down two f/stops. This method provides a good overall film exposure of the shadows, midtones, and highlights.

Brightest Object Method

Another variation of the brightness range method is the brightest object method. The brightest object method of calculating exposures is used when a highlight area within a scene is the only area within the scene from which you can take a light meter reading. This method can also be used when you want to record detail in the highlight area. In both situations, you take only one light meter reading of an important highlight area. When you do not want the highlight to record as a middle-gray tone and desire a good overall exposure of the scene, you simply open up two or three f/stops from the indicated exposure. When you need maximum detail in the highlight area, you can use the reading that the light meter provides. This records the highlight area as medium gray. This method underexposes the film in other areas of the scene that reflect less light.

Substitution Method

With the substitution method, you replace an object within the scene with an object, such as a gray card. You then take a reflected-light meter reading from this object. You use this method when the other methods of determining exposure are not possible. Such situations may be caused by excessive distance between the light meter and the scene, barriers in front of the scene, or the size of the scene makes it impossible to get an accurate light meter reading. The substitution method is often used in studio situations where objects may be too small to obtain an accurate light meter reading.

You should select substitution objects that match the light reflectance quality of the object in the scene; for

example, a white card can be used to substitute highlight areas of a distant scene. A dark or a black card can be used to substitute a shadow area, an 18-percent gray card can be used to represent middle gray, or the back of palm of your hand can be used to substitute a gray tone.

When the substitution method is used, take the light meter reading from the substituted item under similar lighting conditions that exist in the scene. When the scene is in bright sunlight, the substituted object must also be in bright sunlight. Likewise, a scene in shade requires a substitute light meter reading in shade.

You can use each of the methods discussed previously with the substitution method. An 18-percent gray card can be used for the integrated or averaging methods, a dark and a light card can be used for the scene brightness range method, a dark card for the darkest object method, and a light card for the brightest object method.

Bracketing Method

There are times when unusual lighting or subject brightness prevents you from getting an accurate light meter reading. In these cases, a good insurance policy is to bracket your exposure. To bracket, you should take one picture at the exposure indicated by the light meter, and then take two more exposures: one at one f/stop under the indicated exposure and another at one f/stop over the indicated exposure.

When you are in doubt about the correct exposure for a negative type of film, it is always better to overexpose than underexpose. Even though overexposure produces excess densities in the negative, it still provides a useable image that can normally be corrected in the printing stage. When underexposed, if the image does not exist on the film, no corrective printing techniques can provide image detail.

When shooting reversal film (slides), you should bracket in 1/2 f/stop intervals. Because the exposure latitude of slide film is limited to $\pm 1/2$ f/stop, you should bracket in 1/2 f/stop increments, both under and over the indicated light meter exposure reading. Color slides that are 1/2 f/stop underexposed have more color saturation and are more usable than ones that are 1/2 f/stop overexposed and appear “washed out” and light.

TAKING LIGHT METER READINGS

When taking light meter readings, you must be sure the reflected light that influences your light meter is actually from the object you want to photograph. Stray

light, backlighting, large dark areas, and shadows can all cause erroneous light meter readings. When using a light meter, be sure that shadows are not cast from the light meter, camera, or yourself. When a hand-held light meter is used, the distance of the light meter to the subject should not exceed the shortest dimension of the object; for example, when taking a light meter reading of a person’s face that is approximately 9x6 inches, you should hold your light meter about 6 inches from the face of your subject when taking the meter reading. When using a light meter that is built into a camera, be sure to focus on the image before taking a light meter reading.

CAUSES OF FALSE LIGHT METER READINGS

There are a number of reasons why light meters give erroneous or bad readings that produce underexposed images. You can prevent these bad readings by being aware of the conditions that cause them.

Light Entering the Viewfinder

Light entering the viewfinder and falling on the viewing screen can cause underexposure. Most TTL meters read the light falling on the viewing screen from the lens. When strong lighting is coming from behind the camera, it can influence the light meter. When an occasional underexposed frame in an otherwise successful series occurs, the cause may be light entering the SLR viewfinder. Make a point of shielding the viewfinder if you do not have a rubber eyecup. When you use a tripod, have the camera set on automatic and cap the viewfinder to prevent exposure errors.

Incorrect Film Speed Setting

When the majority of frames on a length of film are consistently underexposed or overexposed, the most likely cause is you have the wrong ISO set on the film speed dial. For black-and-white film and color reversal film, it may be possible to compensate for this in developing if detected before the film is processed.

Bright Subject

A bright object or highlight area can affect the sensing area of a spot or center-weighted TTL meter. This results in an underexposed image. To prevent this from occurring, you should ensure the sensor is pointed directly at a midtone within the scene, and use this as the camera exposure. When you frame and compose



Figure 4-20.—4x5 Graphic View II camera.

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your image, the light meter may indicate a different setting. Be sure to leave your camera set at the indicated midtone setting. Normally, light meters that take integrated or averaged readings of the field of view cannot be fooled in this instance. But remember, even integrated systems cannot cope with extremely bright areas that take up a significant portion of the frame.

Bright Background, Dark Subject

When you are taking photographs that are back-lighted or against a light background, there is always the danger of underexposing the main subject (unless you use special techniques to fill in shadows, such as using a reflector or a flash unit). Be careful to take a reading from only the shadow side of the subject in these situations.

Too Little Light

The most frequent cause of underexposure is trying to take pictures when there is not enough light. Light meter readings are not very accurate at these low-light levels. When you want to make photographs under these conditions, be sure to use a tripod and bracket to provide more exposure than indicated by the light meter. You also can switch to a higher ISO film. Some of the high-speed films marketed today can provide remarkable results.

There are several other causes that may cause your images to be exposed incorrectly. Some of the most common causes are listed as follows:

- Wrong camera settings are set when transferring information from a hand-held light meter to the

camera. This can also occur when you attempt to override an automatic camera.

- Using a camera with TTL metering and placing a color filter with a high-filter factor over the lens.
- Wrong aperture setting when flash is used.
- Shutter speed is not synchronized with camera flash.
- Aperture or shutter speed setting is knocked while carrying the camera. Always check the camera setting before taking a photograph.
- Weak or incorrect battery in the light meter.

VIEW CAMERA

The view camera (fig. 4-20) is a flexible and useful camera that, due to laziness, is frequently overlooked by Navy imaging personnel. Through the use of rising or falling fronts, swings, tilts, and shifts, you have complete control over the composition of the subject. View cameras are excellent for photographing construction, large groups of people, landscapes, small parts, damaged material, buildings, and many other subjects, because distortion can be controlled or corrected. The camera has bellows that may be extended to make it suitable for copy work and photographing small objects. Most view cameras used in the Navy use 4x5 sheet film. View cameras are not suitable for sports or uncontrolled action situations where a hand-held camera is needed.

View cameras do not have viewfinders or range finders. Viewing and focusing is done on ground glass. The ground glass is located exactly the same distance from the lens as the film; therefore, the image viewed on the ground glass is the same that is recorded on the film. View cameras have interchangeable lenses and between-the-lens leaf shutters.

BASIC CONTROLS AND FUNCTIONS

All view cameras are basically the same. Generally, all view cameras have the following standard parts:

- Monorail or bed. Serves as the base or support to hold all the other components.
- Front lens standard. Permits the lens to be locked into any position on the monorail. The front lens standard also permits the lens to swing, slide, tilt, rise, and fall.
- Rear standard. The rear standard holds the film holder and has swing, tilt, and slide controls.

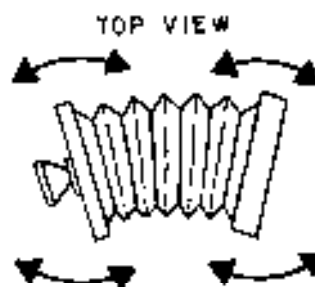


Figure 4-21—Swing movement of front and rear standards.

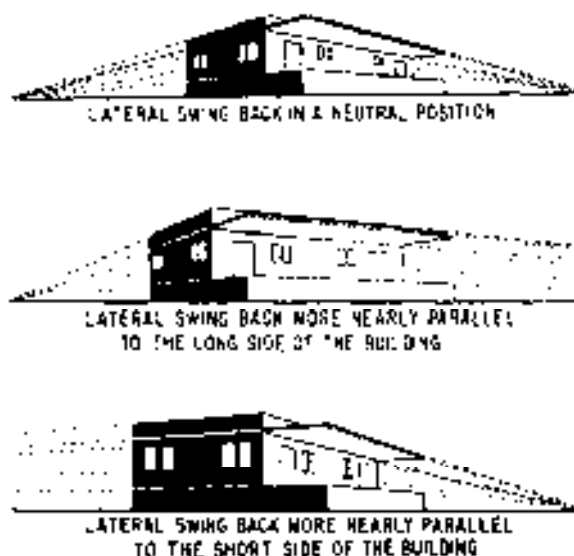


Figure 4-22.—Correction for horizontal distortion.

- Bellows. Connects the front and rear standards and allows the two standards to move for focusing or to accommodate various focal-length lenses.
- Tripod head. Holds the monorail to the tripod.
- Lens.
- Ground glass. Used for focusing, viewing, and composing the image.

There are four basic movements or adjustments used on a view camera. These basic movements perform specific functions. The four basic movements are as follows:

1. **Horizontal or lateral swing.** Both the front and rear standards swing horizontally (fig. 4-21).

The swing back is used to correct distortion, or perspective, in the horizontal plane. When you are photographing subjects from an angle, horizontal lines appear to converge at the distant side. To correct this distortion, swing the camera back so it is more parallel to the horizontal plane of the subject (fig. 4-22).

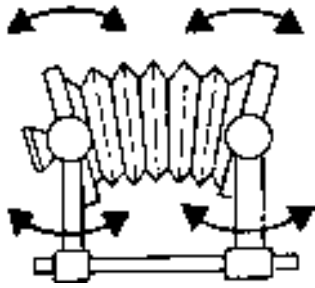


Figure 4-23.—Front and rear vertical tilt movement.

The front standard swing allows the lens to pivot horizontally around its optical axis. The swing front is used to increase the depth of field. When the swing back is swung, the film is not parallel with the image produced by the lens. By swinging the lens, you can bring the image onto the same plane as the film.

2. Vertical tilt. Both the front and rear standards tilt vertically (fig. 4-23).

The tilt back is used to correct distortion, or perspective, in the vertical plane. When you angle the camera up to photograph a subject, such as a building, the vertical lines on the ground glass appear to converge. When this distortion is not corrected, the subject appears smaller at the top and the vertical planes bend toward the center of the image (fig. 4-24, view A). To correct this distortion, tilt the tilt back so it is parallel to the vertical plane of the subject (fig. 4-24, view B).

The tilt front is used to focus and increase the depth of field. When the tilt back is tilted to correct for vertical distortion, the film plane is no longer parallel to the image produced by the lens. By tilting the front standard, you can bring the image of the lens onto the same plane as the film.



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Figure 4-24.—Uncorrected and corrected vertical distortion.



Figure 4-25.—Sliding front and rear of view camera.



Figure 4-26.—Using sliding controls to center image.



Figure 4-27.—Using rising and falling front-to-center image vertically.

3. Slide or shift. Both the front and rear standard shift or slide from side to side (fig. 4-25).

The sliding front or sliding rear is used to center the image on the ground glass horizontally (fig. 4-26). The sliding front or sliding rear is used when the image is not centered after the camera is set on a tripod. These controls are used instead of moving the tripod. When the tripod is moved, the horizontal corrections are altered and must be reevaluated.

4. Rising and falling front. The rising and falling front is used to center the image vertically on the ground glass (fig. 4-27). This control raises and lowers the lens board. This prevents you from tilting the entire camera and nullifying the distortion corrections made on the vertical plane.

VIEW CAMERA OPERATION

The view camera is easy to use, but this requires some thought and patience to use it properly. The more

the camera is used, the more comfortable you will be with it. The following progressive steps are used when using the view camera:

1. Set up and level your tripod.
2. Set the camera controls to the neutral position. The neutral position is the starting point for photographs taken with a view camera. In the neutral position, all controls are lined up and no corrective movements are set. Adjust the front and the rear standards so they can be moved to focus the image.
3. Open the shutter and set the diaphragm at maximum aperture.
4. Roughly compose the image on the ground glass.
5. Focus the image.
6. Check the image size and subject coverage. When required, change lens focal length, camera-to-subject distance, or both. Small image size adjustments may be made by sliding the monorail forward or backward.
7. Correct distortion by using the swing and tilt controls. The image must be refocused after each control is moved.
8. Recenter the image horizontally by using the sliding front or the sliding rear. The image is recentered vertically by using the rising and falling front.
9. Refocus the image. To obtain greater depth of field, swing or tilt the lens board so it is parallel with the film plane.
10. Refocus.
11. Determine your exposure. When necessary, be sure to take the bellows extension into account.
12. Stop down the diaphragm and check the depth of field.
13. Check the circle of illumination. You will lose the circle of illumination when extreme camera

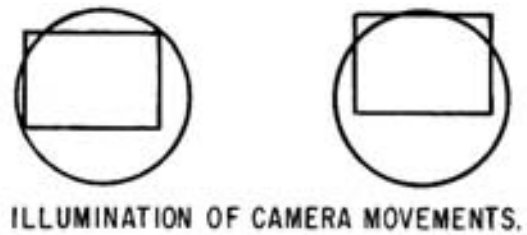


Figure 4-28.—How the loss of the circle of illumination appears on the ground glass.

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movements are made. This is caused when the lens field of coverage is shifted from the film plane (fig. 4-28).

14. Be sure all camera adjustments are locked down and insert the film holder. Be sure the lens is closed before removing the dark slide.

15. Make your exposure.

You cannot always correct 100 percent of the distortion. Horizontal or vertical distortion can only be corrected on one plane; for example, when you take a three-quarter photograph of a building, only the front or side can be corrected at a time, not both in the same picture.

ELECTRONIC CAMERAS

Still-electronic cameras are becoming popular in all branches of the Department of Defense. The operation of still-electronic cameras is basically the same as conventional cameras. The only difference between these cameras is the way the images are recorded and stored. There are two different types of electronic cameras used currently in the Navy: the still-video camera and the digital camera.

The Sony ProMavica MVC-5000 (Magnetic Video Camera) is an example of a still-video camera. The ProMavica records images as magnetic impulses on a compact 2-inch still-video floppy disk. The images are captured on the disk by using two-CCD (charge-coupled device) chips. One chip stores luminance information, and the other separately records

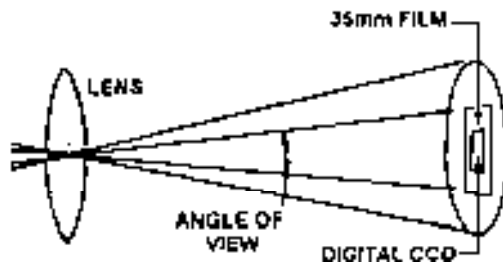


Figure 4-30.—Comparing the angle of view of a 35mm camera and the Kodak DCS Digital camera.

the chrominance information. This camera provides a 720,000 pixel image.

The images can be stored on the floppy disk either as a **FRAME** or a **FIELD**. When *frame* is selected, each picture is recorded on two tracks and up to 25 images can be recorded on each disk. When *field* is selected, each picture is recorded on only one track, allowing up to 50 images to be recorded. When you record your pictures in the field mode, images are less detailed as compared to images recorded on two tracks (frame).

Overtaking the still-video camera is the digital camera. The Eastman Kodak Company is leading the way in digital-imaging technology by introducing the Digital Camera System (DCS). Resolution with the Kodak DCS 200 Digital camera is 1.54 million pixels,



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Figure 4-31.—Image captured and transmitted using the Kodak DCS Digital camera.

providing four times the resolution of a still-video camera. Kodak's fully digital systems use a Nikon body and optics to capture the image. The image is then transferred to a highly sensitive CCD that converts the image directly into digital information. The CCD in the Kodak DCS camera system only uses a small portion of the angle of view compared to conventional cameras; for example, a 28mm lens on the Kodak DCS Digital Camera is equivalent to an 80mm lens on a 35mm camera (fig. 4-30).

The exposure index (EI) of the DCS camera equates to 50 to 400 ISO for color images and 100 to 800 ISO for black-and-white images. The digital images stored on the DCS camera can easily be downloaded to a computer, so it can be manipulated and printed or can be transmitted around the world without loss in quality. The image in figure 4-31 was transmitted directly from the USS *Ranger* CV-61 via satellite to the Navy News Photo Division in the Pentagon.

CHAPTER 5

BASIC PHOTOGRAPHIC TECHNIQUES

Today, photography is characterized by a rapid growth in the development of technology and ideas. Each year, millions of pictures are taken and an astonishing array of new films, cameras and imaging systems enter the market.

One of the great attractions of the photography field is the ease with which basic skills can be learned. Unlike some of the older arts that take years of training to produce an acceptable product, anyone can quickly learn how to take a picture; however, photographic techniques must be mastered before you can become an accomplished photographer; therefore, mastery of the basic fundamentals is the foundation upon which you will build your photographic and professional skills as a Navy Photographer's Mate. The photographic techniques presented in this chapter are essential in producing quality photographs, and you can apply each of these fundamentals, to some extent, each time you take a picture.

KEEPING THE CAMERA STEADY

Many photographs have been ruined because of camera movement. Unless you want a blurred picture, keeping your camera steady when shooting is crucial. The longer the exposure or focal-length lens you use, the more crucial holding your camera steady becomes; therefore, there are many instances when the use of a tripod or some other type of camera support is necessary.

The following section provides general guidelines for the various methods used to support a camera to ensure quality results. These are not necessarily the only or even the best ways to support a camera. You should practice supporting your camera using various methods; then select those that are most appropriate for the situation and the subject being photographed. Practice should include all the camera functions you normally use on actual photographic assignments. Concentrate on composing through the viewfinder, focusing, selecting shutter speeds and f/stops, holding

the flash off the camera, depressing the shutter release, and winding the film.

HANDHOLDING THE CAMERA

Of the various methods to keep your camera steady, the best is to use a tripod, but often you may not have one with you or the situation makes the use of a tripod impossible. In these situations, if you use proper precautions, it is possible to take high-quality pictures using hand-held methods.

Under normal circumstances, you should not handhold your camera at shutter speeds longer than about 1/60 second. When a long lens is used, this becomes even more critical, because the images produced by long lenses are affected more by camera movement. Also, it is more difficult to control the weight and greater size of a long lens when it is hand-held. As a general rule, the slowest recommended shutter speed is the reciprocal of the focal length of the lens; for example, when you are using a 500mm lens, the slowest shutter speed you should use is 1/500 second. When handholding your camera, be sure to have a good, solid, but not tense grip on the camera. Use your whole body as a firm support. Your elbows should be close to your body and your feet spread apart to provide good balance. In this position your body is acting as a tripod. When possible, you should try steadying yourself by leaning against something solid like a wall, tree, or post.

When using an eye-level camera, press the camera against your forehead and face. A waist-level camera should be pulled solidly against your body. Just before releasing the shutter, take a deep breath, let out part of the air-hold the rest, and squeeze the shutter release as if firing a gun.

When nothing is available to support your camera other than yourself, try sitting down, squatting, or kneeling, and firmly rest your elbows on one or both knees. When you are taking low-angle photographs, lying on the ground with the camera in front of you is another simple way to keep the camera reasonably



Figure 5-1.—Handholding the camera.

steady. Even better results are obtained when you place the camera on a solid surface, such as a railing or a rock (fig.5-1).

When taking high-angle photographs with a twin-lens reflex or waist-level camera, you could hold

the camera steady upside down against a roof or other object within easy reach above your head, such as under a low archway or firm tree branch.

Portable and compact supports, such as pistol or rifle grips, are available for hand-held cameras. These

are particularly useful when covering fast events, when using long-focal-length lenses, or when a tripod is too cumbersome to use. These hand-held supports are usually fitted with a cable release for firing the shutter.

Camera shake can cause *fuzzy* photographs. Some cameras have built-in capabilities that help reduce camera vibration or shake; for instance, on a single-lens reflex (SLR) camera, the mirror “jumps” up when the shutter is fired—that causes vibration. On some SLRs you can lock the mirror up before taking the picture to avoid this; however, the disadvantage of locking the mirror is that you are unable to see through the viewfinder. Also, the pressure of your finger on the shutter release can cause some camera shake. “This does not happen on cameras with a delayed shutter release because the camera compensates by automatically delaying the shutter release. Additionally, cable release can be used to fire the shutter without handling the camera

CAMERA SUPPORTS

To ensure absolutely sharp photographs, you must use some type of camera support. Few photographers can hold a camera absolutely steady, especially for exposures longer than about 1/60 second or even shorter exposures when using long-focal-length lenses. When using telephoto lenses or shooting motion media, you must remember that camera movement can become critical. Even the slightest camera movement is magnified and becomes very apparent in enlargements of still photographs or when motion-media footage is viewed.

The ideal camera support should be strong, firm, and allow as much adjustment of camera height and angle as possible. The design of a support to be carried outside the lab should be compact and lightweight, while still providing a firm, rigid camera support.

Most pictures are taken holding the camera by hand because camera supports are often bulky, heavy, and inconvenient to carry on many assignments; however, you should use a camera support when it is appropriate to do so. This allows you to produce the sharp pictures that are characteristic of a truly professional photographer.

Tripods

The best way to support your camera is with a sturdy, rigid, tripod. Tripods are three-legged camera supports with flat platforms or heads in which cameras are secured. Most tripods are equipped with a head that

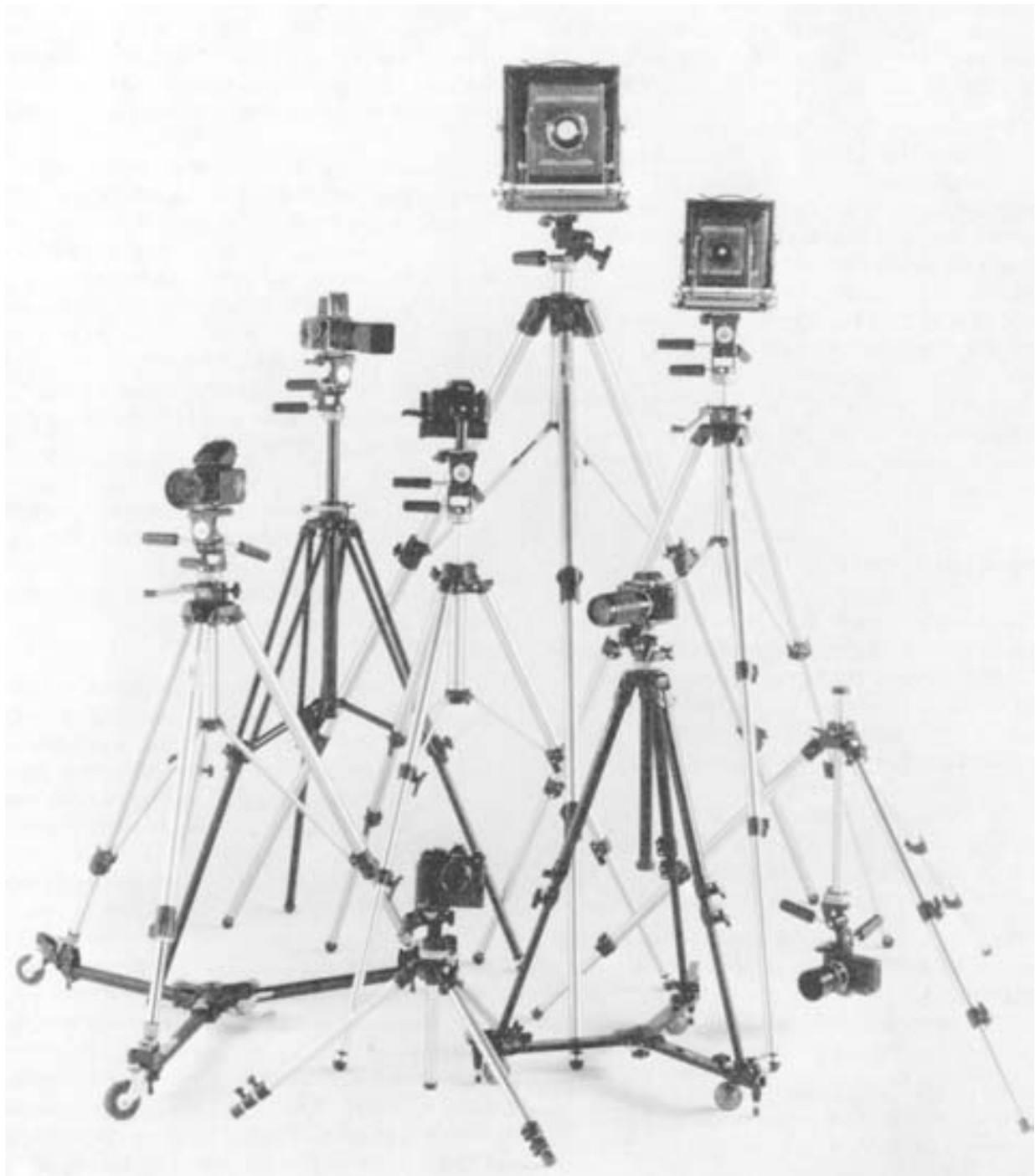
has an elevator center post. The camera is attached to this center post and is raised or lowered easily by cranking the post up or down. These elevators eliminate the need for readjusting all three tripod legs for making small, last minute adjustments to the camera height.

Tripods come in a variety of designs, sizes, and weights (fig. 5-2). The heavier models are the sturdiest and provide the best support; however, if too heavy, they are not very portable. As a general rule, the heavier your camera, the heavier and stronger your tripod must be. For some of the light, full-size tripods, rigidity can be improved by hanging a bag of sand or another weight from the tripod head. This is especially useful in high winds. Another method is to hang a strap from the tripod head, and use the strap as a foothold on which to apply downward pressure (fig. 5-3).

Tabletop tripods are also available and can be used almost anywhere a flat surface is available. These small tabletop tripods can even be braced against the photographer’s chest. Because of their small size, they can easily be carried in a camera bag.

To set up a tripod, extend one leg straight ahead toward the subject. This way the camera may be aimed by pivoting the tripod on this one leg. Extend the other two legs and adjust them to level the tripod platform horizontally. When setting up a tripod on level ground, you can waste a lot of time trying to get the tripod level if the leg sections are not fully extended. An easy solution to the problem is to mark the tripod legs in specific increments with a marking pen, pencil, or scribe. One method is to mark short lines at 1-inch intervals and long lines at 6-inch intervals. Doing this reduces your frustration, saves time, and allows you to level your camera on the tripod with less effort. When a tripod is set up on an uneven surface, several adjustments of the side legs are normally necessary. Readjustment of the front leg levels the camera vertically so the platform or head is level. Most newer tripods have platforms that can be adjusted by eliminating the need for minor leg adjustments.

To mount the camera on the tripod head, you secure it in place by tightening the tripod screw into the camera tripod socket. Secure the camera by tightening the camera clamp screw locknut. After the camera is mounted on the tripod, test the camera to ensure all camera controls are accessible and function properly. The camera should be stable and not shake when the camera controls are operated.



Courtesy of Bogan Photo Corp.
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Figure 5-2.—Tripods.



Figure 5-3.—Using a foot strap to make a tripod more rigid.

Monopods

A monopod is a single pole on which a camera is mounted. Monopods are useful for keeping the camera steady for location work when a tripod is too bulky or difficult to use; however, the use of a monopod is not advisable when using large, heavy cameras or when shutter speeds below about 1/15 second are used. Standing or kneeling with a monopod braced against your body or leg provides a camera the extra support and steadiness required for it to be an effective tool (fig. 5-4).

Clamps

Another practical way to support your camera is to use one of the many clamps available for this purpose. A camera clamp has a mount that screws into the tripod hole or socket on the camera and has jaws that can be clamped to a convenient object. Camera support clamps can be attached to furniture, doors, posts, fences, and other firm anchor points. There are even clamps with suction cups for mounting cameras on smooth, flat surfaces, such as a window.

PHOTOGRAPHIC COMPOSITION

Photographic composition is *the pleasing arrangement of subject matter elements within the*



Figure 5-4.—Using a monopod.

picture area. Creative photography depends foremost on the photographer's ability to see as the camera sees because a photograph does not reproduce a scene quite the way we see it. The camera sees and records only a small isolated part of the larger scene, reduces it to only two dimensions, frames it, and freezes it. It does not discriminate as we do. When we look at a scene we *selectively* see only the important elements and more or less ignore the rest. A camera, on the other hand, sees all the details within the field of view. This is the reason some of our pictures are often disappointing. Backgrounds may be cluttered with objects we do not remember, our subjects are smaller in the frame or less striking than we recall, or the entire scene may lack significance and life.

Good pictures are seldom created by chance. To make the most of any subject, you must understand the basic principles of composition. The way you arrange the elements of a scene within a picture, catch the viewer's attention, please the eye, or make a clear statement are all qualities of good composition. By developing photographic composition skills, you can produce photographs that suggest movement, life, depth, shape, and form, recreating the impact of the original scene.

How are photographic composition skills developed? You look, you study, you practice. Every time you take a picture, look all around within the viewfinder. Consider the way each element will be recorded and how it relates to the overall composition.

You must become thoroughly familiar with the camera and learn how the operation of each control alters the image. Experiment with the camera and look at the results carefully to see if they meet your expectations. With experience and knowledge of your equipment, you begin to “think through your camera” so you are free to concentrate on composition. Devote serious study to the principles of good composition. Study books and magazine articles on composition. You should analyze various media: motion pictures, TV, magazines, books and newspapers, and evaluate what you see. What is good about this picture or that TV image? What is bad about it? What principles of good composition could you apply in a different way to make the picture better.

Good or correct composition is impossible to define precisely. There are no hard-and-fast rules to follow that ensure good composition in every photograph. There are only the principles and elements that provide a means of achieving *pleasing* composition when applied properly. Some of these principles and elements are as follows:

- Center of interest
- Subject placement
- ◆ Simplicity
- ◆ Viewpoint and camera angle
- ◆ Balance
- Shapes and lines
- Pattern
- Volume
- Lighting
- Texture
- ◆ Tone
- ◆ Contrast
- ◆ Framing
- Foreground
- ◆ Background
- ◆ Perspective

As you study these principles of composition, you should soon come to a realization that some are very similar and overlap one another a great deal.

Because all or most of these principles must be considered and applied each time you take a picture, it

may all seem quite confusing at first. With experience you can develop a sense of composition, and your consideration and application of the principles will become almost second nature. This is not to suggest that you can allow yourself to become complacent or careless in the application of the principles of composition. Doing so will be immediately obvious because the results you produce will be snapshots, not professional photographs.

The principles of composition that follow apply equally to both still and motion media photography.

CENTER OF INTEREST

Each picture should have only one principal idea, topic, or *center of interest* to which the viewer's eyes are attracted. Subordinate elements within the picture must support and focus attention on the principal feature so it alone is emphasized.

A picture without a dominant center of interest or one with more than one dominant center of interest is puzzling to a viewer. Subsequently, the viewer becomes confused and wonders what the picture is all about. When the picture has one, and only one, dominant “point of interest,” the viewer quickly understands the picture.

NOTE: “Point of interest,” as used here, has the same meaning as center of interest; however, using the term *point of interest* prevents giving the impression that the center of interest should be located in the center of the picture.

The specific topic, idea, or object to be portrayed must be set in your mind as you prepare to take a picture. When there is nothing in the picture to attract attention to a particular area or object, the eyes wander throughout the scene. The center of interest may be a single object or numerous ones arranged so attention is directed to one definite area.

When the center of interest is a single object that fills most of the picture area or one that stands out boldly, such as a white sail against a background of dark water, attention is attracted immediately to it. As may be expected, not all subjects are as simple to arrange or as bold and impressive.

A photographer usually has at his or her disposal many factors or elements that can be used and arranged within the picture area to draw or direct attention to the primary idea of the picture. Some of these elements are lines, shapes, human figures, tone, and texture.

Human figures attract attention more strongly than almost any other subject matter and unless they are the

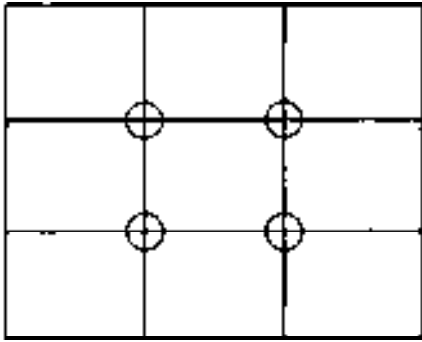


Figure 5-5.—Principle of thirds.

main object of the photograph should probably be kept out of the picture; for instance, a photograph showing a person standing at some distance in front of a building may leave the observer wondering whether the person or the building is the primary subject. When people are included in a scene for comparative size of objects or just for atmosphere, keep them from looking directly at the camera. When people look at the camera and therefore at the viewer of the picture, the viewer tends to return their gaze by looking directly back into their eyes. When they are not the intended point of interest, we miss the statement and purpose of the picture. When people are subordinate elements within the picture and they are looking in a direction other than at the camera, the viewer's attention is directed from the people to what *they are* looking at, which *should* be the center of interest; for example, when people are grouped around a piece of machinery that is the center of interest of the picture, have them look at the machine, rather than the camera.

SUBJECT PLACEMENT

Sometimes good composition is obtained by placing the center of interest in the geometrical center of the picture; it is generally not a good idea to place it there. Too frequently it divides the picture into equal halves and makes the picture uninteresting and difficult to balance. By dividing the picture area into thirds, both vertically and horizontally, and locating the center of interest at one of the intersections of the imaginary lines, you can usually create a feeling of balance to the composition (fig. 5-5).

In photographic composition there are two general guides for determining the best location for the center of interest. *The first is the principle of thirds. The other is dynamic symmetry.* In the principle of thirds, the intersection of lines that divide the picture area into

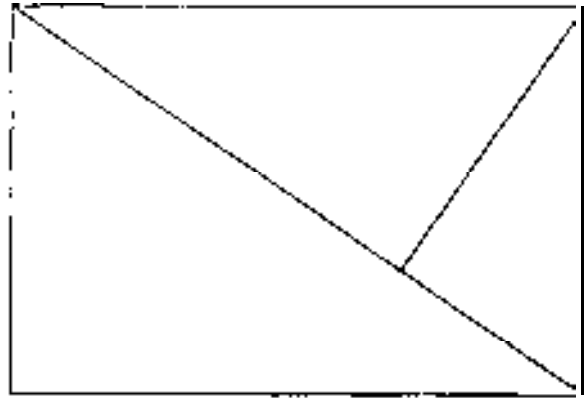


Figure 5-6.—Dynamic symmetry.

thirds are marked by O's. These intersections are good locations for the center of interest in most photographs. Notice we said *THE* center of interest. Remember, have only one center of interest to a picture—keep it simple. The principle of dynamic symmetry is a similar idea. A good location for the center of interest is found by drawing or imagining a diagonal line from one corner to an opposite corner. Then, draw a second line perpendicular to the first from a third corner (fig. 5-6). The intersections of the lines are the location for the center of interest.

SIMPLICITY

Simplicity is the key to most good pictures. The simpler and more direct a picture is, the clearer and stronger is the resulting statement. There are several things to be considered when we discuss simplicity. First, select a subject that lends itself to a simple arrangement; for example, instead of photographing an entire area that would confuse the viewer, frame in on some important element within the area. Second, select different viewpoints or camera angles. Move around the scene or object being photographed. View the scene through the camera viewfinder. Look at the foreground and background. Try high and low angles as well as normal eye-level viewpoints. Evaluate each view and angle. Only after considering all possibilities should you take the picture. See beyond and in front of your subject. Be sure there is nothing in the background to distract the viewer's attention from the main point of the picture. Likewise, check to see there is nothing objectional in the foreground to block the entrance of the human eye into the picture.

A last point of simplicity—*tell only one story*. Ensure there is only enough material in the picture to convey

one single idea. Although each picture is composed of numerous small parts and contributing elements, none should attract more of the viewer's attention than the primary object of the picture. The primary object is the reason the picture is being made in the first place; therefore, all other elements should merely support and emphasize the main object. Do not allow the scene to be cluttered with confusing elements and lines that detract from the primary point of the picture. Select a viewpoint that eliminates distractions so the principal subject is readily recognized. When numerous lines or shapes are competing for interest with the subject, it is difficult to recognize the primary object or determine why the picture was made.

VIEWPOINT AND CAMERA ANGLE

The proper viewpoint or camera angle is an important factor in good composition. Repositioning your subject within the viewfinder frame and changing the camera viewpoint or camera angle are two simple ways of controlling composition.

Photographing from a different viewpoint or camera angle can often add drama and excitement or even bring out an unusual aspect of a subject. Most of the subjects you photograph are three-dimensional and should be photographed from an angle (to the right or left of and/or from higher or lower than the subject) that allows the viewer to see more than one side of the subject. The photographer should study the subject from different sides and angles. Walk around the subject and look at it from all viewpoints. See it from elevated and low positions as well as from eye level to find the best composition. This greatly assists in composing the subject for the best balance and helps to select a background that compliments, not distracts from the subject.

The terms *viewpoint* and *camera angle* are often used in conjunction with one another and sometimes used interchangeably. They can also have different meanings depending on how they are applied. Viewpoint" is the camera position in relationship to the subject. "Camera angle" is the angle in which the camera lens is tilted; for example, a picture of sailors marching, made from ground level with the camera held horizontal with reference to the ground, may be referred to as a "low viewpoint" (or camera position); however, when this picture is made, again from ground level, but with the camera pointed up, it may be referred to as a "low camera angle." Likewise, a picture made from an elevated or high position, with the camera again held horizontal with reference to the ground, or even pointed

straight down, can be referred to as a "high viewpoint"; however, if the camera is not held horizontal to the ground or pointed straight down, but pointed at some angle between horizontal and vertical, the camera position could be referred to as a "high camera angle."

Eye-Level Shots

With the camera held horizontal, eye-level shots are usually made at a height of about 5 1/2 feet, the height from which the average adult sees, and with the camera horizontal. With the camera held at eye level but pointed up or down, the camera position changes and you have either a low or high camera angle, respectively.

Low Viewpoint and Low Camera Angle

Low viewpoints and low camera angles can add emphasis and interest to many ordinary photographs. A low viewpoint can be used to distort scale or add strength to a picture or to emphasize certain elements within the picture. A low camera angle is achieved when the camera angle is located below the point of primary interest and pointed upward. Low angles tend to lend strength and dominance to a subject and dramatize the subject. Low angle shots are used when dramatic impact is desired. This type of shot is very useful for separating the subject from the background, for eliminating unwanted foreground and background, and for creating the illusion of greater size and speed (fig. 5-7).

High Viewpoint and High Camera Angle

High viewpoints and high camera angles help orient the viewer, because they show relationships among all elements within the picture area and produce a psychological effect by minimizing the apparent strength or size of the subject (fig. 5-8).

BALANCE

Balance in photographic composition is a matter of making pictures look harmonious. Each element in a picture has a certain amount of value in respect to all the other elements. Every tone, mass, shape, tree, rock figure, building, line, or shadow contributes a certain amount of weight that must be arranged correctly in the composition to give the impression of balance. The subject placement within the picture area is the factor that must be carefully considered.

Composition is kept in balance by two different methods: symmetrical, or formal, balance and asymmetrical, or informal, balance.



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Figure 5-7.—Low viewpoint and low camera angle.

Symmetrical, or Formal, Balance

Symmetrical, or formal, balance in a photograph is achieved when elements on both sides of the picture are of equal weight (fig. 5-9A). The idea of formal balance can be related to a seesaw. When there are two equally

weighted objects on the seesaw and they are equidistant from the pivot point, or fulcrum, the board will be in balance.

Pictures with formal balance may look static and unexciting; however, they do present an air of dignity.



JO1(SW) Herkovitz
302.294

Figure 5-8.—High viewpoint and high camera angle.

Formal balance does not always mean a picture has to be symmetrical. Symmetrical pictures, in which both sides are exactly the same, are produced only when you want a special effect; therefore, they are not often produced. A variation of symmetrical balance deals with

the seesaw in perspective. The forces or weights are presumed to be approximately equal; but, the imaginary pivot point is set deep into the picture space. With this variation to symmetrical balance, a more interesting photograph is usually created (fig. 5-9B).

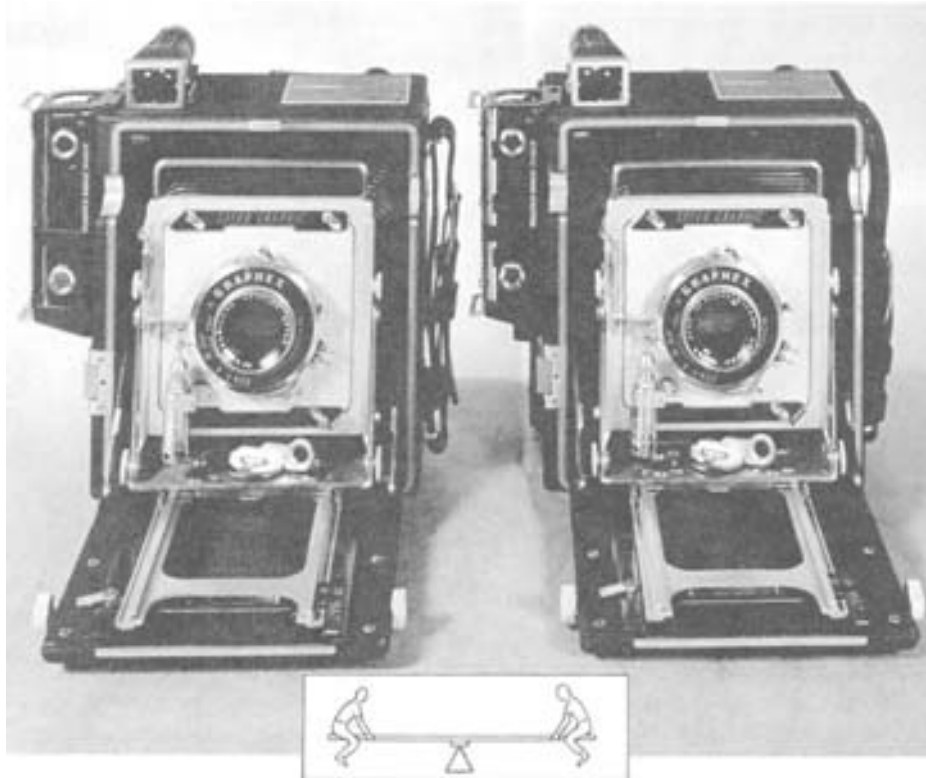


Figure 5-9A.—Symmetrical, or formal, balance.

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Figure 5-9B.—Symmetrical, or formal, balance.

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PHC Chet King
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Figure 5-10.—Asymmetrical, or Informal, balance.

Asymmetrical, or Informal, Balance

Asymmetrical, or informal, balance is usually much more interesting than symmetrical balance. In asymmetrical balance the imaginary central pivot point is still presumed to be present; however, instead of mirror images on each side of the picture area, the subject elements are notably different in size, shape, weight, tone, and placement. Balance is established by equalizing the element forces in spite of their differences.

Asymmetrical balance is introduced when the presumed weight of two or more lighter objects is equalized by a single heavier object placed on the other side of the imaginary pivot point (fig. 5-10). Asymmetrical balance is more difficult to achieve than symmetrical balance, because of the problem of establishing relative weight values for dissimilar elements within the picture area as well as presenting some form of stability.

Aspects of Balance

There are many other factors to consider in order to make pictures appear balanced. Some of these are as follows:

- An object far from the center of the picture seems to have more weight than one near the center.

- Objects in the upperpart of a picture seem heavier than objects of the same size in the lower part of a picture.

- Isolation seems to increase the weight of an object.

- Intensely interesting objects seem to have more compositional weight.

- Regular shapes seem to have more weight than irregular shapes.

- Elements on the right side of an asymmetrical picture appear to have more weight than elements of the same size on the left side of the picture.

- The directions in which figures, lines, and shapes appear to be moving within the picture area are important to balance; for example, a person may be walking in a direction, or his eyes may be looking in a direction, or the shape of some element creates a feeling of movement. When the feeling of direction is present within a scene, it tends to upset the balance if judged on the size of the subject alone.

Understanding the factors required to create pictorial balance is essential for you to produce good pictures. To gain this understanding, you can continually test your feelings for balance as you look through your camera viewfinder. Once you gain an understanding of the principles of pictorial balance, achieving balance in your photographs becomes an easy process.



302.295

Figure 5-11.—Silhouettes emphasize shape.

SHAPES AND LINES

Shapes and lines are important elements in photographic composition. When properly used, shapes and lines can create a desired effect. As a photographer, you usually have control over the way shapes and lines are used in your pictures.

Shape

Shape is a two-dimensional element basic to picture composition and is usually the first means by which a viewer identifies an object within the picture. *Form* is

the three-dimensional equivalent of shape. Even though shape is only two-dimensional, with the proper application of lighting and tonal range, you can bring out form and give your subjects a three-dimensional quality. Lighting can also subdue or even destroy form by causing dark shadows that may cause several shapes to merge into one.

Shapes can be made more dominant by placing them against plain contrasting backgrounds; for example, consider again the white sail against the dark water background. The greatest emphasis of shape is achieved when the shape is silhouetted (fig. 5-11), thus



PH1 Art Legare
302.296

Figure 5-12.—Leading lines.

eliminating other qualities of the shape, such as texture and roundness, or the illusion of the third dimension.

Lines

Lines can be effective elements of composition, because they give structure to your photographs. Lines can unify composition by directing the viewer's eyes and attention to the main point of the picture or lead the eyes from one part of the picture to another. They can

lead the eyes to infinity, divide the picture, and create patterns. Through linear perspective, lines can lend a sense of depth to a photograph. (Linear perspective causes receding parallel lines to appear to converge in the picture. This allows you to create an illusion of depth in your pictures.)

The viewer's eyes tend to follow lines into the picture (or out of the picture) regardless of whether they are simple linear elements such as fences, roads, and a



PH2(AC) Mark Kettenhofen
302.297

Figure 5-13.—Diagonal lines convey a feeling of dynamic action.

row of phone poles, or more complex line elements, such as curves, shapes, tones, and colors. Lines that lead the eye or direct attention are referred to as *leading lines*. A good leading line is one that starts near the bottom corner of the scene and continues unbroken until it reaches the point of interest (fig. 5-12). It should end at this point; otherwise, attention is carried beyond the primary subject of the photograph. The apparent direction of lines can often be changed by simply changing viewpoint or camera angle.

Vertical, diagonal, horizontal, and curved lines create different moods. Vertical lines communicate a

sense of strength, rigidity, power, and solidarity to the viewer. On the other hand, horizontal lines represent peace, tranquillity, and quietness. A generally accepted practice is to use a vertical format for pictures having predominantly vertical lines and horizontal format for pictures having predominantly horizontal lines. Again, this is a *generally accepted practice*, NOT a rule.

Diagonal lines represent movement, action, and speed. A picture with diagonal lines conveys a feeling of dynamic action even when the subject is static (fig. 5-13). Curved lines present a sense of grace,



PH2 Frazier
302.298

Figure 5-14.—Use of curved lines in photographic composition.

smoothness, and dignity to a photograph (fig. 5-14). The most common curved line is the S curve.

Lines are not only present in the shape of things but can be created by arranging several elements within the picture area so they form lines by their relationship with one another.

PATTERN

Creating your pictures around repeating elements or patterns provides picture unity and structure. Pattern repetition creates rhythm that the eyes enjoy following (fig. 5-15). When lines, shapes, and colors within a picture occur in an orderly way (as in wallpaper), they create patterns that often enhance the attractiveness of photographs. Pattern, like texture, is found almost everywhere. It can be used as the primary subject but is most often used as a subordinate element to enhance composition. When pattern is used as a supporting

element, it must be used carefully so it does not confuse or overwhelm the viewer. Pictures that are purely pattern are seldom used, because they tend to be monotonous. Patterns should be used to strengthen and add interest to your subject.

Shape is the most common and powerful pattern element. Repeated lines, tone, and color can also provide unity to your composition and combinations of these create interesting pictures. Triangles, squares, and circles are the basic shapes to look for in a pattern. Triangles and squares are usually static but can be placed to create a tension-filled, dynamic effect. Circles and curves are pleasing pattern shapes.

VOLUME

When photographing most subjects, you face the problem of how to symbolize three-dimensional objects in a two-dimensional picture. The solution becomes



PHAN A. J. Seely
302.299

Figure 5-15.—Shapes used in composition.

simple when a distinction is made between the two different ways three-dimensional objects appear: as positive, or occupied space (volume) or as negative, or unoccupied space.

If you make a picture to show the entire machine shop aboard a repair ship using only one powerful flash

unit placed at the camera, you only *symbolize* empty or negative space; however, a sense of depth is provided because of increasing darkness toward the back of the shop. Occupied or positive space (the machines) is front-lighted and appears shadowless and flat. On the other hand, if you use a series of lights along the sides

of the machine shop to sidelight the machines, shadows are cast at their sides and occupied or positive space appears three-dimensional; however, since all the machines, both near and far, are now lighted the same, you do not create a sense of depth, and empty or negative space appears flat. For the best picture of the machine shop, you should light the machines in a way that the three-dimensional form is represented, while creating a sense of depth by reducing the intensity of illumination toward the back of the shop.

LIGHTING

Lighting is also an important creative element of composition. By controlling the light and directing it where you want it, you can subdue objects or distracting elements in the scene to give more emphasis to the main point of interest.

For good picture composition, you must develop an awareness of how changes in lighting can affect the appearance of things around you. Light and shadows can be used in composition to create mood, to draw attention to an area, to modify or distort shape, or to bring out form and texture in the subject.

Shadows are a key to apparent form in photographs. Without shadows, the subject records without form, curvature, or texture, appearing flat and lifeless. This does not mean that shadows must be harsh and black to achieve the effects of form, curvature, and texture. They may be soft, yet of sufficient density to show the most delicate roundness and form. Generally, harsh, black shadows are undesirable in a photograph due to the loss of detail in them. From a compositional standpoint, black shadows can be very useful in balancing a scene and directing attention to the point of interest. Harsh shadows can also be excellent for emphasizing texture and form, for creating interesting patterns, and for directing attention to the main point of interest; however, the same elements can also obscure detail and reduce form. When the lighting is harsh, such as on a clear, sunny day, shadows have sharply defined edges and are probably very dark, sometimes to the point that they appear stronger than the primary subject and attract attention to themselves.

TEXTURE

Texture helps to emphasize the features and details in a photograph. By capturing “texture” of objects being photographed, you can create form.

When people observe a soft, furry object or a smooth, shining surface, they have a strong urge to touch it. You can provide much of the pleasure people get from the feel of touching such objects by rendering texture in your pictures. Texture can be used to give realism and character to a picture and may in itself be the subject of a photograph. When texture is used as a subordinate element within the picture, it lends strength to the main idea in the photograph. It usually takes just a little different lighting or a slight change in camera position to improve the rendering of texture in a picture. When an area in a photograph shows rich texture, the textured area usually creates a form or shape; therefore, it should be considered in planning the photograph (fig. 5-16).

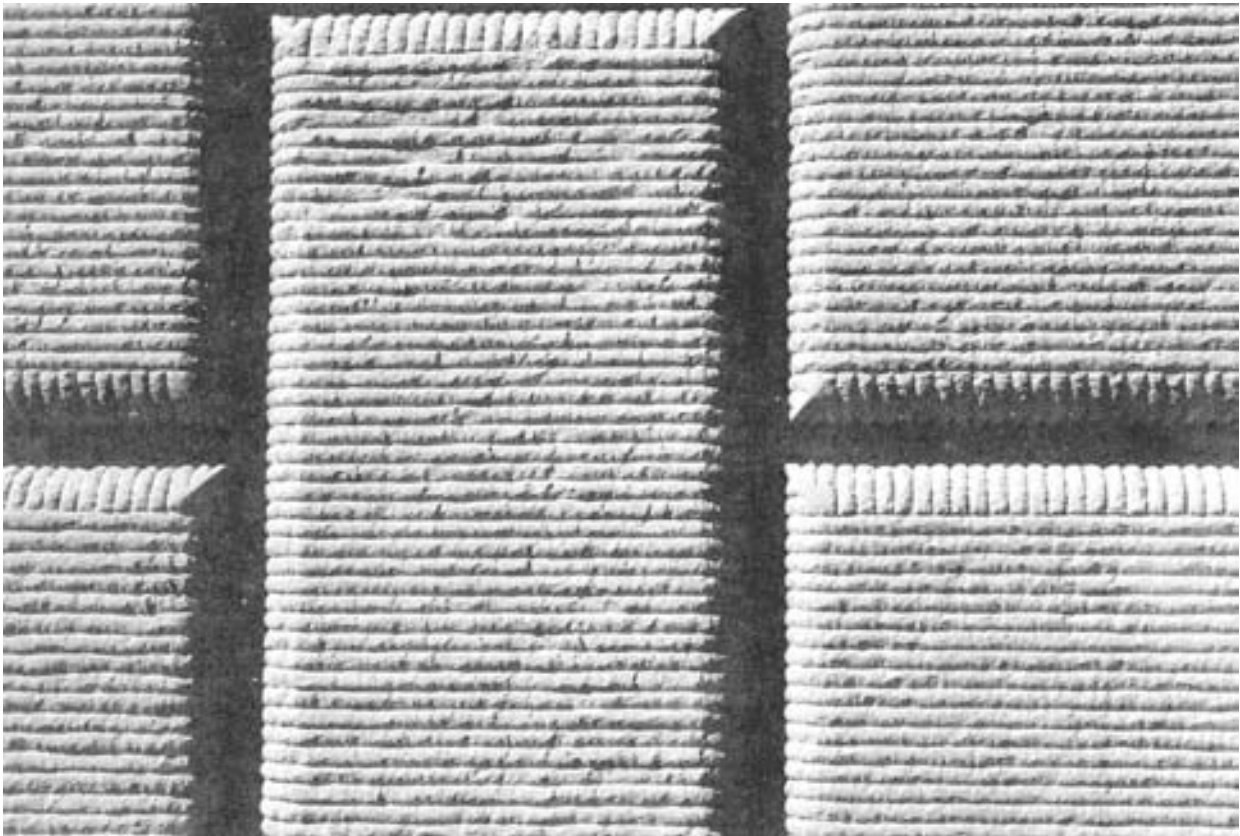
TONE

Tone is probably the most intangible element of composition. Tone may consist of shadings from white-to-gray-to-black, or it may consist of darks against lights with little or no grays. The use of dark areas against light areas is a common method of adding the feeling of a third dimension to a two-dimensional black-and-white picture. The interaction of light against dark shades in varying degrees helps to set the mood of a composition. A picture consisting of dark or somber shades conveys mystery, intrigue, or sadness. When the tones are mostly light and airy, the picture portrays lightness, joy, or airiness.

CONTRAST

Contrast in photographic composition is an effective means of directing the viewer's attention to the center of interest. Positioning of subject elements to create contrast gives them added emphasis and directs the viewer's attention.

When we speak of contrast as it relates to composition, we are referring to both tonal contrast, as in black-and-white photography, and color contrast as it relates to color photography. In black-and-white photography, contrast is the difference in subject tones from white-to-gray-to-black or from the lightest tone to the darkest tone. In color photography different colors create contrast.



PH2 J. Finnigan
302.300

Figure 5-16.—Photograph emphasizing texture.

Tonal Contrast

In black-and-white photography, contrast is considered either *high*, *normal*, or *low*. A high-contrast scene or photograph consists primarily of white and black with few or no middle gray tones. A black sailor in a white uniform against a light background is an example of a high-contrast (contrasty) scene. Most scenes you photograph have normal contrast. There will probably be elements within the scene that are very light or white, some that are very dark or black, and many tones or colors that reproduce as various tones of gray. A low-contrast (flat) scene has colors or tones in which highlights and shadows have very little difference in densities. In other words, all colors or tones within the scene are very similar in appearance. A white sailor in a white uniform against a light background is an example of a scene with low contrast.

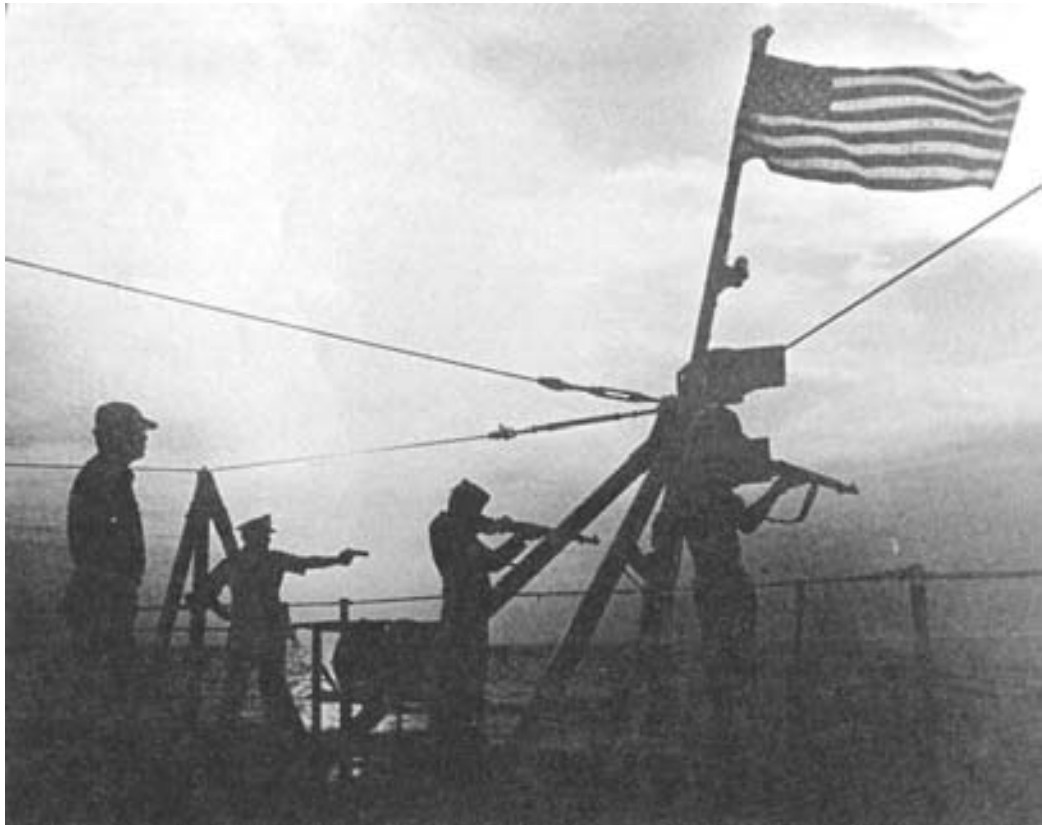
In black-and-white photography, high contrast conveys a sense of hardness and is characteristic of

strength and power. Low contrast conveys a sense of softness and is characteristic of gentleness and mildness.

Color Contrast

Color contrast is an effective compositional element in color photography, just as tone is in black-and-white photography. Colors with opposite characteristics contrast strongly when placed together. Each color accentuates the qualities of the other and makes the color images stand out dramatically. Color contrast is enhanced when you create the contrast of detail against mass. An example is a single, bright, red flower in a clear, glass vase photographed against a bright, green background.

Cold colors (bluish) and warm colors (reddish) almost always contrast. Cold colors recede, while warm colors advance. Light colors contrast against dark ones, and a bold color offsets a weak color.



PH2 Neil Crews
302.301

Figure 5-17.—Low-key scene.

LOW- AND HIGH-KEY SCENES.—When a scene contains mostly dark tones or colors, it is low key (fig. 5-17). When the scene contains mostly light tones, it is high key (5-18). Low-key and high-key pictures convey mood and atmosphere. Low key often suggests seriousness and mystery and is often used in horror pictures, such as a dark-granite castle in a thunderstorm. High key creates a feeling of delicacy and lightness. A photograph of a fair-skinned, blond-haired mother dressed in a white gown against a light background nursing her baby is a good subject for a high-key picture.

HIGH- AND LOW-KEY COLORS.—High-key color pictures contain large areas of light desaturated colors (pastels) with very few middle colors or shadows. Intentionally overexposing color film (exposing for the shadows) helps to create a high-key effect.

A low-key effect is created when the scene is dominated by shadows and weak lighting. Low-key pictures tend to have large areas of shadow, few highlights, and degraded colors. Naturally dark subjects are best for low-key pictures. Low-key color pictures can be induced by exposing color film for the highlights.

FRAMING

Framing is another technique photographers use to direct the viewer's attention to the primary subject of a picture. Positioned around the subject, a tree, an archway, or even people, for example, can create a frame within the picture area. Subjects enclosed by a frame become separated from the rest of the picture and are emphasized. Looking across a broad expanse of land or water at some object can make a rather dull uninteresting view. Moving back a few feet and framing the object between trees improves the composition.

An element used as a frame should not draw attention to itself. Ideally, the frame should relate to the theme of the picture; for example, a line of aircraft parked on the flight line framed by the wing and prop of another aircraft.

Not only is framing an effective means of directing the viewer's attention, it can also be used to obscure undesirable foregrounds and backgrounds. The illusion of depth can be created in a picture by the effective use of framing (fig. 5-19).



JOC Guy Miller
302.52

Figure 5-18.—High-key scene.



PH1 Michael D.P. Flynn
302.302

Figure 5-19.—Framing used in photographic composition.



PH3 Tim O'Neill
302.95

Figure 5-20.—Blurred background creates subject separation.

FOREGROUND

A large percentage of otherwise good pictures is ruined, because they include unnecessary or distracting foreground. This common fault can result from the photographer standing too far away from their subject when they *take* a picture, or the fact that normal focal length or standard lenses cover a relatively wide angle of view.

Undesirable foreground can be eliminated by moving in closer to the subject, by making pictures with a longer than standard focal-length lens, or by changing viewpoint or camera angle. Many already existing pictures can be improved by enlarging only a section of the negative and by cropping out meaningless or distracting foreground. In most cases, the foreground should be sharply focused and of sufficient depth to furnish substantial support for the subject. No object in the foreground should ever be so prominent that it distracts from the subject. You should clear the foreground of items that have no connection with the

picture. The ultimate example of carelessness on the part of the photographer is to leave his or her camera case where it shows in the picture. Generally, the foreground contains the leading line that is the line that leads the eye into the photograph and toward the point of interest. Whether this line is an object or series of objects or shadows, it should be sharply focused. A fuzzy, out-of-focus foreground usually irritates the senses and detracts from emphasis on the subject matter.

BACKGROUND

The background is almost as important an element in good composition as the camera angle. Too often it is overlooked when composing a scene since the photographer normally gives so much attention to the subject. Be particularly observant of the background to see that it contains nothing distracting. A tree or pole that was unnoticed in the distance behind a person when composing the scene may appear in the photograph to

be growing out of his or her collar or supporting his or her head.

The background should be subordinate to the main subject in both tone and interest. It should also make the subject stand out and present it to best advantage. Unsharpness and blur are effective ways for separating the subject from the background. Unsharpness can be accomplished by using a relatively large *f/stop* to render the background out of focus. In the case of subjects in motion, the subject can be pictured sharply and the background blurred by panning the subject (fig. 5-20). Occasionally, you may want to reverse these effects and record the subject unsharp or blurred and the background sharp. This is done to create the impression of the subject being closer to the viewer or to express motion by holding the camera still as you use a shutter speed that is too slow to “stop” the motion.

PERSPECTIVE

Perspective refers to the relationship of imaged objects in a photograph. This includes their relative positions and sizes and the space between them. In other words, perspective in the composition of a photograph is the way real three-dimensional objects are pictured in a photograph that has a two-dimensional plane. In photography, perspective is another illusion you use to produce photographs of quality composition.

When you are making pictures, the camera always creates perspective. Because a camera automatically produces perspective, many novice photographers believe there is no need to know much about it. This attitude is far from correct. When you know the principles of perspective and skillfully apply them, the photographs you produce show a good rendition of the subject's form and shape, and the viewer is given the sensation of volume, space, depth, and distance. Additionally, the photographer can manipulate perspective to change the illusion of space and distance by either expanding or compressing these factors, therefore providing a sense of scale within the picture.

Linear Perspective

The human eye judges distance by the way elements within a scene diminish in size, and the angle at which lines and planes converge. This is called *linear perspective*.

The distance between camera and subject and the lens focal length are critical factors affecting linear perspective. This perspective changes as the camera position or viewpoint changes. From a given position,

changing only the lens focal length, and not the camera position, does not change the *actual* viewpoint, but may change the *apparent* viewpoint.

The use of different focal-length lenses in combination with different lens-to-subject distances helps you alter linear perspective in your pictures. When the focal length of the lens is changed but the lens-to-subject distance remains unchanged, there is a change in the image size of the objects, but no change in perspective. On the other hand, when the lens-to-subject distance and lens focal length are both changed, the relationship between objects is altered and perspective is changed. By using the right combination of camera-to-subject distance and lens focal length, a photographer can create a picture that looks deep or shallow. This feeling of depth or shallowness is only an illusion, but it is an important compositional factor.

Using a short-focal-length lens from a close camera-to-subject distance, or viewpoint, produces a picture with greater depth (not to be confused with depth of field) than would be produced with a standard lens. Conversely, using a long-focal-length lens from a more distant viewpoint produces a picture with less apparent depth.

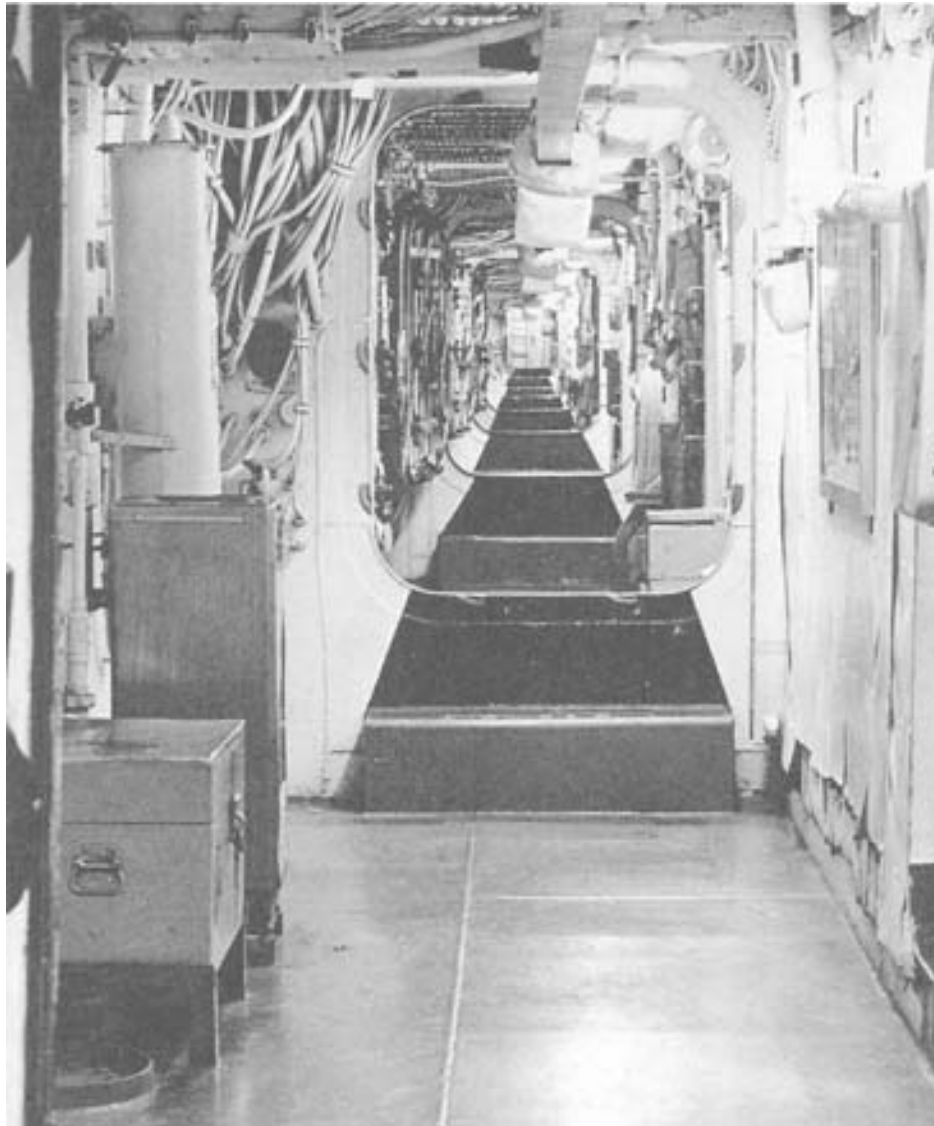
Rectilinear Perspective

Most lenses produce rectilinear perspective that are typical of what the human eye sees. This is to say that lines that are straight in the subject are reproduced straight in the picture. Most pictures are made with rectilinear lenses.

Fisheye lenses and the lenses used on panoramic cameras produce a false perspective. A panoramic lens produces panoramic or cylindrical perspective. In other words, all straight horizontal lines at the lens axis level are recorded as straight lines, and all other straight horizontal lines either above or below the lens axis level are reproduced as curved lines. The other false perspective is produced by a fisheye lens in which all straight lines in the subject are imaged as curved lines toward the edges of the picture.

Vanishing Point Perspective

In vision, lines that are parallel to each other give the sensation of meeting at vanishing points. When parallel lines, either horizontal or vertical, are *perpendicular* to the lens axis, the vanishing points are assumed to be at infinity. Other lines, those which are *parallel* to the lens axis, and all other parallel lines at all other angles to the lens axis meet at definable vanishing



PHC Jeff Hilton
302.303

Figure 5-21.—Vanishing point perspective.

points. Thus lines that are parallel to the lens axis, or nearly parallel, start in the front of the picture and meet at vanishing points within the picture or at finite points outside the picture (fig. 5-21).

Height Perspective

The place where the base of an object is located on the ground in a picture is a clue to its distance from the camera viewpoint; for example, in a landscape scene, the ground or ground plane rises toward the horizon. The higher up in the ground area of the picture (up to the horizon) that the base of an object is located, the further

away it seems from the viewpoint and the greater its height perspective.

Overlap Perspective

Another clue to distance in a photograph is overlap perspective. When subjects within the picture are on about the same line of sight, those objects closer to the camera viewpoint overlap more distant objects and partially hide them. It is obvious to the viewer that the partially obstructed object is behind the unobstructed object. This overlap is repeated many times within the picture and gives the viewer a sense of depth and a perception of the relative distance of objects.



PH3 Joan Zopf
302.304

Figure 5-22.—Dwindling size perspective.

Dwindling Size Perspective

Through the experience of vision, you are aware of the size of many common objects, such as people, trees, cars, buildings, and animals; for example, you are aware that most adults are about 5 to 6 feet tall; therefore, when two people are shown in a picture and one appears twice as tall as the other, you cannot assume that one is in reality taller than the other. Instead you assume the taller person is closer and the shorter person farther away from the camera viewpoint. In this same manner, you make a size relationship evaluation of all familiar objects. Thus you can make a distance determination from this size relationship evaluation. The farther away an object is from the viewpoint, the smaller it appears; therefore, when subjects of familiar size are included in a photograph, they help to establish the scale of the picture (fig. 5-22). Scale helps the viewer determine or visualize

the actual size or relative size of the objects in the picture.

Volume Perspective

When a subject is lighted with very diffused light, the three-dimensional form or volume of the subject is difficult to perceive because of the lack of distinct shadows. If, on the other hand, subjects are lighted with strong directional light from angles that cause part of the subject to be fully lighted and other parts to be in shadow, a visual clue of the subject's form or volume is provided. When a number of such objects are included within the picture area, the perception of form, volume, and depth is increased. When front or side lighting is used, the length, depth, and shape of the shadows cast on the ground provide a perspective of each object's volume. Also, the distance between shadows cast on the



302.305

Figure 5-23.—Atmospheric perspective.

ground helps you to perceive the overall depth of the scene.

Atmospheric Perspective

For all practical purposes, air is transparent. For most photography, this is fundamentally true; however, when pictures are made of subjects at great distances, the air is actually less than fully transparent. This is because air contains very fine particles of water vapor, dust, smoke, and so on. These particles scatter light and change its direction. The presence of scattering shows distant subjects in pictures as having a veil or haze. The appearance or effect of this scattering is proportional to the distance of the objects from the viewpoint. The greater the distance, the greater the amount of veiling or haze (fig. 5-23). The effects of this scattering of light are additive, but vary with atmospheric conditions.

In atmospheric perspective several factors must be considered:

- ◆ **Contrast**—The luminance of each object in a scene is a direct result of the objects reflective quality and the amount of light falling on it. When objects are far away, light from highly reflective objects is scattered; therefore, when viewed from a distance (or imaged on a print), the darker portions of these distant objects do not appear as dark and the contrast is reduced. When there are objects both near and far from the camera, the difference in contrast provides a perception of distance.
- ◆ **Brightness**—The particles in air that scatter light are also illuminated by the sun. This causes an increase in the overall brightness of the objects seen. This increase in luminance, coupled with a loss of contrast, causes objects in the distance to be seen and

photographed as lighter in color than they would be at a closer distance.

- **Color saturation**—The scattering of light not only affects contrast and brightness but also color saturation.

Color is defined by three qualities: *hue* (the actual wavelength), *saturation* (intensity or chroma), and *brightness* (reflective). A pure hue is fully saturated or undiluted. When a hue is desaturated or diluted, it is no longer pure but has gray intermingled with it. The actual colors of a distant scene appear to have less color saturation, because the light is scattered and also because of the overall presence of the desaturated (diluted) blue light of aerial haze. The original scene colors appear less saturated or pure when seen or photographed from a distance than from close-up; therefore, color saturation or desaturation allows the viewer to perceive distance in a color photograph.

- **Sharpness**—Because of atmospheric haze, there is a loss of image sharpness or definition in distant objects. This loss of sharpness is caused both by the lowering of contrast and the scattering of light. The loss of sharpness contributes to a sense of distance. This can be enhanced by setting the far limit of the lens depth of field just short of infinity. This procedure throws the most distant objects slightly out of focus. This combined with the other effects of aerial perspective intensifies the sense of distance.

PHOTOGRAPHIC LIGHTING

In this discussion of lighting, the basic lighting techniques used by photographers are presented. Lighting used primarily with a certain segment of photography, such as motion picture, TV, portrait, and studio, are discussed in the chapters relevant to that particular subject.

OUTDOOR LIGHTING

As a photographer, you work with light to produce quality pictures. The color, direction, quantity, and quality of the light you use determines how your subjects appear. In the studio, with artificial light sources, you can precisely control these four effects; however, most of the pictures you make are taken outdoors. Daylight and sunlight are not a constant source, because they change hourly and with the weather, season, location, and latitude. This changing daylight can alter the apparent shapes, colors, tones, and forms of a scene. The color of sunlight changes most

rapidly at the extreme ends of the day. Strong color changes also occur during storms, haze, or mist and on blue wintery days. The direction of light changes as the sun moves across the sky. The shape and direction of shadows are altered, and the different directions of sunlight greatly affect the appearance of a scene.

The quality of sunlight depends on its strength and direction. Strong, direct sunlight is “hard” because it produces dark, well-defined shadows and brilliant highlights, with strong modeling of form. Sunlight is hardest on clear summer days at noon. Strong sunlight makes strong colors more brilliant, but weak colors pale. Sunlight is diffused by haze, mist, and pollution in the air. This diffused or reflected light is softer; it produces weak, soft shadows and dull highlights. Directionless, diffused sunlight is often called “flat” lighting because it produces fine detail but subdues or flattens form. Weak, directionless sunlight provides vibrant, well-saturated colors.

Frontlighting

The old adage about keeping the sun at your back is a good place to continue our discussion of outdoor lighting. The type of lighting created when the sun is in back of the photographer is called frontlighting. This over-the-shoulder lighting was probably the first photographic advice you ever received. This may seem to be a universal recipe for good photography. But it is not. The case against over-the-shoulder lighting is it produces a flattened effect, doing nothing to bring out detail or provide an impression of depth. The human eye sees in three dimensions and can compensate for poor lighting. A photograph is only two-dimensional; therefore, to give an impression of form, depth, and texture to the subject, you should ideally have the light come from the side or at least at an angle.

Side Lighting

As you gain experience with various types of outdoor lighting, you discover that interesting effects can be achieved by changing the angle of the light falling on your subject. As you turn your subject, change the camera viewpoint, or wait for the sun to move, the light falls more on one side, and more shadows are cast on the opposite side of the subject. For pictures in which rendering texture is important, side lighting is ideal.

Look at a brick wall, first in direct front sunlight and then in side lighting. Direct, front sunlight shows the pattern of the bricks and mortar in a flat, uninformative



PHC Ron Bayles
302.88

Figures 5-24.--Comparison of front and side lighting.

way, but side lighting creates shadows in every little crevice (fig. 5-24). The effect increases as the light is more parallel with the wall until long shadows fall from the smallest irregularity in the brickwork. This can give an almost 3-D effect to a photograph.

Side lighting is particularly important with black-and-white photography that relies on gray tones, rather than color, to record the subject. Shadows caused by side lighting reveal details that can create striking pictures from ordinary objects that are otherwise hardly worth photographing in black and white. Anything that has a noticeable texture--like the ripples of sand on a beach, for example--gains impact when lit from the side. Landscapes, buildings, people, all look better when sidelighted.

This applies to color photography as well. Color gives the viewer extra information about the subject that may make up for a lack of texture in frontlighting, but often the result is much better when lit from the side.

Pictures made with side lighting usually have harsh shadows and are contrasty. To lighten the shadows and reduce the contrast, you may want to use some type of reflector to direct additional skylight into the shadow areas or use fill-in flash, whichever is more convenient.

Backlighting

When the sun is in front of the photographer, coming directly at the camera, you have what is referred to as backlighting; that is, the *subject* is backlit. This type of lighting can be very effective for pictures of people outdoors in bright sunlight. In bright sunlight, when

subjects are front-lighted or even sidelighted, they may be uncomfortable and squint their eyes. Backlighting helps to eliminate this problem. Backlighting may also require the use of a reflector or fill-in flash to brighten up the dark shadows and improve subject detail. Backlighting is also used to produce a silhouette effect.

When you use backlighting, avoid having the sun rays fall directly on the lens (except for special effects). A lens hood or some other means of shading the lens should be used to prevent lens flare.

EXISTING LIGHT

Existing light photography, sometimes called available or natural light photography, is the making of pictures by the light that happens to be on the scene. This includes light from table, floor, and ceiling lights, neon signs, windows, skylights, candles, fireplaces, auto mobile headlights, and any other type of light that provides the natural lighting of a scene--except daylight outdoors. (Moonlight is considered existing light.) Existing light then is that type of light found in the home, in the office, in the hangar bay, in the chapel, in the club, in the sports arenas, and so on. Outdoor scenes at twilight or after dark are also existing light situations.

Photography by existing light produces pictures that look natural. Even the most skillfully lighted flash picture may look artificial when compared to a good existing light photograph. With existing light photography, the photographer has an opportunity to make dramatic, creative pictures. Existing light allows the photographer greater freedom of movement because

extra lighting equipment is not required. Subject distance, when not using flash, has no effect on exposure; therefore, you can easily photograph distant subjects that could not otherwise be photographed using flash or some other means of auxiliary lighting. With existing light, you can make pictures that could not be taken with other types of lighting; for example, flash may not be appropriate during a change of command ceremony or chapel service. Not only can the flash disturb the proceedings, but it may not carry far enough to light the subject adequately.

For existing light pictures, your camera should be equipped with a fast lens—at least f/2.8, but preferably about f/1.4. The camera shutter should have a B or T setting, and for exposures longer than about 1/60 second, you need a tripod or other means of supporting the camera.

Because the level of illumination for many existing light scenes is quite low, you may want to consider using a high-speed film. When making pictures with plenty of existing light or when you particularly want long exposures for special effect, you can use a slower film; however, the advantages of high-speed film are as follows:

- Allows you to get adequate exposure for hand-held shots.
- Allows you to use faster shutter speeds to reduce camera and image motion.
- Permits the use of longer focal-length lenses when the camera is hand-held.
- Allows the use of smaller f/stops for greater depth of field.

When you are making existing-light color pictures indoors of scenes illuminated by tungsten light, use a tungsten type of film. When the light for your indoor color pictures is daylight from a window or skylight, use a daylight type of color film or use tungsten film with a No. 85B filter. Always use an exposure meter to calculate your indoor existing light exposure. When a bright window is included in the background, take a closeup meter reading of the subject to prevent the meter from being overly influenced by light from the window.

Pictures made indoors by existing daylight are pleasing to the viewer, because of the soft diffused light and the squint-free expression of your subjects. Open all the window drapes in the room to get the highest level of illumination possible. Pose your subject to allow diffused daylight to fall on the front or side of their face.

Try not to pose your subject in a position where too much of the facial features are in shadow, unless you are trying for a special effect, such as a silhouette. When you photograph your subject in direct nondiffused sunlight coming through a window, you have more light to work with, but the light is contrasty and your subject has a tendency to squint.

Indoor existing light, artificial or otherwise, may be quite contrasty; for example, when your subjects are close to the source of light and well-illuminated, while other areas of the scene are comparatively dark. By turning on all the lights in the room, you can make the illumination more even and provide additional light for exposure and at the same time reduce the scene contrast. The contrast created by some artificial lighting can also be reduced in an average size room by bouncing auxiliary light off the ceiling or by using reflectors. Adding auxiliary bounce lighting or reflectors means you are not making true existing light pictures, but this extra light helps to reduce contrast without spoiling the natural appearance of the scene.

Fluorescent Lighting

Indoor scenes illuminated by fluorescent lights usually appear pleasing and natural in real life; however, color pictures of these same scenes often have an overall color cast that makes them appear unnatural. Fluorescent light emits blue and green light primarily and is deficient in red light. Most color pictures made without a filter under fluorescent light are also deficient in red and have an overall greenish appearance. Used correctly, fluorescent light has some advantages over other types of available light. A room illuminated by fluorescent lamps is usually brighter and more evenly lighted than a room illuminated by tungsten lamps. This higher level of light makes it easier to get enough exposure for your existing light photography and helps record detail that may have been lost in the shadow areas with other types of existing light. When photographing people, however, fluorescent lighting often causes dark shadows under the subject's eyes. These shadows cause the eyes to appear dark and sunk in.

For making color pictures under fluorescent lighting, a negative color film with the appropriate filter is most often your best bet. Color negative film has a wide exposure latitude that permits, to some extent, a variation in exposure without detracting from the quality of the finished print. The greenish effect caused by fluorescent lighting can be partially corrected when the color negatives are printed.

For color slides with fluorescent light, a daylight type of film with the appropriate filter is best. Tungsten film usually produces slides with too much blue or green when made with fluorescent light.

As discussed in chapter 3, the use of filters for color photography helps to overcome the deficiency of red light in fluorescent lamps. Always consult the *Photo-Lab Index* for the best film filter combinations to use.

Pictures Outdoors at Night

Outdoor night scenes usually include large areas of darkness broken by smaller areas of light from buildings, signs, and streetlights. Pictures of outdoor scenes are quite easy to make because good results are obtainable over a wide range of exposures. Using short exposures emphasizes well-lit areas by preserving the highlight detail, while the shadow areas are dark because of underexposure. Long exposures help retain the detail of the dark areas, while highlight detail is lost because of overexposure.

Large, dark areas in night scenes make it difficult to make accurate exposure meter readings from your camera position. The best meter reading results are obtained when you take closeup readings of important scene areas.

Color outdoor pictures at night can be made on either daylight or tungsten-type films. Pictures made on daylight film have a warm, yellow-red appearance. Those made on tungsten film have a colder more natural look; however, both films provide pleasing results, so it is a matter of personal preference which you use.

A good time to make outdoor night color pictures is just before it gets completely dark. At this time, some rich blue (or even orange) is in the sky. This deep color at dusk gives a dramatic background to your pictures. Neon signs, streetlights, and building lights make bright subjects for your pictures. At night, right after it stops raining and everything is still wet, is another good time to make outdoor pictures. The lights in the scene produce many colorful reflections on the wet pavement, adding interest to what may otherwise be a lifeless, dull picture.

Many buildings look rather ordinary in daylight, but at night, they are often interestingly lighted. Try photographing the hangar at night, with the lights on and the hangar doors open. Also, your ship at night, especially a rainy night may make a very striking picture.

Outdoor events that take place at night in a sports stadium are usually well-lighted and make excellent subjects for existing light pictures. Most sports stadiums

(as well as streets) are illuminated by mercury-vapor lamps that look blue-green in color when compared to tungsten lamps. Your best color pictures made under mercury-vapor lighting will be shot on daylight color film, although they will appear bluish green because the lights are deficient in red.

Tips for existing light photography are as follows:

- Carry a flashlight so you can see to make camera settings.
- If you do not have an exposure meter or cannot get a good reading, bracket your exposure.
- Focus carefully; depth of field is shallow at the wide apertures required for existing light photography.
- When you have a scene illuminated by a combination of light sources, use the type of color film recommended for the predominant light source.
- For pictures of fireworks, support your camera on a tripod, focus at infinity, and aim the camera toward the sky area where the display will take place. Open the shutter for several bursts.

ELECTRONIC FLASH LIGHTING

In situations where there is little or no light available, a portable electronic flash unit is an invaluable piece of photographic equipment. With fast films and long exposures, you may be able to shoot existing light pictures, providing your subject remains still long enough. Although you can certainly get better lighting control with elaborate photographic lights, the simplicity and portability of electronic flash is unbeatable.

Electronic flash provides an excellent source of artificial light for exposing black-and-white and color daylight-balanced film. Light from an electronic flash unit (strobe) is characterized by softness, short duration, and color balance, approximating that of daylight.

By measuring the amount of light that actually reaches an object or scene, you can obtain a numerical value that can be converted directly into a flash guide number. The numerical value is the light output rating of an electronic flash unit measured in beam candlepower-seconds (BCPS) or more correctly, effective candlepower-seconds (ECPS).

Every electronic flash unit is assigned a guide number as a measure of its light output or power. The higher the guide number, the greater the light output. Guide numbers for various film speeds are usually

provided with each electronic flash unit. Information packaged with film may also provide guide numbers appropriate to their speed in regard to the various powers of electronic flash units. Manufacturers tend to overrate the power of their electronic flash units. When guide numbers are assigned by the manufacturer, they base the guide number on an average reflective subject and in a room with 10-foot light-colored ceilings. By using these methods, the manufacturers are able to take advantage of the film's exposure latitude.

Like exposure meters, guide numbers are not infallible and some variation from assigned values should be expected. To ensure accuracy of the flash unit, you must check the efficiency of your electronic flash unit to determine your own reliable guide numbers. The steps used to check efficiency are as follows:

1. Place your flash unit (on the camera) exactly 10 feet from a live model who is holding a series of cards—one for each f/stop marked on your lens.
2. Load the camera with the type of film you want to test.
3. Focus the camera on the model and make an exposure at each of the f/stops marked on the cards.

For each exposure, instruct the model to hold up the card marked with the f/stop to be used so it shows noticeably in the picture. Process your film normally, examine the proof sheet or slides carefully, and choose the one shot that best reproduces the model's skin tones. Multiply the f/stop on the card in that picture by 10 (the flash-to-subject distance) and you have the guide number for that particular film and flash unit combination. If, for example, the best exposure was made at f/8, the guide number is 80 ($8 \times 10 = 80$). Once you have determined the correct guide numbers for use with various films, make up a reference chart and attach it to your flash unit.

Correct exposure with electronic flash depends upon four factors:

- The power or light output of the flash unit
- The ISO speed of the film being used
- The flash-to-subject distance
- The f/stop setting

Shutter speed is not a factor since the time of exposure is governed solely by the duration of the flash.

Notice we always speak of *flash-to-subject distance*, never camera-to-subject distance. With all types of artificial illumination (the same as with

sunlight), the only consideration is the amount of light reflected from the subject. The distance between the camera and the subject has no bearing on exposure. When the flash is used off of the camera, the basic f/stop is still calculated with the flash-to-subject distance.

AUTOMATIC ELECTRONIC FLASH UNITS

Most electronic flash units can be operated in an automatic exposure mode. An automatic flash unit eliminates the need to determine the correct f/stop for each flash-to-subject distance, providing the subject is within the flash distance range of the unit.

On the front of an automatic flash unit, a sensor reads the light reflected from the subject that is produced by the flash. When this sensor is satisfied with the amount of light received, it automatically shuts off the flash. The closer the subject is to the lamp, the quicker the sensor shuts off the light.

Some automatic electronic flash units allow you to select two or more apertures to control depth of field. To determine an f/stop in the automatic mode, you can use the calculator dial, located on the unit that is being used. By matching the indicator to an ISO film speed number on the dial, you can use the f/stop within a minimum and maximum distance. Once an f/stop is selected and set, it becomes a constant factor regardless of the flash-to-subject distance, providing it is within the flash distance range of the unit. This feature allows the photographer to move closer to or farther away from a subject without having to calculate an f/stop for each change of flash-to-subject distance (fig. 5-25).

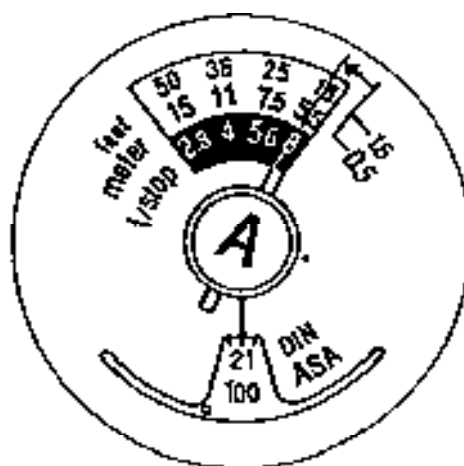


Figure 5-25.—The automatic operating range, using ISO 100 film at f/2.8, is 1.6 to 50 feet.



Figure 5-26.—Manual exposure scale.

When the flash unit is in the manual mode, the f/stop must be changed each time the flash-to-subject distance changes. A scale on the flash unit indicates the proper f/stop to use for the various distances. To determine the flash-to-subject distance for on-camera flash, focus on the subject and read the distance directly from the focusing ring on the camera. Figure 5-26 indicates with ISO 100 film at full power the proper aperture setting at 10 feet is between f/11 and f/16.4 feet is f/32, 40 feet is f/2.8, and so forth.

SINGLE FLASH

The majority of your indoor photographs will be produced using a single-flash unit. Numerous reenlistments, frockings, and promotion ceremonies are conducted indoors where the lighting conditions are unfavorable for available light photography. There are various methods in which a single flash can be used to produce high-quality professional photographs that distinguish you, the Photographer's Mate, from the amateur snapshooter.

On Camera Flash

A commonly used flash technique is to have the flash unit attached to the camera in synchronization with the shutter and aimed directly at a subject. An advantage of having your flash unit attached to the camera is it provides you the chance to capture the unexpected—the truly candid shot. When spontaneity sparks the action and quick-camera handling is a must, the fewer pieces of equipment you have to worry about or handle the better. Rather than two pieces of gear—the camera and

the flash—you have only one—the camera with the flash attached to it; however, this technique usually produces objectionable shadows behind the subject.

To help reduce the harshness of the shadows produced behind your subject when a single flash is used at the camera, place some diffusion material, such as a white handkerchief, cheesecloth, or frosted cellulose acetate, in front of the flash. Of course, diffusion reduces the intensity of the light, and the exposure has to be increased accordingly when using the manual mode on the flash unit.

Most imaging facilities are equipped with flash brackets. When you are using a flash bracket, it is possible to rotate the flash when changing formats from horizontal to vertical. When shooting people in the vertical format using a flash unit, always position the flash above the lens. If the flash is below the lens, long objectionable shadows are cast behind the subject, and the subject has an unnatural, eerie, sinister effect.

Red Eye

A result that may appear with direct flash is “red eye.” Red eye occurs in pictures of people and animals when the flash is used close to the optical axis of the lens and the subject is looking at the camera. Light reflecting from the blood vessels at the back of the eye causes this effect. The darker the room is, the stronger the effect, because the pupils of the eyes become more dilated. Red eye can easily be avoided by moving the flash away from the lens optical axis. Also, the effects of red eye can be minimized by turning up the room lights.

Bounce Flash

One of the better methods to illuminate a subject or scene with a single-flash unit is to use *bounce flash*. There are times when you want a very soft light in order to lessen the tonal range between highlights and shadows and to soften harsh background shadows. You can achieve this soft lighting by bouncing, or reflecting, the flash off a light-colored surface. By doing so, you are changing the narrow spot of light from a flash unit into a wide diffused area of light. When shooting color film, avoid colored walls and ceilings. They reflect their color onto the subject, causing a color cast over the entire subject area. You should use bounce flash in all



DIRECT FLASH



DIFFUSED FLASH



BOUNCE FLASH

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Figure 5-27.—Effects of direct, diffused and bounce flash.

situations where there is a 8- to 10-foot-white ceiling. Your photographs of reenlistments, frockings, awards, and so forth, will have a more pleasing effect.

Most bounce flash pictures are made with the light directed at the ceiling, either above the photographer or above the subject, or somewhere between. A silhouette effect can be produced by bouncing your flash off the ceiling behind the subject. To accomplish this, aim your flash unit so most of the light bounced off the ceiling falls on the background behind the subject and calculate the exposure for the background.

For the flattest bounce light, try bouncing the light off a wall behind the camera. With this lighting, you will have practically no shadows. Here, you have to calculate your exposure based on the flash-to-wall-to-subject distance.

For side lighting, bounce your flash off a wall to the side of your subject. This type of lighting helps add a feeling of three dimensions to your picture.

For the best control, use a large reflector designed for bounce lighting. Special-made reflectors are available that are lightweight, compact, and portable. For closeup work, the best bounce reflector is about 3 by 4 feet square. For full-length subjects, try a reflector about 6 by 6 feet.

To determine the exposure for bounce flash using the manual mode on your flash, you must determine the flash-to-ceiling-to-subject distance and determine your

f/stop and then open the aperture two additional f/stops. The two additional f/stops are added to compensate for loss of light due to scattering and absorption by the reflecting surface.

When an automatic flash is used in the automatic mode, it is not necessary to open up two f/stops. The sensor automatically cuts off when the proper amount of light is reflected from the subject to the flash unit.

When the ceiling is high or dark, a compensation to the basic exposure may be required. For effective use of the bounce-flash technique, a considerable amount of practice is required. As with any flash photography technique, identify any areas or surfaces that may be potential problems. Remember, one of the basic principles of reflected light is that the angle of incidence is equal to the angle of reflectance. Highly polished or glass surfaces should be considered before the subject is photographed. Items, such as windows, glass tabletops, glass framed photographs and polished metal, can cause glare or a "hot spot" in your photograph. When you are using bounce lighting techniques, "hot spots" of vertical surfaces are normally prevented, because the light source striking the surface is angled from above or the side; however, when you are using bounce lighting techniques, horizontal surfaces, such as glass coffee tables and overhead light fixtures, can cause a strange diffused lighting pattern in the photograph.

When using a single, on-camera flash, experiment with direct, diffused, and bounce-flash techniques and

determine which method provides the best results under various conditions. The method you choose to light the same subject separates you from the average snapshot shooter (fig. 5-27).

Off Camera Flash

Some of your best flash pictures can be made with the flash unit off the camera. Holding the flash off the camera and above the lens tends to throw the shadows down and behind the subject. This is a good way to minimize distracting background shadows that occur when a subject is standing close to a wall. A flash held high above the lens, either left or right, makes the viewer less conscious of the flash illumination. People are accustomed to seeing things lit from above, and by placing the flash above the subject, it closely resembles the lighting of the sun or ceiling lights.

Light that is far enough off the camera to illuminate the subject from an angle produces modeling or roundness. This type of light creates the illusion of a third dimension—depth—and is more pleasing to the viewer than the two-dimensional flat effect you get with direct, front lighting. Light from an angle can also be used to bring out the texture of a subject.

Indoors, two factors are important when determining the modeling and texture effects you will get: first, the surface of the subject itself; second, the way you light that subject. To illustrate these points, try photographing a Ping-Pong ball and a tennis ball together. When you use direct, front lighting, your picture records a two-dimensional visualization of height and width, but little of roundness, depth, or texture. When you light the balls from the side, both acquire the illusion of depth; however, only the tennis ball reveals texture. The Ping-Pong ball is much smoother and is almost textureless.

Now substitute a young child and an old person for the balls. With frontlighting, most of the lines and wrinkles in the old person's face will be minimized by the evenness of the light; however, when lighted from the side, almost every crease will become a shaded area and the ridges will be highlighted. Thus the texture of the old person's face is emphasized. The child, on the other hand, when side lighted, is still almost textureless just as in the case of the Ping-Pong ball.

LIGHTING RATIO

Lighting ratio can be considered as a measure of contrast. Lighting ratio refers to the combined intensity (at the subject) of the main and fill lights as compared

to the intensity of the fill light alone; for example, both the main and fill light of equal intensity are shining on the subject. A reflected light meter reading is taken off an 18-percent gray card at the subject position that indicates there are 100 units of light falling on the subject. Now, with the main light turned off and the fill-in light still illuminating the subject, the reflected meter reading indicates there are only 50 units of light falling on the subject; therefore the lighting ratio is 2 to 1. Lighting ratio is usually expressed as the comparison of two light intensities, such as 1:1, 2:1, 3:1, and so on.

The largest number in a lighting ratio indicates the most intense illumination at the subject position; for example, a 2:1 ratio indicates the most intensely lighted portion of the subject (highlights) is receiving twice the amount of illumination as the least intensely lighted portion of the subject (shadows). The light that produces the most intense illumination is called the main, key, or *modeling* light. The light that produces the least intense illumination is called the fill, or fill-in. A fill or fill-in light, as the name implies, fills in and softens the shadows produced by the main light.

Because a lighting ratio is a comparison of the combined main and “fill light” illumination intensities to the fill light illumination intensity alone, the fill light must be in a position so it completely illuminates the portion of the subject visible to the camera. This requires positioning the fill light close to the lens.

As a rule, 3:1 lighting is considered the best general lighting ratio for both black-and-white and color photography. This 3:1 ratio provides normal contrast between the highlights and shadows and produces good natural-looking photographs.

Some automatic electronic flashes allow you to control the output of light. When set in the manual position, you can adjust the light output by changing the intensity of the flash unit to 1/2, 1/4, 1/8, 1/16, and so forth. This allows you more control of flash-to-subject distance as well as aperture (depth of field) control.

Achieving the desired lighting ratio with an automatic flash unit where the flash intensity can be controlled is quite easy. To achieve a 2:1 ratio, you set both flash units at the same distance and at the same intensity (either full power, 1/2, 1/4, and so on). To achieve a 3:1 ratio, set both flash units at the same distance and set the main light flash at full power and the fill flash at one-half power. A 5:1 or even higher lighting ratio can be obtained by setting both flash units at the same distance and the main flash at full power and the fill flash at one-fourth power, and so on. In order to

select a wider aperture to control depth of field, start by setting your main flash at one-half or one-fourth power and adjust your fill flash appropriately.

Adjusting lighting ratios by flash-to-subject-distance is another method to control lighting ratios. An easy way to calculate footage for a 3:1 ratio with two lights of equal intensity is to think of the full f/stops (2, 2.8, 4, 5.6, 8, 11, 16, 22, etc.) as distances in feet. Place the main light at the desired distance closest to one of the "f/stops," and place the fill light at the distance indicated by the next larger number; that is, 5.6 feet and 8 feet or 16 feet and 22 feet, and so on.

Another easy method to control the lighting ratios using an automatic electronic flash is to use the flash unit in the automatic mode. When set in the automatic mode, the flash-to-subject distance is not supercritical, and there is some leeway as long as the flash units are within their operating range.

To obtain a 2:1 lighting ratio, you simply have both flash units set at the same automatic setting and at approximately the same distance from the subject. For a 3:1 lighting ratio, use the same automatic setting and approximately the same flash-to-subject distances, but set the fill flash at twice the film speed as the film being used (main flash setting). For a 5:1 or even higher lighting ratio, use the same automatic setting and approximately the same flash-to-subject distance and set the fill flash at four times more than that of the main flash, and so on.

Any lighting ratio can be obtained when using an automatic flash unit. By controlling the power output intensity, adjusting the film speed setting, changing the main and fill flash distances, or a combination of the three, you can manipulate the lighting ratio easily to any ratio. As with any stage of photography, practice and testing with your camera and flash combinations in various situations produces the best results.

SYNCHRO-SUNLIGHT

Bright sunlight, used as the only means of illumination for an exposure, can produce deep objectional shadows on a subject. When a flash unit is used as a fill-in source of illumination, it reduces these shadows and is known as synchro-sunlight photography.

Improperly handled, the synchro-sunlight technique can produce an effect that makes the photograph appear as if taken at night with a single flash. This effect occurs when the flash illumination is more intense than the sunlight.

The first step for proper exposure with synchro-sunlight is to calculate the correct exposure for daylight, and set the shutter speed and f/stop as though a flash is not being used; however, keep in mind when using a focal-plane shutter, the shutter speed must be synchronized with the electronic flash unit. Avoid using a fast film in bright sunlight when using a camera equipped with a focal-plane shutter. In this case, you are limited only to your aperture to control the exposure of the film, because your shutter speed is nonadjustable. A leaf shutter has an advantage over a focal-plane shutter. When a leaf shutter is used, it provides more control over depth of field since the shutter synchronizes at all shutter speeds.

When you are using an automatic flash, the same principles apply for synchro-sun that were explained in the section for lighting ratio. The sun is used as the main light, and your camera settings are determined directly from your light meter. The easiest method is to set the film speed (ISO) on your flash unit to twice the film speed being used for a 3:1 lighting ratio and four times the film speed being used for a 5:1 ratio. A fraction of the manual power output can also be used to achieve the desired lighting ratio.

Remember to compensate your exposure by opening up two f/stops for a backlit subject and one f/stop for a subject that is sidelighted when taking your light meter reading from a distance. For color photography, you should normally use a 2:1 or 3:1 lighting ratio. For black-and-white photography, a ratio of 3:1 to 5:1 is acceptable.

MULTIPLE-FLASH UNITS

Multiple flash is the use of two or more flash units fired in synchronization with the camera shutter. The flash units can be auxiliary flash units, connected to the camera by extension cords, or they can be slave flash units. Slave units usually have self-contained power sources and are fired with a photoelectric cell when light from a master flash unit strikes the cell of the slave unit.

With multiple flash, exposure calculations are based on the distance between the subject and the flash unit that produces the most intense illumination to the subject; therefore, you can have numerous auxiliary flash units or slaves for a scene and only calculate your exposure from the mainlight source. All other flash units should be equidistant or at a greater distance from the subject as compared to the flash unit on which the exposure is based.

When two flash units of equal intensity and at equal distance from a subject illuminate the same area, the exposure for one unit should be determined and then the exposure should be halved because twice the intensity of light is reflected from the subject.

OPEN FLASH

Flash pictures can be made without the camera shutter and flash being synchronized, using a technique called open flash. In the open-flash method, the camera shutter is set at T or B, the shutter is opened, the flash unit fired, and the shutter closed. The open-flash technique is sometimes used when the level of light over a large scene is very low or at night. This method of flash photography allows the photographing of large scenes that ordinarily are quite difficult to illuminate with artificial light. The photographer can walk into a scene with the flash unit and illuminate sections of the scene or the entire scene. Any number of flashes can be used during the exposure while the shutter remains open. A silhouette of your body can be recorded if your body gets between the flash and the camera.

To arrive at the exposure for an open-flash picture using a manual flash, determine your flash-to-subject distance and f/stop. Keep the distance equal to the objects being illuminated when using manual flash; for example, when the f/stop for the scene is f/5.6 based on a flash-to-subject distance of 10-feet, every flash within the scene should be 10 feet from that section of the scene being illuminated. When an automatic flash is used, the flash automatically shuts off when the proper amount of light is reflected from the subject, providing the object is within its distance range. When you are using a manual flash, the exposure for open flash is determined as previously discussed. This is true unless two or more flash units with equal intensities are used at equal distances, or two or more flashes from the same unit at the same distance are used to illuminate the subject.

MULTIPLE EXPOSURES WITH ELECTRONIC FLASH

Interesting multiple exposures can be made with only one or two electronic flash units. Multiple exposure pictures, besides being artistic and interesting, are often used to study subject motion and position. This can be accomplished by the following procedures:

1. Darken the room and position your subject against a black background.

2. Allow enough background area for the number of different exposures you intend to make. When you

are using a ground glass camera, mark off on the glass, with grease pencil, the areas where the subject should be for each different exposure. If not using a ground glass camera, make a pencil sketch to help you position the subject.

3. Set up the electronic flash lights so the minimum amount of illumination falls on the background itself.

4. Turn off all room lights and make your first exposure. Then, without advancing the film, move your subject to the next position for the second exposure. Repeat this procedure for each image you want to record on the film.

PHOTOGRAPHING ACTION WITH ELECTRONIC FLASH

Action of any kind, no matter how slight, can add interest to most pictures. Each type of action requires a different camera technique, but because of the short duration of light from electronic flash, it is ideal for recording any action ranging from a fleeting expression to a sports triumph. Most electronic flash units have a maximum flash duration (the length of time the light is on) of about 1/800th second, and a minimum flash duration as short as 1/20000th second, thus you can “freeze” almost any action with the flash.

Indoors, where there is little existing light, you have no problem because the electronic flash itself stops the action; however, outdoors in daylight, you may encounter ghost images. Ghost images can occur when existing light and a slow shutter speed are used in conjunction with electronic flash. A ghost image appears as a blur when one image is recorded by the existing light and a second sharp image by the electronic flash.

ELECTRONIC FLASH AT NIGHT

Flash photography, outdoors at night, can produce very underexposed photographs if not taken properly. Outdoors, flash does not carry very far; therefore, it can be difficult to light objects from a distance; however, this limited coverage also gives you great control. Indoors, part of the output of a flash unit is reflected from the ceiling and walls back to the subject. Rarely do you find such reflective surfaces outside, so some light is lost. To compensate for the light lost, you must open up your aperture when photographing objects at any distance. Because so much light is absorbed in these large areas, it may not be uncommon to open up your aperture two or three f/stops. Tests should be conducted before shooting in large, indoor areas, such as gymnasiums and hangar bays or outdoors at night, to

determine which flash, camera, and film combination produces optimum results.

At night a single on-camera flash produces stark lighting, and your subject is flatly lit and the background goes completely black. Close foreground details become very overexposed, and it is better to exclude them. Such simple lighting is ideal for action shots; for example, capturing leaping karate experts in midair at midnight. Subjects such as these benefit by being isolated from the background, but you may get more interesting lighting by using the unit off camera on an extension cord.

If the necessary flash-to-camera distance is greater than the length of your extension cord, use the open-flash method. Do not allow the camera to “see” the flash unit during the open-flash exposures.

Now that you have a basic knowledge of photographic techniques, it is important that you apply and practice the basic principles. Each and every time you pick up a magazine, book, or newspaper or watch TV or see a movie, you are exposed to various composition and lighting techniques. Study them and apply them every time you look through the viewfinder of a camera. Remember, experiment with different camera angles to create interesting perspectives of your center of interest. Whether using available light or flash photography, notice what results the direction, intensity, and type of light have on your final product. Continual application and refinement of the principles of composition and lighting can greatly enhance the quality and aesthetic value of your photography.

CHAPTER 6

PHOTOGRAPHIC ASSIGNMENTS

Photography in the Navy has long been an important tool for monitoring the strength and improving the methods of our nation's fighting forces, as well as serving to record for historical permanence the significant events that have shaped our nation's destiny. From the moment that Matthew Brady exposed his photographic plates on the decks of the federal ironclad ship, *Monitor*, in 1862, the Navy has used photography as a significant recording medium. It has influenced the development of weapons and ships in the Navy and has been an invaluable aid in training the men and women who make up today's Navy.

Today we can go to the archives and look back with pride at the visual evidence of the Navy's growth, generation after generation. The historical record tells us where we have been, what we were, how far we have progressed, and how we have changed-enhancing our perspective of the past and clarifying our perception of the future.

The "grandfather" of our profession, still photography, is the oldest of photographic skills in the Navy. Where events of historical significance occur, such as military exercises, ships being commissioned and decommissioned, and newsworthy events of interest to Navy personnel, there are Navy photographers recording events as they happen.

PLANNING

Planning prevents disappointment. If only I had an idea of what to expect, this picture might have been better. How many times have you said this to yourself? Planning does not cover all the bases on every assignment, but it can be valuable on many of them.

Color or black and white . . . small, medium, or large format? This question may sound basic, but you should consider it thoroughly when preparing for an assignment. Take time to consider the finished product and its intended use.

Punctuality is the only policy. As a minimum, be on time. However, why not get there 10 or 15 minutes ahead of the assigned time? You can use this time to look over the area for lighting, background, props, and so forth. Also, discuss the assignment and what you need with the people connected with them. Take charge

courteously. Politely ignore harassers. Begin work at once and give clear, concise directions. But do not think this approach takes the place of your responsibility to BE COURTEOUS AT ALL TIMES.

Dependability versus creativity. Strive to shoot for the results that your customer requested. Then shoot what you consider to be an improvement on the original requirement.

Pictorial details are important. Before the shutter catches that moment, make sure you have checked or considered the foreground, background, arrangement, expressions, clothing, angle, and lighting. You have to mentally put all these items together and say to yourself, Will this tell the story?

Identify. When the photograph has been recorded, begin taking identification Caption information should include name, grade, and title. If possible, you might have someone on the scene taking identification while you are shooting.

Always check your equipment before leaving for a shooting assignment. As a minimum, you should take several extra rolls of film and a spare synchronization (sync) cord. When using a flash and a large number of photographs are to be taken, you may need an extra battery pack. Always be prepared and attempt to overcome the unexpected.

EQUIPMENT

After learning the nature of your photographic assignment and making a complete analysis of the assignment, you must choose the proper equipment to get the job done. The variety of photographic equipment available and suited for location assignments is extremely broad; for example, the assignment may require the use of a 35mm, medium format, or even a 4x5 view camera. The lighting equipment you choose may range from a small, compact electronic flash unit to a complex array of lighting equipment and reflectors. Exposure meters, color temperature meters, tripods, and interchangeable lenses are just a few of the other accessories you may need on a location assignment.

"Be prepared." At one time or another we have all heard that familiar quotation. But have you ever thought what this could mean to your assignment? For want of

a gizmo, a photograph was lost; for want of a photograph, an assignment was ruined; and for want of an assignment, your reputation as a photographer was destroyed. No, we are not really concerned with gizmos here. What we are concerned with is your equipment. Do you have everything you need when you get to your assignment and does it work? Nearly all photographic equipment has one or more critical components-the failure or loss of which may put a vital piece of gear out of operation. With cameras, one of these items is the battery, because it may power both the meter and the shutter. Check the battery before you leave the lab, and ALWAYS carry a spare. You have a super deluxe all-powerful electronic flash unit that can light up the entire hangar deck in the wink of an eye. Or can it? Did you check it out and was it working before you left the work center? Did you remember the power cord and an extra sync cord? Speaking of synchronization, did you make sure the flash was in sync with the camera shutter? Or was the shutter even working? What about the camera lens-is it clean, does it focus correctly? The diaphragm-is it working?

In the studio, a minor failure usually only causes embarrassment and gives the impression of unprofessionalism. You can usually get a spare camera, lights, and tripod into service. But when you are out on location, you are limited in what you can take with you; therefore, it is important that ALL your equipment be thoroughly tested and operating correctly BEFORE you leave the work center.

MARKING YOUR EQUIPMENT

If you have been issued your "own" equipment, put your name on it. Of course, you should not put your name on it permanently. Use stick-on labels. Having your name on your equipment does not keep anyone from stealing it; it is only there to let other people in the workcenter know it is "yours" **and they best keep their hands off.** Navy photo equipment must be marked permanently with both a serial number and "U.S. Navy Property." If the manufacturer did not include a serial number on the equipment, a local serial number is assigned, using the unit identification code (UIC) under which the equipment is assigned, plus a dash and a two or three-digit number that identifies the specific piece of equipment; for example, if you receive a new light meter without a manufacturer's serial number, your work center UIC is 62093, and you have 76 other pieces of equipment assigned local serial numbers, then the serial number for the new meter is 62093-077.

EQUIPMENT SECURITY

In the photo lab, your equipment should be secured when not in use. Most imaging facilities have a camera-crew ready room or locker that is kept locked so only authorized personnel have access to valuable photo equipment. On location, however, security is another matter, particularly when away from your home station. There may be times when you must leave equipment in a BEQ or motel room. There are measures you can take to protect this equipment. The first principle is do not advertise your equipment. Do not put anything on the equipment cases to indicate they contain photographic equipment. Do, however, put your command address on the cases. The second principle is not to leave photo gear out of your sight any longer than necessary. Carrying a camera bag with you to chow may be inconvenient-but this is better than leaving it unattended somewhere. Also, do not leave your photo gear in a location where it could easily be picked up or stolen. Keep a strap attached to the bag or case, and drape it over your knee.

PHOTOGRAPHING PEOPLE

People are probably one of the most rewarding subjects for photography. Good pictures of people capture the gestures and expressions that convey vitality and character without the subject appearing self-conscious.

Basically, assignments for photographing people fall into two general categories: pictures of a single person and pictures of a group of people.

For the mediocre photographer, all the picture of a person must do is identify a person. But good photographers steer away from these identification pictures. The photographer is after something different, something not too loose and not too formal-something that pictures the person, not just his features. One approach to capture these characteristics is the candid photograph.

CANDID PHOTOGRAPHY

Most photographers are familiar with candid shots of people they do not know. It may be true that the average photographer thinks of a candid photograph as one that is not set up or one the subject does not know is being taken. Photographers have learned that candid techniques can be used just as effectively to make pictures of people they know, even when the people know they are being photographed. The key to success as a candid photographer is to keep a low profile, but you do not have to be sneaky. A candid shot is a candid shot, whether it is of the admiral at a news conference

or a “genuine candid” of a sailor you just happen to see. The technique is the same in both cases. All that is important is for the pictures not to appear posed. The subjects of candid photographs are not posing or acting; they are simply being themselves and behaving as though the photographer is not there.

The compactness of 35mm cameras make them ideal for candid photography. SLRs with their fast, interchangeable lenses, TTL metering, and large film capacities make candid photography one of the most rewarding areas of our profession. A long-focal-length lens is also a good choice for this type of photography. The long lens lets you maintain distance between yourself and the subject, and, if people are aware of your presence, they will not be as self-conscious. If you are taking “real” candid shots, a long lens is a necessity.

When people know you are shooting them, get them to occupy themselves, so they will “forget” there is a camera watching them. Only then, can you get a truly candid picture. When the person notices what you are doing, ask their permission before you shoot. People usually will not object, particularly if you are polite and work quickly. Stay casual and relaxed. People soon get used to seeing you with the camera, and you will be on your way to some good candid pictures.

Preset your focus and exposure whenever possible so you can respond quickly and avoid attracting attention to the camera. Estimate the likely subject distance, set it on the lens focus scale, and stop down for greater depth of field. Camera handling must be fast and smooth. Time does not allow for fumbling with camera controls, flash equipment, exposure meters, and film loading.

Keep alert, keep looking, and keep shooting. Shoot plenty of film. Do not be stingy; in the long run, film is cheap. You will miss enough good pictures by the very nature of your subjects-people-and being tight-fisted with film does not increase your chances for getting good pictures.

Do not try to control the people you are shooting. Let them assume a natural “pose” in an appropriate setting. You may tell them, “please do not look at the camera.” Try to capture the details of their environment in your pictures. This adds interest to what they are doing. And finally, make your candid pictures reflect the people and events around you.

There are situations when you do not have the time for a candid approach, or it just is not feasible. You can still produce interesting people pictures by using the “frame approach.”

FRAMING PEOPLE IN THEIR ENVIRONMENT

The “frame approach” simply means posing your subject in a situation or environment that is most meaningful to the subject or assignment.

When your subject is a chaplain, place him before a chapel or at a desk with a cross that is visible over his shoulder. If the person is a Boatswain Mate, get him or her on deck actually working on the job. Put the Navy instructor near a blackboard or the pilot in an aircraft. The frame approach works with people working in all types of environments and ratings, such as Machinist's Mates, Airman, Fireman, Personnelman, Opticalman, and so forth. It works with just about everybody. It is easy. Your subject is usually more relaxed in his or her own environment, and props to work with are already there.

Before you approach an assignment, have the one key ingredient to success in mind-**a definite idea of what you want**. In other words, plan ahead. Find out all you can beforehand about the subject and the environment. What could be worse than arriving at an assignment and finding your “just average” Personnelman is really six-foot-four, completely bald, and wearing thick bifocals. It might help to know that even though you find the person in a “closet” called an office, most of the work is done in the computer room down the hall-the one with the banks of computers and tape racks that make wonderful “frames.”

There are some things you must remember. Use the frame approach to maximum advantage. The first and foremost is to **exaggerate**. Be sure to really have a frame for your subject. If your subject is a legal officer, make sure there is no mistaking that this person works in the courts or with books and papers. If your chemist is at a blackboard, make sure that there is something on it and that the test tubes are not hidden or too few. Again, **exaggerate**. You are going from three dimensions to two. Do not be subtle. Your objective is to make a meaningful picture of a person, not just an identification shot. Vary your setup-get in tighter-back off some-change camera angles-and keep the subject prominent.

The overall result of your efforts should be a unique picture. Even if you were unable to capture the personality of your subject, the picture should at least be personable. This can be done by making the person a prominent part of the picture. Photograph the person in a meaningful environment, one that gives a sense of who the subject is, and what he does, rather than leaving the viewer with a sense of only what he looks like.

The objects needed to frame your subject must be associated with the person. You would not want to frame a Seabee with the wings of an airplane (unless of course a runway is being constructed). The Seabee would be better framed by the arch of a new building being constructed, or the hood and engine of a dump truck. The frame should add emphasis and lead the viewer to the subject. **Do not make the frame the subject.** The frame does not always have to be in focus or "box" the subject. Study pictures of people that have been framed. Sometimes the frame is only on one side of the subject, sometimes in back of the subject, and sometimes only in the foreground. Seldom does the frame completely box the subject.

PEOPLE WORKING

When you read an article about someone, it may be accompanied by a picture of the person who is often at work. A picture of someone at work says more to a viewer than an ordinary head-and-shoulders identification ever can, because it immediately places the person in a particular setting.

The secret to making good working pictures is to capture the atmosphere of the **place** and show the **subject** actually **working**. The use of a wide-angle lens lets you show a large work area from close in. This conveys a better idea of the working conditions. Try to bring out the atmosphere of the worker and the workplace; for example, if your subject does hard manual labor, try a low camera angle to create an impression of power. Although it is usually better to photograph a worker as though he were unaware of your presence, this is not always possible. Warn people when you are going to use the flash, so you do not startle them. When shooting at a slow shutter speed, you can even ask the worker to hold a pose.

Most people who are working are involved with something that can provide a prop: books, scale models, equipment, and so forth. Use these props to create a stage and put the people into it—really into it.

TWO-SHOTS

So far, the discussion has been based on shooting pictures of only one person. Another assignment facing the photographer is handling the two-shot, a picture showing two people.

People can be pretty awkward when told to "just be natural" or "just talk to each other." It is better to give them something to talk about. Have them talk about what they are doing. Tell them you are listening to what they say so you can have information with which to write your captions. Better yet, give them something

they can actually handle, talk about, and concentrate on. This makes the situation more realistic to them, and it results in better quality pictures.

Try the frame approach for your two-shots. It is very effective. Even people can be used to frame other people.

DIRECTING PEOPLE

One of the most difficult tasks in photographing people is directing them. But you, the photographer, are the only one that can actually see what the picture is going to look like before it is taken. So, you must take the responsibility for setting up the "pose." It is not enough to let your subjects just arrange themselves. They have no idea what they look like.

One way to make directing and posing easier is to give your subject something to do. Do not tell your subject to "just stand there," as though in a vacuum, with nothing to do. Instead, give your subject something to handle. For a man, it might be a pipe, a book, a spyglass, or a tool they use in their work. For a child, it could be a doll, a model plane, or something of a similar nature. Often a woman can use an item of clothing in this way—a hat or a scarf.

Another useful tip is to give your subject a "prop" or a support in a more literal sense—something to lean on or sit on. A chair, stool, post, or tree can be used. When using props, frames, and poses, do not forget one important point: The Navy uses photographers so its pictures are made by professionals. These are people who know what they are photographing and the reason why. A civilian photographer could most probably make an excellent picture of a Navy scene; however, it probably will show technical errors that make the picture look like a joke to other sailors. Do a little research. If using props that you do not understand, ask about them. Do not have a sailor hauling on a line that should be taken to a capstan or a Gunner's Mate holding a 3-inch shell in front of a 5-inch gun.

Eyes are very important when photographing people. You must direct the subject to ensure that all parts of the scene are in the right place or in proper perspective. You must also direct the expression of the subject. The eyes are a very vital part of this and have a significant effect on the viewer's response. In a picture where the eyes of the subject are looking straight into the camera, a strong and immediate impact is created. This attracts viewer interest. When the eyes are directed away from the camera, the effect is less explicit and has a more ambiguous quality.

Finally, you must be in charge of the situation. It is up to you to tell the subjects where to stand, what to do, how to do it, and when to do it. This applies to everyone.



PHC Chet King
302.272

Figure 6-1A.—LT(jg) Robin T. Russler stands watch on the flag bridge of the USS *Tripoli*.

Do not fear the brass. They need directing too; after all, you are the professional and that is why they “hired” you—to do your job and to produce the best possible pictures of them. Many people are nervous and self-conscious in front of a camera. They try to look their best, and in so doing often present an expression or pose that is unnatural and displeasing. You are obligated to provide directions to the subjects regarding their pose. As the photographer, it is your responsibility to ensure

that coat sleeves are pulled down, wrinkles smoothed out, hat set at the proper angle, body erect, head tilted at the best angle, and a dozen other things which, if not corrected, detract from the picture. Whether the subject is a seaman or an admiral, the photographer must observe these discrepancies and correct them. Figure 6-1A and figure 6-1B present examples of pictures of people in their environment.



J01 Joe Lancaster
302.273

Figure 6-1B.—A member of the Army's 7th Infantry Division takes a break during the combined South Korean and U.S. exercise *Team Spirit 1990*.

One of the greatest contributing factors to poor pictures is the timid manner in which a novice photographer handles the subject. Never take a picture when something is wrong because you are afraid to speak and act in the presence of high-ranking personnel. The results will surely be disappointing and embarrassing; however, you should always be courteous and respectful in dealing with your subjects regardless of rank or rate.

GROUP PICTURES

Occasionally, assignments are received to take a picture of a group of people. There is added difficulty when working with a number of people at one time. Each person should be treated as an individual, and, at the same time, each person's relationship to the whole group must be considered. Attention must be paid to every member of the group. Every precaution should be taken



PH3 Borbely
302.274

Figure 6-2.—Boat crews aboard the USS *Theodore Roosevelt* pose with their motor launches.

to ensure that each person is shown clearly and that interest is not drawn to one individual by some awkward pose or expression.

There are two general types of group pictures: formal and informal.

The formal group picture is one in which several people, uniformly dressed for the occasion, are seated

or standing in as nearly the same pose as possible. Each member is placed in approximately the same relative position so that attention is not drawn to one person.

The informal group picture (fig. 6-2) is intended to depict an action or tell a story about the individuals concerned. Although the position and pose of each member of an informal group is carefully planned, the

results must appear casual and realistic. The members may be seated, kneeling, or standing in a variety of positions and do not have to be looking in the same direction.

Arrangement of personnel to obtain the best composition is one of the most important factors in group photography. Regardless of the number of persons in a group, they should be arranged to fill the picture in such a way so you get the largest possible image size of each person. One exception to this general rule is when the importance of the background is equal to or greater than the group itself. This often occurs with an informal group when the picture is actually intended to emphasize an object or piece of equipment, rather than the individuals. In this case, locate the camera for the best composition of the object; then arrange the people in the picture to enhance the story being told

A formal group of about five people can be composed to fill the picture area very nicely. When six to ten persons are being photographed in a group, it is advisable to arrange them in two rows. For larger formal groups, arrange the people in as many rows as necessary to fill the frame. Avoid stringing out one long, narrow line of people across the frame.

When a large group is formed into three or more rows, you must devise some method to prevent the rear rows from being blocked from view. Furthermore, in order to compose the picture properly and fill it from top to bottom, you must see that each row is higher than the preceding one. One method is to arrange the group on the steps of a building, bleachers, or a terrace, so each row is higher than the preceding one. On level ground the first row can be seated, the second standing, and the third standing on benches. Another method that can be used in combination with the first is to elevate the camera so it is pointing down at an angle on the group. This method is useful as an aid in composing and filling the picture area. A higher camera angle can be useful in eliminating an undesirable background. When raising the camera above eye level, you must avoid excessive distortion of the figures and vertical lines by too much elevation.

Particularly in formal group photography, the arrangement should be symmetrical. But avoid having an equal number of persons in each row. Keeping the number unequal permits each person in the second and succeeding rows to stand directly behind the space between the heads in the preceding row. This provides a much better view of each person. The number in each row should differ by one person.

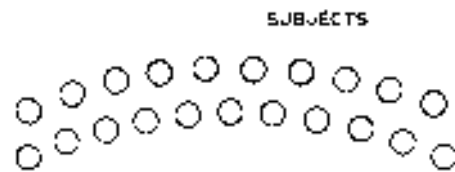


Figure 6-3.—Arrange long rows in a semicircle.

Customarily, in a formal group, the highest ranking person is located in the center of the first row and other members of the group are arranged alternately to the right and left by grade. When all members of the group are the same grade, arrange them according to height, with the tall ones either in the center or at the ends, or occupying the rear row.

When you are arranging a large group in which about twelve or more persons are in each row, it is advisable to form them in a slight semicircle instead of a straight line (fig. 6-3). This places each person approximately the same distance from the camera and keeps the images a uniform size. Instruct each person to turn slightly so he or she is facing directly toward the camera.

The shorter the focal length of the lens used, the more pronounced is the distortion effect of apparent bending of a straight row. A proportionally greater distance exists between the center and the ends of a row with a camera having a short-focal-length lens than with one having a long-focal-length lens.

When the formal group is arranged and ready to be photographed, ensure each member is in the same relative position, hats are at the same angle, and uniforms are correct and neat. See that the hands and



Figure 6-4.—Formal group photo.

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feet of all members are in the same position. When the front row is seated, the feet may be crossed but all in the same direction. Each person should be looking at the camera, no broad smiles, just pleasant expressions. Nothing should be so different about one person that it draws an excessive amount of attention. Remember, to get maximum depth of field, you should focus the camera one third of the way into the group (if there are nine rows, focus the camera on the third row).

As with everything else there is a time and place for formal group shots. What would happen, though, if you “stylized” the shot just a bit? Instead of always shooting the group setup that clearly identifies each member in the typical “lineup” by grade or height, why not think of your group picture in terms of your other photographs? Put in some foreground or a background. Use an interesting bit of lighting or a somewhat different setting. After all, do your subjects really have to be shoulder-to-shoulder? Do not forget the frame approach; it can work for group shots too. The group can be placed in a situation that has some relation to it. Foreground objects can be used to create a frame for a group of people in a photograph. Even one of the group members—the squadron commanding officer—can be your foreground; the rest of the officers can be scattered throughout the background.

The success of a formal group photograph (fig. 6-4) is dependent on your ability, as a photographer, to direct the members of the group so you can obtain the

composition desired. Never hesitate because of grade to request members of the group to change their expression or position or to correct a discrepancy in their uniform. Be diplomatic about it, of course, but do not let the matter go unattended. It is embarrassing and a waste of valuable time to call a group together again to retake a picture regardless of the reason for failure.

The most important lesson a novice photographer can learn about photographing groups is how to remain in charge. Unless you are very careful the group will take control, and getting all the members of the group to look at the camera at the same time becomes almost impossible. Unless you are the dominating type, maintaining control is not easy. Remember, you cannot make good group pictures unless you are in control of the situation. To be in control, you should keep talking to members of the group and monitor their behavior. Have your equipment ready so you do not waste time or lose the group's attention while you load film or reposition the camera and lights. When you talk to people, they will naturally look at you, and therefore at the camera. Your directions and “patter” also prevent them from getting a word in edgewise among themselves. You must be firm when it comes to arranging the group. Do not be afraid of moving people about and telling them where to stand. Remember, you are making the pictures; you can see best what the final result will look like.



PHC Ronald J. Oliver
302.276

Figure 6-5.—Damage control trainee struggles to repair a ruptured pipe.

PEOPLE IN ACTION

When you photograph people in action, such as in sports and at work, the name of the game is anticipation, staying alert, and expecting the unexpected. Covering action events becomes an exercise in “guesstimating” where the action will take place and firing the shutter at the right moment.

A good action photographer relies on his knowledge of the event taking place; for example, if you will be photographing a General Quarters (GQ) drill and the principal players are going to be the Hull Maintenance Technicians, you could take a crash course in the job they will be performing during GQ. You might even observe them going through the drill a day or two before it is time to photograph them. Like a sports photographer-you must know the rules of the game. Even if you cannot learn the game, a photographer that understands the principles of shooting people in action can do a good job by following a few simple rules:

- Anticipate the action. Watch for the unexpected moment.
- Know the mechanical functions of your camera equipment. Practice aiming, focusing, and shooting until they become reflex actions. This leaves your mind free to concentrate on the event.
- Learn something about the action you plan to photograph.

The best pictures of people usually have action, implied or apparent. The action should be appropriate to the subject of the picture. The cook, for example, should not be shown in the boiler room (unless for a special reason or effect). Even a posed picture can have plenty of action and interest and not seem at all posed. Artificial, stiff effects kill the picture. Avoid static, dull pictures of groups staring directly into the camera. Plan and shoot for action, such as applause shots or a speaker making gestures, or shots of an audience's facial reactions. Break up the overall scene into small groups of action, such as shots of important persons talking, the guest of honor shaking hands with others, and so forth. Even an attitude or arrangement of hands, feet, head, and shoulders often creates action. There is action in everyday living, in working, eating, drinking, smiling, arguing, driving, flying, sailing, and swimming. It is not so easy to capture action in still photographs, but by understanding the importance of action in a picture and the abundance of action available everywhere, you will soon become proficient at recognizing and picturing it. The blur technique has become popular for advertising

and illustration use. Panning the camera with the action of a moving subject keeps the subject fairly sharp while blurring the background in a horizontal sweep, and this gives the feeling of action. A slow shutter speed is needed. Try the technique and see the interesting results.

A photo should have emotional mood and impact that can be accomplished by actual movement of a physical nature. The head may be raised in victory or joy or lowered in despair and sadness. The body sagging or the body squared away indicates different moods. Arms on the hips can indicate swagger, arrogance, or confidence. Hands in pockets indicate relaxation, or at the sides, may show formality. Knowing the elements of action, how to recognize them, and what moods they convey permits you to click the shutter at the right instant when you recognize outstanding action happening. The shooting angle, lighting, and composition all contribute to a feeling of action.

Action should always be photographed at its peak (fig. 6-5). This is a matter between the photographer and the photographer's own well-developed sense of motion. A highly capable photographer knows with certainty, at the instant he or she shoots, whether the picture will be a good one or not. This does not come from occasional picture taking but from steady, continual practice.

COMMAND FUNCTIONS

The majority of the job orders your imaging facility receives will probably be in support of providing photographic documentation for command functions. Photographic assignments that fall into this category are as follows: reenlistments, retirements, change of commands, awards presentations, and VIP (Very Important Person) visits. Some of the larger imaging facilities provide a photo mailer service whereby amateur photographers take snapshots of their command functions and forward the film to the imaging facility for processing. For those Photographer's Mates that are fortunate enough to cover these photographic assignments, high quality and professional service and products are imperative for the continued success of customer service and satisfaction.

To provide the best photographs possible, you must apply all of the principles and techniques discussed previously in this TRAMAN. Proper planning, composition, and lighting must be applied regardless of how routine you feel the job may be. Some general guidelines are as follows:

- Always use bounce flash whenever possible.



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Figure 6-6.—Award presented by the former Secretary of Defense Frank C. Carlucci

- The reenlistee, retiree, or person being advanced, promoted, or receiving an award is always the subject (fig. 6-6). Regardless of who is presenting the award or conducting the ceremony (whether it be the division officer, commanding officer, or the Secretary of Defense), the recipient is always the center of interest.

- ◆ Avoid profile photographs of the subject. If necessary, shoot over the shoulder of the person presenting the award or conducting the ceremony.

- Prevent objects from giving the appearance of protruding from a person's head or body, such as pipes, flags, or doorframes. Always view the entire subject through the viewfinder and adjust your camera angle or viewpoint as necessary to prevent this compositional flaw.

- If you miss a shot or you know the photograph does not meet your standards, such as eyes closed, face hidden, or flash does not fire, always re-shoot the photograph. When it is not possible to re-shoot immediately, setup and re-shoot after the ceremony.

When in doubt, re-shoot. Film is relatively cheap, but your reputation and the reputation of the photo lab is not.

- Never fake a shot. If you run out of film or have camera problems, make arrangements to take photographs at a later time. Better planning and improved communication will normally prevent this from happening.

CAPTION WRITING

Photographs, despite their unique story-telling ability, are seldom effective enough to stand alone. No matter how exciting the picture may be, it fails unless the viewer understands the five Ws—Who, What, When, Where and Why of the photograph. The area of providing information that the photograph cannot give is in the caption—the text that accompanies the photograph. It is your responsibility, as the photographer, to gather the necessary information and write complete, concise, and factual captions.

The caption supplements the photograph by answering the five Ws. It provides clarification of important details that are not readily apparent in the photograph. To make a caption work, you must use three basic elements:

- An explanation of the subject
- Identification of persons or things in the picture
- Additional details of background information

In caption writing, the first sentence is the most important. It must describe the action without overemphasizing the obvious. Always use the active voice of the verb and write in the present tense. Another important consideration in caption writing is background information. This consists of additional facts or explanations needed to clarify the photo. The amount of background information included depends on where the picture will be located and how it will be used.

Whether the photo will be printed in a military or a civilian publication, used in a report, or used as a display picture is of primary importance. The caption explaining a picture of a sailor wearing an oxygen breathing apparatus to a civilian is more difficult than explaining it to another sailor.

The second consideration, how the photograph is to be used, refers to whether it will be used alone, as a single picture, or used in conjunction with something else, such as a news story or report. When the picture is to accompany a news story or a report, the caption should not repeat details used in the text. On the other hand, when the photograph is to be used as a single picture, it must tell the whole story, and the amount of background information must be enough to provide the reader with all the necessary details. In other words, the caption and picture combination must tell the complete story.

The answers to the five Ws should be given in vigorous, forceful language without sacrificing simplicity and brevity.

WHO—Give as much information as possible about the personnel shown in the photograph, beginning with paygrade, rate, or rank and full name.

WHAT—Used to identify ships, aircraft, awards, and other things shown in the photograph.

WHERE—Identifies the location of the event.

WHEN—The actual time or date of the event.

WHY—The reason for a particular operation or action taking place.

The novice caption writer is often confronted with the problem of how long to make the caption. Although there is no prescribed length for captions, the general rule is one paragraph, preferably in 50 words or less. Caption content is your last opportunity to tell what makes a photograph significant. The shorter you make the caption and still tell a complete story, the better.

There is no best way to write a caption. There are, however, rules that make caption writing easier. One proven method is to make use of the three basic elements: **explain the action, identify persons or things in the photograph, and give necessary background information.**

EXPLAIN THE ACTION

The first of the three elements, explain the action, is the most important part of the caption. The very first sentence must link the caption to the photograph by describing the action. One of the peculiarities of the first sentence in caption writing is its verb form. Since a photograph has “frozen” a moment in time, the verb should be written in present tense. This provides a sense of immediacy, as though the reader is actually witnessing the event. For example:

"Petty Officer Second Class Paul T. Boat swims through swirling flood waters of the St. Johns River to rescue 6-year-old Sammy Cameron"

This has more dramatic impact than a caption which reads:

"Petty Officer Second Class Jane B. Doe swam through"

There is, however, one problem that arises from the use of present tense in the first sentence. What to do with the “when” or time element? If the when or time element is included in the first sentence, the result reads something like this:

"Pete Rose hit a line drive to center field yesterday"

A sentence, such as this, would be somewhat jarring to the reader and should be avoided. To alleviate the problem, you should leave out the when or time element of the first sentence when writing captions, thus avoiding an awkward shift in tense.

IDENTIFICATION

The second element of caption writing, identification, frequently poses the question of who or what should be identified in the photograph. There is no magic formula to cover every situation, but the general guideline is to identify everyone or everything that is identifiable, and pertinent to the action. A pertinent individual or object is one that is involved in the central action of the photograph. In other words, anyone or anything in the photograph that attracts attention should be identified. Identification should come as early as possible in the caption. Many times you can identify people or things at the same time you describe the action.

"BM3 Jack R. Frost sounds taps to climax
Memorial Day ceremonies"

Here the action and the man are identified together. The only exception to placing names high in the caption is in the case of group identification. The recommended way to handle group photographs and still maintain reader interest is to use an impersonal identification in the first sentence; that is, "A group of sailors . . .," then list the names at the end of the caption. This method achieves complete identification without cluttering the all-important first sentence.

Identification in caption writing can be handled in any one of several ways. The idea is to handle it in the most natural and concise manner consistent with clarity. To ensure consistency, the caption writer generally uses four methods of identification:

- Action
- Obvious contrast
- Elimination
- From the left

Action is, of course, the best method. When a little league baseball player is sliding into second base, it should be obvious from the action which boy is the base runner; therefore, it is not necessary to say left or right as a means of identifying the players.

Obvious contrast is another simple way of identifying people in a photograph. If the commanding officer and an airman recruit are photographed, it is not necessary to identify the commanding officer as being left or right.

Identification by **elimination** is slightly more complex but nevertheless very effective. Suppose there are four people shown in a photograph. The

commanding officer of the photo school is presenting a citation to a third class petty officer. These two are identified by the action. A third person, the petty officer's wife, standing alongside, is identified by obvious contrast. The fourth person, the award recipient's division officer, is then identified by elimination.

The fourth and least desirable method of identification is **from the left**. This method of identification should be used only as a last resort or when there is a chance of confusion from using any of the other methods, such as in identifying groups of people. When you use this method of identification, it is not necessary to say, "From left to right." To do so only wastes space. Logic tells us that if we start from the left there is no place to go except to the right. The task is therefore simplified by saying, "From the left."

BACKGROUND INFORMATION

Background information is our third element of caption writing. It consists of additional facts or explanations needed to clarify the photograph. It is often impossible for the photograph and the five Ws alone to provide all the details necessary for a complete understanding of the photograph. Therefore, it becomes necessary to provide the viewer with additional information for the purpose of clarifying the photograph.

How much background information is needed to clarify a photograph depends on two factors: where the photograph is to be used and how it is to be used.

CREDIT LINE

The last part of caption writing is the **credit line**. The usual method is to credit both the photographer and the service. While there is not a set standard for giving credits, the following format can be used:

Official U. S. Navy Photo by:
PH2 Jack R. Frost, USN

Or the credit line can follow directly after the last word of the caption, as shown in the following example:

Line handlers cast off the stem line as the amphibious force flagship, USS *Eldorado* (AGC-11) gets under way for a Western Pacific deployment. (Official U. S. Navy Photo by: PH2 Jack R. Frost, USN.)

A typical caption should also identify the unit that produced the photography and, if appropriate, contain a file number. As an example, a typical caption may look something like the following:

UNIT ID	PACIFIC FLEET IMAGING COMMAND SAN DIEGO, CA
DIVIN, MEDIA CODE, FY, SEQUENCE NUMBER; DATE OF PHOTOGRAPHY	N0108-SCN-93-00374 21 MAR 1993
CAPTION TEXT	Six-year-old Terry Thomas, a victim of. . . Brenda has been doing . . .
CREDIT LINE	Official U.S. Navy Photograph by: PH3 Jon T. Boat USN

Your skill as a caption writer, like any endeavor, will improve with practice. When you write a caption, have the photograph in front of you. This may help you recall just what was taking place. Avoid phrases, such as-“Shown above,” “This is a picture of. . .” or “Posing for the camera . . .” These phrases insult the reader's intelligence.

When writing captions, you should always be alert to point out interesting or important things in the photograph that might escape the casual reader. Remember to spell out the meaning of all unfamiliar abbreviations. PHAA may mean Photographer's Mate Airman Apprentice to you, but it may be meaningless to the reader.

Finally, you must remember that the caption should supplement the photograph, not duplicate with words what is readily evident in the photograph.

Captions should always be typed, preferably double spaced, on a separate sheet of paper, such as “crack-and-peel” stickers or plain, white paper, and affixed to the back of the photograph. When using plain, white paper to prepare and attach a caption to a photo, first type the caption on the bottom of a sheet of paper. Cut off most of the unused portion and fold just above the typing. Attach the caption to the back of the photo with tape so the typed caption folds over the bottom and lies against the face of the photo. When unfolded, the caption is properly positioned at the bottom of the photo.

INVESTIGATION PHOTOGRAPHY

Photography is a valuable tool used by the master-at-arms, the Naval Investigative Service, and

other investigators to make visual records of crime scenes, accidents, or other incidents. Evidence (investigative or forensic) photography is used to show particular items of evidence and their relationship to the scene and to produce closeup pictures of significant parts of the scene.

As a Photographer's Mate, you usually will be working under the direction of an investigator when producing forensic pictures. However, you should take the initiative to learn all you can about the case you are working on. With sufficient information, you can use your judgment to assess the photography requirements, angles of view, supplementary lighting, close-ups, and other factors, such as camera, lens, and film choice. Investigators, especially in crime cases, are often reluctant to give the photographer any information. They would rather you not ask questions and just follow their specific directions of what to photograph. This is often the case because they do not want information leaks that could ruin their case. You must gain their confidence and not discuss the case with anyone outside of the investigative team. On many occasions, investigative leads have been developed solely by studying good forensic pictures provided by a professional photographer.

When photographing any scene as part of an investigation, it is important to make overall pictures of the scene that can be related to the close-ups which you must also take. These overall pictures are important and cannot be sacrificed for any reason. Use wide-angle lenses to obtain these views when you cannot move to a vantage point where a normal lens can be used. When making overall views of the scene, avoid having extraneous elements, such as people and automobiles, or other confusing elements included. Extraneous elements only serve to mislead people viewing the photographs and may obscure important details. Investigators will normally cooperate by clearing the scene for the overall views.

Never take it upon yourself to recreate the scene if it has changed before your arrival. Repositioning elements within the scene or having someone assume the position of a body that has been removed will not be of any help. There is no way of assuring accurate repositioning, and the photographs become suspect as being “contrived” and made up. You should always photograph the scene as you find it. If the investigator wants to recreate the scene, that is his business. You should not offer to help.

Closeup views of scene elements should be made of any evidence, weapons, aircraft damage, body wounds, and so on, before the evidence is moved. If, for example, a closeup shot is needed of a gun that was thrown under

a car, it should first be photographed before the car is moved. This overall or medium shot should show both the car in comparison to other scene elements and its relationship to the gun. Only then should the car be moved to get the closeup shot of the gun.

Today, the trend in Navy investigations is to use color film because color photographs represent the subject more realistically than black-and-white film. People see their surroundings in color, and based on this premise, color photography has become completely acceptable for courtroom use. Color pictures convey a more accurate representation of the facts to the court or persons reviewing reports.

FIRE AND ARSON PHOTOGRAPHY

Fire fighters and damage control personnel realize the value of good photographic records of a fire and its damage in helping determine both the cause of the fire and the effectiveness of the methods used to fight the fire.

One of the most important functions of any group of fire fighters is training. The most effective training method is, of course, actually practicing fire fighting. However, aboard ship and because of the cost ashore, this cannot always be done. The next best method of training is with visual aids. By studying still pictures and movies of a fire, firemen and members of the damage control party can receive instructions and observe proper procedures in the performance of their duties. Photography serves as a means of refreshing the memories of fire fighters and witnesses during the investigation of a fire.

Fires aboard ship and ashore should be photographed from the time the fire party arrives to the time the fire is out. Pictures of the fire should include overall views showing the positions of trucks, ladders, hoses, other types of equipment, personnel fighting the fire, and people watching the fire. Pictures of the progress of the fire must also be made. Fire progress pictures should show the structure, smoke, and flames.

Arson is becoming a big business in the civilian world. As sailors, we do not see much arson in the Navy, but there have been cases and will continue to be cases of arson in the Navy. We cannot afford to have an arsonist in our midst, particularly aboard ship or in the barracks.

Without evidence, arrest and prosecution of an arsonist is extremely difficult. Photography is an effective tool in recording and preserving the evidence of set fires. Much of the actual evidence may be destroyed during fire fighting, or if it survives the fire, it may be impossible to preserve.

Every effort should be made to photograph the scene of a fire, whether or not arson is suspected, before it is disturbed by other operations. You must work fast, but never do a careless job. Your pictures may be used to prove the intent to commit arson.

The pictures you make of a fire should do the following:

- Show the area or areas in which the fire started or was set.
- Help identify spectators. An arsonist often remains to watch the fire.
- Provide information about the speed of combustion and direction of spreading.
- Show the progressive stages of burning and fire fighting from various angles. If possible, keep a record of the time each picture was made.

Help investigators determine the type of material burning. This is where the use of color film is recommended. The steam, color, and quantity of smoke and the color and size of flames are indications of what type of material is burning. The color of the smoke often indicates whether an accelerant, such as gas, was used to speed the burning.

Once the fire is out, pictures (fig. 6-7) are made of the rubble. Give particular attention to the most burned or charred areas. The structure should be photographed from all sides to show the damaged areas. Other things to look for are incendiary devices and combustible materials, such as matchbooks, paper, liquids (such as gas and paint thinner), and fuses. Although they may have burned completely, there could be a visible trail, defective wiring, and electrical or gas appliances that may have been the cause of the fire.

The exposure required to photograph the interior of a building after a fire may be considerably more than indicated by normal exposure calculation methods. So much light is absorbed by blackened and charred areas that it may be necessary for you to open up several stops over your indicated exposure, even for well-lighted close-ups. When using flash to light burned areas, hold the flash away from the camera to permit some improvement in the rendering of texture. This will bring out the alligator or checked pattern of burned wood, blistered paint, and so forth.

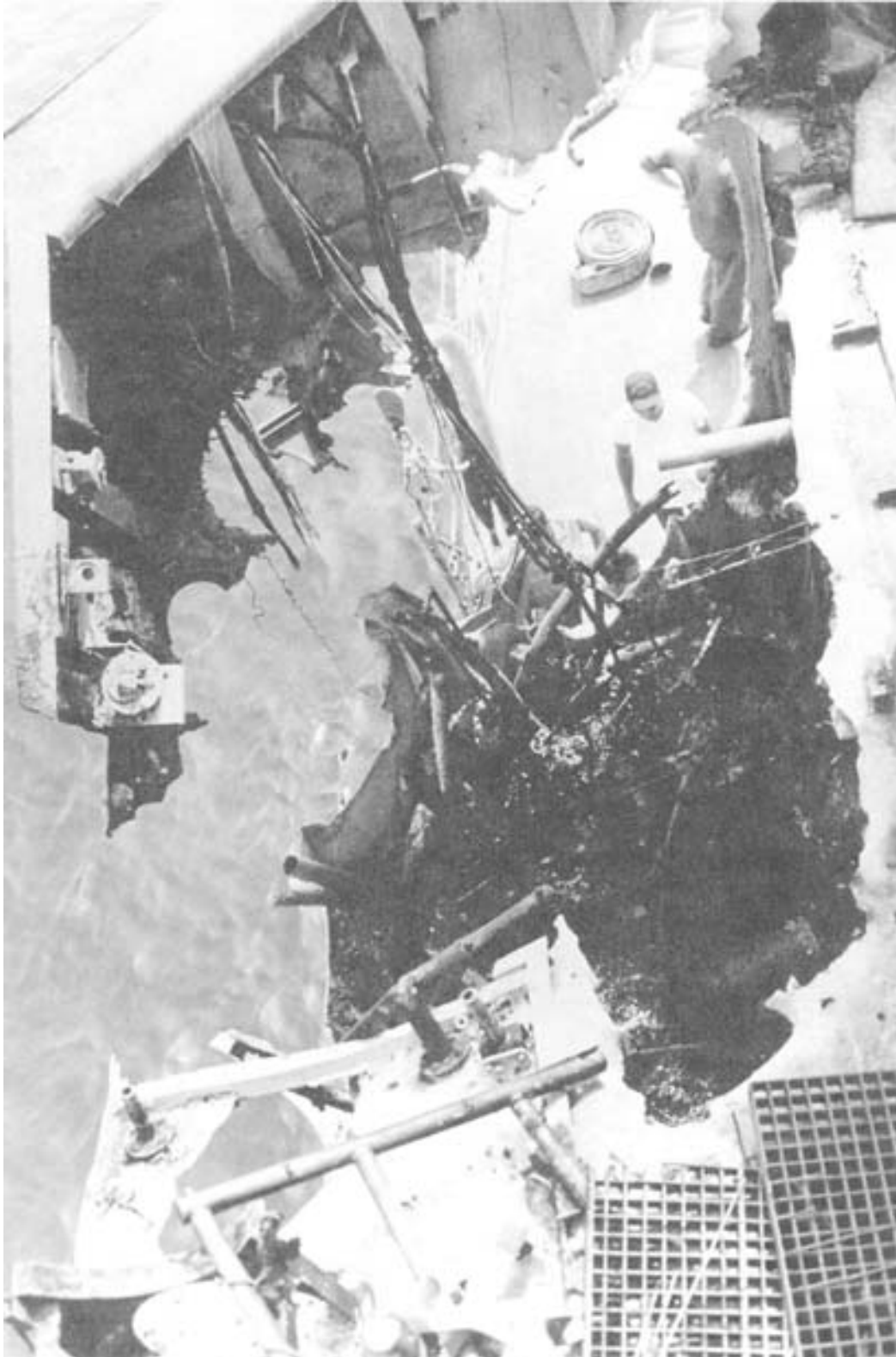


Figure 6-7.—A close-up damage to the USS *Stark* after it was struck by Iraqi-launched Exocet missile.

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LT Gary A. Phillips
302.279

Figure 6-8.—Crew members aboard the USS *Forrestal* fight fire on the flight deck.

AIRCRAFT ACCIDENT INVESTIGATION PHOTOGRAPHY

Every aircraft accident (fig. 6-8) affects readiness to some degree, and with the cost of equipment rising steadily, the loss of one of our first-line aircraft represents a serious loss to the Navy and to the national economy.

Aircraft accident investigation is one of the fundamental elements in a program for the improvement of aviation safety. Photography plays a major role in an aircraft accident investigation. The evidence obtained through photographs will help determine steps to prevent similar occurrences.

To make the most useful photographs, you must clearly understand the purpose of photography in an aircraft accident investigation. It is NOT to assess blame, nor is it solely to establish a single or primary cause factor. Few accidents result from a single cause. In most of the accidents, a sequence of events occurs. The elimination of any one of these events may have prevented the accident. Therefore, to prevent future occurrences, you must consider all possible cause factors and photograph them, if possible. An incomplete

photographic record of the investigation may result in erroneous conclusions and nullify the only possible benefit that could have been derived from a costly accident. The photography surrounding an aircraft accident is a methodical accumulation of small bits and pieces of information that eventually form a pattern. The wreckage itself may contain valuable evidence that, if correctly photographed, may provide these certain cause factors.

Successful aircraft accident photographers have certain essential characteristics in common. You must apply the following essentials of good aircraft accident photography to your work:

1. Promptness—Get to the scene of the accident immediately—before the evidence is disturbed.
2. Thoroughness—Photograph all evidence in minute detail. Operate on the assumption that there is no limit to the amount of photography justified to prevent the recurrence of one aircraft accident or the loss of one life.
3. Organization—Conduct a planned photographic survey.



Jim Bryant
302.280

Figure 6-9.—News reporters photograph damage incurred when a T-2C Buckeye crashed into the superstructure of the USS *Lexington*.

4. Accuracy—Pictures that show half-truths are unacceptable in aircraft accident photography. Do not make pictures that hide detail or distort the scene. Remember, all photographic evidence must be accurate.

It is nearly always necessary to crawl around or under the aircraft wreckage to get pictures. You should arrive at the scene appropriately clothed in a complete, comfortable working uniform, which you do not mind soiling.

Procedures at the Scene of the Accident

Current OPNAV instructions specify that the surviving crew members (if physically able to do so) or the first military personnel arriving at the scene of an aircraft accident must take charge until relieved by proper authority. At the scene of the accident, you will be working for the officer in charge (OIC). You report to and receive your orders from the OIC. In many cases, it may be possible for you to accompany the crash rescue party to the accident. The sooner an experienced and qualified photographer can get to the scene of an accident, the better the possibilities of acquiring more valuable photographic evidence. You should commence taking pictures immediately upon arrival. Pictures made before extensive fire damage can reveal information that might otherwise be lost.

Safety of personnel involved is of primary concern in every aircraft accident. Rescue operations and removal of occupants from the aircraft should be among your first photographs. When medical treatment is being given to survivors of the accident, photograph it not only for documenting the treatment but for the purpose of isolating factual information on human failure. Casualties should also be photographed in the positions they occupy when you arrive on the scene. Photographs of the dead should be made to show the location of the wreckage and the position of each body in relation to it.

You should be advised of any classified material involved, and it should be either covered or removed before photographs are made unless it is important to the accident investigation. This is a situation where close liaison with the OIC is absolutely necessary.

News reporters may gather at the scene and because you, as a photographer, have something in common with them, they will naturally seek you out. Do not attempt to tell a reporter what to write. Do not make a statement, express an opinion, or provide information about the accident (fig. 6-9).

Photographic Record

In almost every accident, a certain minimum number of photographs is usually required. These apply to automobile, motorcycle, personal injury, or any type of accident.



PH2 John Gay
302.281

Figure 6-10.—USS *White Plains* is blown hard aground at Polaris Point, Apra Harbor, Guam.

A complete photographic record should include photographs of the general terrain or site of the accident, overall views of undisturbed wreckage, reconstructed components or systems, and closeup views of important or significant structural or other material failures. The terrain pictures should show any surface irregularities, presence of damage to buildings, trees, or other objects, point of first contact, impact marks, and so forth. The photographs should be made as soon after you arrive at the scene as possible, since subsequent investigation work or other conditions may alter or destroy the evidence. After the terrain pictures have been obtained, you should concentrate on photographing the undisturbed wreckage. The emphasis here should be on showing the attitude of the aircraft or vehicle at the point of impact, the general extent of damage, and the presence or absence of all major components, such as the wings, stabilizers, elevators, rudder, and ailerons.

When fire indications are found in various areas of the wreckage, show these indications together with any corresponding indications of tire in the surrounding area. These later photographs can often be used to substantiate findings of ground fire versus in-flight fire. Other points that appear to be significant from a preliminary examination should be recorded before the detailed wreckage examination is begun. Very often the investigator decides to reconstruct or rearrange particular parts of the wreckage to determine failure patterns. A photographic record should be made of such reconstruction work to assist in the subsequent evaluation. Finally, closeup views of important structural failures should be included in the photographic record.

In general, the photographic record should be complete enough to permit a person who is reviewing and evaluating the accident report to appreciate the

significance of the investigator's finding. While the investigator's report must contain a detailed write-up of the damage, it is still true that one picture can often take the place of many words (fig. 6-10). The investigator should use photographs as another tool in complete and accurate reporting. Each photograph included in the report should purport to show a separate point or detail relative to the accident.

When evidence is to be presented, get a good picture of it. You are not a mind reader and cannot be expected to get the pictures that are contained only in the investigator's mind. Normally, you must ask the investigator exactly what is to be photographed.

Pertinent photographs of the following details are always required:

- General view of the scene along the wreckage pattern to the point of first contact.
- ✦ Aerial view of the accident scene (aircraft).
- Damage to objects struck
- ✦ BUNO or license plate.
- ✦ All major parts of the wreckage.
- ✦ Detailed view of the cockpit, instrument panels, switch settings, and control handles (aircraft).
- ✦ Engines and propellers.
- Wheels and landing gear assemblies (aircraft).
- ✦ All parts involved in, or suspected of structural failure, or of having contributed directly to the accident. These photographs should have sufficient detail to show the grain of the metal at the failure point or other detailed information, such as the direction of shear of the rivets.
- ✦ Any failed part that has been established as the cause of the accident or is believed to be significant to the cause of the accident should be photographed in detail.

When photographing small, important pieces of evidence, the parts should not only be photographed in the field but they should be removed from the scene and photographed in the studio under controlled conditions. This ensures that the photographs of the items in question are clear and well defined. It is a good practice to photograph the failed part and an undamaged like item in the same exposure so the failure is readily apparent.

To avoid confusion, you should assign all aircraft accident photographs exhibit numbers and carry descriptive captions to point out the details of evidence

to which they contribute. A picture without an explanation is confusing and worthless.

Each aircraft accident photograph should be readily identifiable, and to ensure this necessary requirement, you must identify all photographs with the following information:

- ✦ Date of accident
- Location of accident
- Type of accident
- ✦ Type of aircraft
- ✦ BUNO of aircraft
- Part and part number (where applicable)
- ✦ Squadron
- ✦ Aircraft accident report number

Special handling note according to OPNAVINST 5290.1

At a minimum, the following items should be included in your camera bag for an accident or arson scene:

1. Camera and normal lens
2. Wide angle and telephoto lenses
3. Flash unit and extra batteries
4. Large amount of color and black-and-white film
5. Extra sync cord for the flash
6. Flashlight
7. Note pad and pen
8. Macro lens or closeup filters
9. Surgical gloves
10. Ruler
11. Tape measure

PRODUCT PHOTOGRAPHY

Product, or illustrative, photography is used to show and explain an object more completely and concisely than is possible with words alone. By using the photographic medium, it is possible to illustrate a variety of items to show size, shape, location, and condition. In the Navy, product, or illustrative, photography is used to show new equipment—from ships to pencil sharpeners and from buildings under construction to damaged

aircraft. It is used extensively to show damaged, defective, and unsatisfactory equipment-from aircraft engines to zippers.

The discussion on illustrative photography in this chapter is limited to those aspects that apply to studio work. In this sense, illustrative photography should be considered as product photography. The techniques given here are not necessarily “locked up” in the studio. They can be taken outside the confines of the studio and put to good use in the field.

Product photography, then, is the making of photographs for the purpose of illustrating or explaining something about a product, either in whole or in part.

EQUIPMENT

The three types of format cameras and the lighting units used to accomplish product photography are discussed in this section.

Camera

The variety of subjects encountered in product photography requires a camera with a long bellows extension, vertical and horizontal swing adjustments, tilt, rising front, and lateral shift and both long- and short-focal-length lenses. All of these features exist on a view camera.

The view camera is the primary tool of professional product photographers. An 8x10 view camera is usually the largest size in use today. Photographers that want to produce the highest quality photography use it. Its large film format and adjustments help to produce clear, sharp, nearly distortion-free photographs that are in complete focus.

Large film-format cameras provide high-quality images because the negatives or transparencies do not have to be enlarged as much as smaller negatives. A large film format in and of itself does not necessarily ensure high-quality product photography. Long tonal range, from highlights to shadow detail, is required. Lighting ratios must be calculated and adjusted with care, and exposure calculations must be precise. Lenses of the highest quality, which are spotlessly clean, enhance the photographic quality of any size format.

VIEW CAMERAS.—Most Navy photo labs do not have an 8x10 view camera; but most of them do have a 4x5 view camera, and you should use it for most product photography. Whatever view camera you use, it **must** be supported on a steady tripod.

MEDIUM-FORMAT CAMERAS.—If for some reason, such as a need for speed or limited working space (such as inside the cockpit of an aircraft), a view camera cannot be used for product photography, then a medium-format camera should be your next choice.

Some photographers choose other than a large format camera simply because they are willing to sacrifice quality for convenience, rather than use a view camera. They probably have the attitude of “it's good enough for government work.” Do not fall into this trap. Instead, always strive to produce photography of the highest professional quality. As we have said before, you will be known by the quality of your photography more than anything else. Maintain the attitude that “nothing is too good for the Navy.”

Medium-format cameras can be hand-held, focused rapidly, and many images can be produced in a relatively short time. The film size, however, is not as conducive to high-quality photography as the 8x10 or 4x5 formats. The main disadvantage of a medium-format camera for product photography is its lack of adjustments to correct distortion.

35MM CAMERAS.—Finally, we have the small format, 35mm camera. Because of its small film size, many photographers do not even consider it for use in product photography, particularly in the studio. It does, however, have its place in product photography, particularly when a large number of exposures must be made in rapid succession or when working space is very limited; for example, inside the intake ducts of a jet aircraft.

Which of the three format cameras—large, medium, or small format—should you use for product photography? There is no **best** camera to use; there is, however, only one **best** camera to use for each assignment, and you must be able to choose the one that best meets the needs of the photographic assignment at hand.

Lights

The lighting equipment most commonly used for product photography is incandescent lamps and electronic flash or strobes. All lighting units have one or several of the following means of controlling light: reflectors, lenses, barn doors, diffusers, snoots, umbrellas, or reflector boards.

SPOTLIGHTS.—Spotlights are one of the most important lights in small product photography. They produce light with a relatively high intensity and a well-defined, sharp quality. The rays of light produced by the Fresnel lens of the spotlight sharply separates the highlights from the shadow areas. A spotlight can create a visual sense of subject shape and bulk. When used in a skimming or crosslighting fashion, it renders sharp, crisp texture. Because the light rays are collimated, or parallel, with little flare or spillover, a spotlight produces high contrast. One great asset of spotlights in product photography is the controllability of the lights. The light can be controlled to highlight or isolate an area of the subject. Unwanted spillover into other areas can easily be avoided. Through proper use of accessories, such as snoots and barn doors, the control can be greatly extended. A disadvantage of spotlights is the harsh quality of highlights produced on some subjects. Bright spots on the subject may be pinpointed and hard to avoid. Nonetheless, a spotlight is a most effective main light for product photography.

FLOODLIGHTS.—In product photography, floodlights are used to cover a large area with relatively even illumination. The quality of light from a floodlight is very much dependent on the reflector surface. Polished, metallic reflectors produce a specular, sparkling quality, while matte-surface reflectors produce a softer quality of illumination. The quality of illumination from a floodlight is also dependent on its distance from the subject. At a given distance, the spread pattern for a given light unit is almost even. Some units may produce hot spots when used too close or too far from the subject. The larger the reflector and the closer it is to the subject, the more diffused the light becomes.

BOUNCE LIGHT AND UMBRELLAS.—The use of bounce light for product photography produces a pleasant quality. The light, because it is coming from one general direction, not an obvious source, surrounds the subject with soft illumination, gently enhancing curves and shapes while producing soft but distinct shadows. Bounce light can be used for either overall illumination or as fill illumination.

Umbrellas, being large and somewhat parabolic in shape, are more efficient than plane or board reflectors.

FUNDAMENTAL PRODUCT LIGHTING

Given a product assignment, you must determine ways to photograph or present the subject best. Aside from product arrangement and picture composition,

which must lead to an understanding of the purpose of the picture, you must first deal with the lighting. By the correct use of light, you can create a natural lighting, which is attractive, and simulates outdoor light. In product photography, you should always strive to produce lighting that appears natural, as though the product was illuminated by natural sunlight. After all, it is natural daylight by which all light is judged. Illumination from the main light should come from above and somewhat behind the subject, usually from about a 40- to 60-degree angle. In many commercial texts the main light is also referred to as the key light; these terms are used interchangeably by professional photographers. There should be one definite light source and only one set of dominant shadows, and the shadows must be illuminated sufficiently so the shadow detail is maintained in the film image. In a naturally lighted outdoor scene, this shadow detail is preserved by general skylight illumination. In the studio, this shadow detail is preserved or created by the correct use of soft, diffused, fill lights or reflectors.

In the studio, you can create the lighting effect of an overcast sky with a light tent or by using indirect lighting. This type of lighting is especially useful when you are photographing shiny products, such as bare metal and glass.

Backlighting is one of the essential tools in product lighting. Establishing the main light behind the subject often helps present three-dimensional form better than frontlighting. Aside from the subject being rimmed with light, which separates it from the background, the foreground shadow duplicates the shape of the object, making it easier to identify.

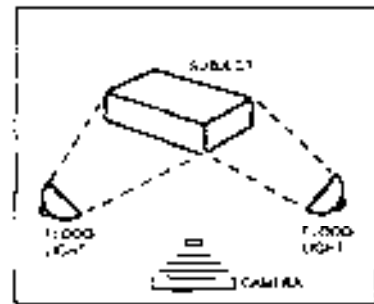
LIGHTING BASIC SHAPES

Most small product items fall under two basic or general shapes: rectangular and spherical. The illustrations in the following paragraphs show ways that basic lighting can be used to present shape. Although a perfect rectangle and a perfect circle are used in the illustrations, they are not intended to limit your lighting setups. You must, of course, make lighting adjustments, depending on how rectangular or spherical the subject is and the way you want to present it.

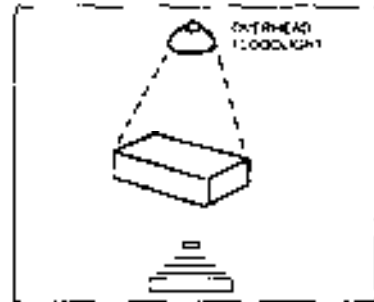
Lighting Rectangular Shapes

Rectangular- or box-shaped products can be lighted with just three lights—a spotlight from the rear and two floodlights, one on each side of the camera.

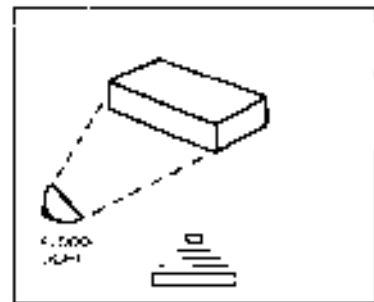
Two floodlights, one on each side of the camera., at camera level “flatten” the subject.



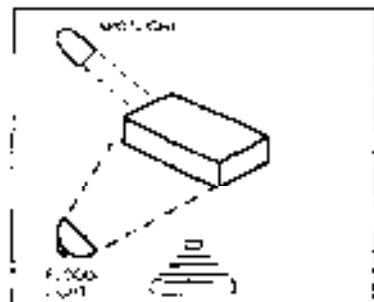
Diffused light from above does not help. There is no contrast between the two front planes.



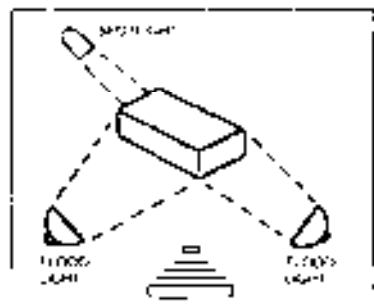
Instead, start the lighting slowly, one light at a time. Here the left-front floodlight starts the lighting.



The spotlight from the rear is established.



Now add the third and final light. This is the right-front floodlight that should provide only about half the intensity produced by the other floodlight. Notice the background shadow and the way it helps to separate the subject from the background; also, notice each plane of the subject has its own tonal quality, giving it shape and form. The foreground shadow, besides helping to visualize shape, tends to hold the block to the ground.



Lighting Spherical Shapes

Spherical- or round-shaped products can be just as simply lighted, but this time the basic setup requires five lights.

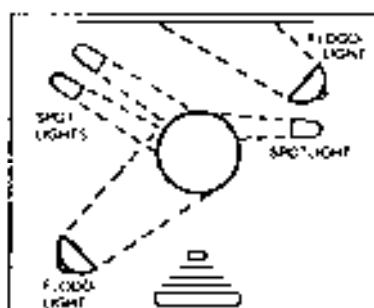
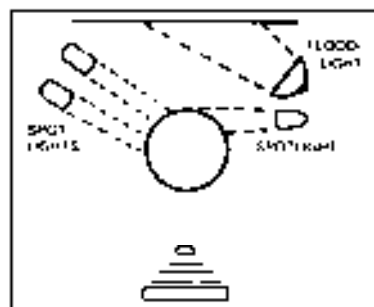
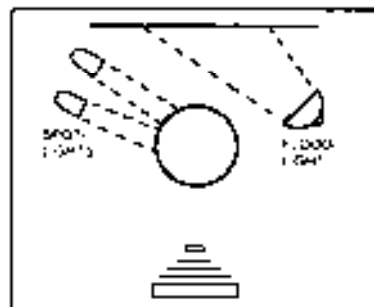
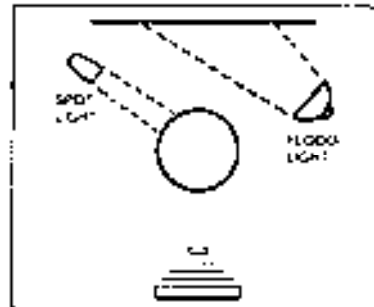
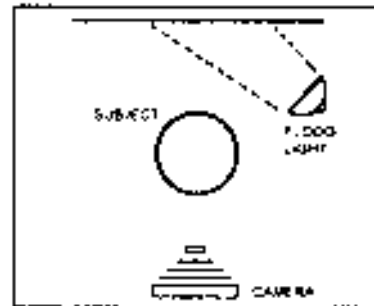
With only the background lighted and no light falling on the ball, the ball appears as a hole cut in the background paper.

To light a round object, start the lighting setup by first establishing the main spotlight high, behind, and to the left of the subject.

Add a smaller spotlight at subject level in a position at the left rear of the set.

Adding a low, third spotlight from the right rear forms a bright highlight in the top of the area lighted by the main light. This adds a sense of roundness to the ball.

The final light in the setup is a weak fill-in light that changes the effect and produces a fully lighted ball that shows maximum shape, form, and texture.



Through experience, you will learn what effects to expect from lighting. Good lighting is created through an orderly, thought-out process involving several steps that should be taken in chronological order:

1. **Previsualize.** You should form a mental picture of how the subject should look. What should be shown? What part of the subject should be featured or be the center of interest?

2. **Determine** what type of lighting to use. From what direction should the main light come? Where should the fill lights be located? From what distance should the light come?

3. **Select** the equipment that can best do the job. What camera 4x5 inch, 8x10 inch, 2 1/4 inch, or 35mm? What kind of lights-strobe, incandescent, flood, or spot? What accessories are needed-reflectors, barn doors, umbrellas, and so forth.

4. **Establish** the lighting. Is the key light doing what you want? Would another light do a better job? Is there enough shadow detail? Is more or less fill light needed? Are there too many highlights and are they in the right places? Are the highlights too bright? Do each of the lights add to the overall quality of the lighting, or can some of them be eliminated? Will the subject record on the film as previsualized?

5. **Determine** the exposure. What should be the exposure for the highlights and the shadows? What is the correct exposure for the overall set? Will the film record the contrast range between important highlights and shadows?

6. **Check** the set. Is light spilling onto the camera lens causing flare? Is the composition as it should be? Are important details obstructed?

7. **Expose** the film.

CREATING THE LIGHTING

For most product photography, the first light to be placed is the main light, then lights to create highlights are added, and finally any fill lights. However, the order in which the lights are placed depend somewhat on the subject to be photographed. When, for example, the product is tented, the procedure should be to establish an overall, high level of illumination first. Other lights should then be added to better show shape, form, and bulk of the subject.

You should always start your lighting setup with the main light. The usual position for the main light in product photography is high and somewhat behind the

subject. The position of this light is very important. To establish this light, you should do the following:

1. Darken the set.

2. Through the camera ground glass, view the effect of the main light on the subject. Have an assistant move the main light in the general area previsualized for the main light. Establish the main light in a position where it produces the most pleasing and desired effect. Remember, the farther the main light is from the subject, the smaller the highlights and the sharper the edges of the shadows. As the light is moved, notice the change in highlight and shadow areas. It is important for you to observe the effect of the lighting (through the ground glass) exactly as the camera will see it. The characteristics of the main light greatly influence the overall quality of the picture.

3. Add secondary spotlights as needed to create highlights and texture. Highlights other than those produced by the main light may be needed to help separate and define subject planes as well as to separate the subject from the background or its surroundings. By using secondary spotlights in a crosslighting or skimming manner, you can emphasize the surface texture of the subject.

Establishing the secondary lights to produce the desired highlights and texture is more time-consuming than positioning either the main or the fill lights. When the subject is a complex shape or has many planes, several small, secondary lights may be needed.

4. And finally, once the main light and highlights have been established, the fill-in illumination is applied to provide the appropriate shadow detail. The fill light illumination is usually supplied by one or more diffused floodlights or reflectors. Care must be taken to ensure that the fill-in lighting does not cast distinguishable shadows. This problem can generally be solved by positioning the fill lights close to the camera and at a low angle or about tabletop height.

Every light you use in product photography should have a definite purpose in creating the final photograph. A dominant light source must prevail without undue competition from other light sources. If the addition of a new light creates new problems, then start over again. Remember, the simplest approaches to product lighting are the best.

Lighting Ratio

Whenever you light the set for small product photography, you must keep lighting ratios in mind. A



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Figure 6-11.—Using painted light.

useful range between highlights and shadows, in which the film can record detail, must be established. This useful range depends completely on the reflectance range of the subject.

With most color films, this range between highlights and shadows must be kept within five f/stops. This means a ratio of about 32:1. Any area of the subject (except specular highlights) that is outside of this range is reproduced either too light or too dark in the final picture. A reflected light meter can be used to find the relationship between the useful or desired diffused highlight and the darkest desired shadow. A difference of two f/stops is a scene contrast of 4: 1; four stops is a 16:1 contrast. Most black-and-white film can record both highlight and shadow detail when this range is not greater than about six f/stops.

Painted Light

Painted light (fig. 6-11) is one of the best ways to obtain even illumination and soft shadows. With this type of lighting, only one light is used. The light is moved constantly up and down and around the subject and its background. Painted light is effective for illuminating subjects made up of many smaller parts that cast shadows onto adjacent parts, such as printed circuits or the inside of a radio.

When you are using the painted light technique, the exposure must be increased by a factor of 3. To determine the painted light exposure, hold the light stationary at the same distance it will be used from the subject. Read the exposure with your light meter. Multiply the exposure time indicated by the meter by 3, the painted light factor.

Example: With the light meter, you have determined the exposure to be 6 seconds. Multiply the exposure time, 6 seconds, by the painted light factor, 3 ($6 \times 3 = 18$ seconds).

The minimum exposure time required when using painted light is 10 seconds. An exposure of less than 10 seconds does not give the photographer enough time to illuminate the subject evenly.

PRODUCT PHOTOGRAPHY TECHNIQUES

Product photography requires patience and a keen eye. The slightest change in lighting or subject placement can add to or subtract dramatically from your photograph. Pay particular attention to small details of your photograph because this helps to provide sharp, high-quality images with fine detail.

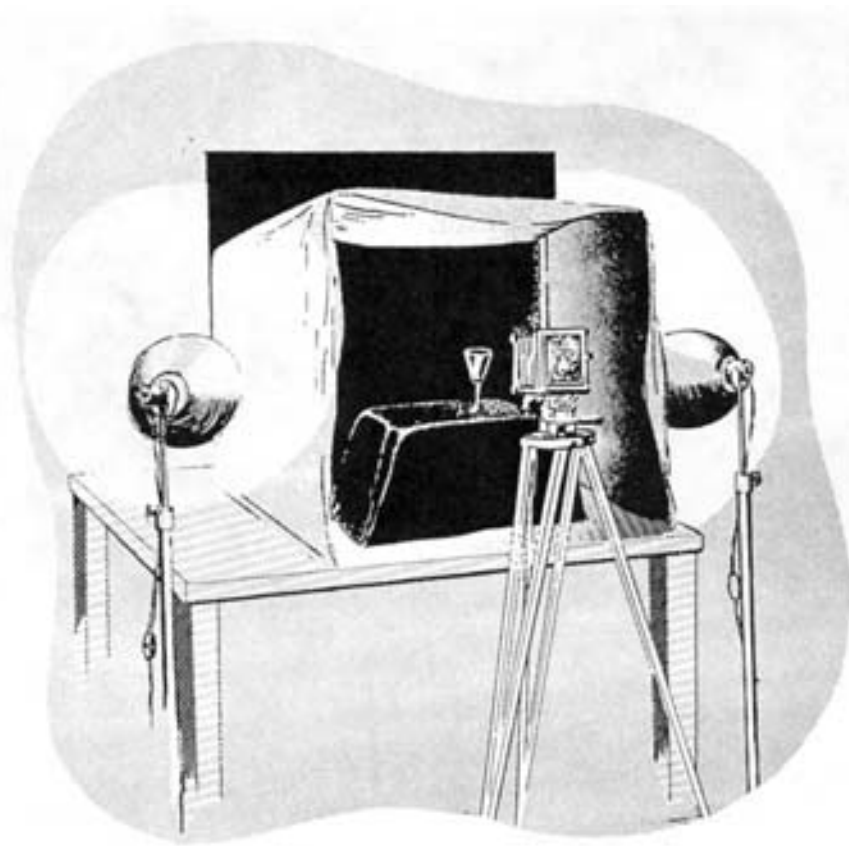


Figure 6-12.—Tent lighting setup.

TENTING

Photographing small products can be quite difficult if they include bright reflective surfaces. You can easily see other nearby objects reflected in them and sometimes even the whole studio. Also, light from the lighting units may reflect off the surface very strongly at a particular point. This can create an unwanted bright highlight. There are two ways to get around these problems. You could use many lights and add reflectors to make sure the lighting is even. This may solve the problem of light from the lighting units reflecting off the subject surface, but unfortunately there are two great disadvantages: it requires more lights than most photo labs have, and you still have reflections. The other way to solve the problem is to use the tenting technique.

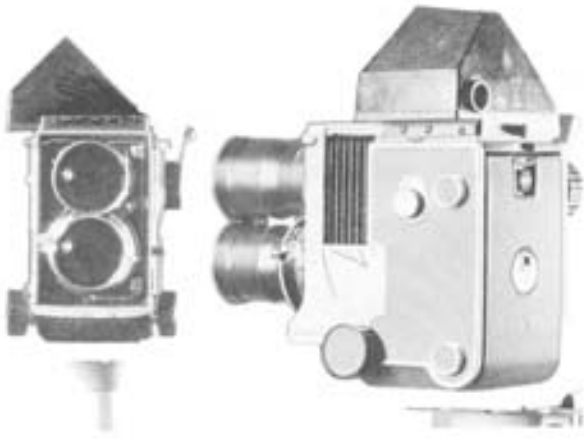
The tent consists of a frame covered by a translucent white material that casts a diffused illumination on the subject (fig. 6-12). The lights are placed outside the tent and directed onto the translucent material. The color of the background, which is placed inside the tent with the subject, depends on the subject and the effect desired. Strips of black or colored paper taped to the inside of

the tent add the necessary dark accents or “bring to life” a colorless object.

DULLING REFLECTIONS

Another way to control reflections is to use a matte spray or dulling compound. Matte spray comes in a pressurized can and is useful for the high gloss of highlights on shiny, metal objects with curved surfaces. When used, the spray should be applied to the entire surface of the object. However, do not indiscriminately spray all types of surfaces. The spray may damage some finishes or plastics. When used on metal objects, it can easily be wiped off after the picture is made. Matte spray can also be applied to the back of a glass of clear liquid to cause the backlighting to spread more evenly over the back surface.

Cosmetic eyeliner, applied with a soft makeup or camel-hair brush, can also be used to help control reflections.



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Figure 6-13.—Using a mirror to show both front and back of the subject in one photograph.

USING A MIRROR

It is often difficult to set up a camera for interior and closeup work to obtain the most desirable viewpoint. Space limitations or pieces of equipment may obstruct the view and make it impossible to photograph an assembly directly. Frequently, a mirror can be used to your advantage in product photography. A mirror placed at the proper angle and distance shows the opposite side of an object in the reflection, while the camera records the front side directly (fig. 6-13). For example, in photographing an object for damage assessment where the damage is on two or more surfaces, you may find it difficult or impossible to show all the damage in one view without the aid of a mirror. In such cases, the value of a picture may be greatly increased by showing all of the damage in one picture. One instance would be in photographing a cylinder that has been scored or cracked on the inside as well as damaged outside. Both surfaces may be shown in one view by using a mirror.

You may often find it desirable to obtain a picture of an object or part that shows its relation to the complete assembly. When it is impossible to position the camera and see the part or object directly, the problem may be solved by using a mirror to reflect the image of an assembled part.

Taking a picture of a reflected image presents some problems that are unique to mirror photography. It is difficult to prevent the mirror from reflecting other objects that are not wanted in the picture. You must be careful and place the mirror at the proper angle to eliminate unwanted reflections. When arranging the



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Figure 6-14.—Exploded views.

lights, avoid illuminating an object that produces undesirable reflections. Often a screen can be set up to block the reflection of unwanted objects.

Correct lighting of an object for mirror photography is slightly more difficult. Lighting on both the front and back sides of the object must be evenly balanced; otherwise, the mirrored image appears too dark or too light. Direct the light on the object from the mirror side as well as the camera side. When it is impossible to place a light on the mirror side of the object, use the mirror to reflect the light onto the back side of the object. This requires careful placement of the camera in relation to the light source to avoid strong rays of light from entering the lens. Spotlights are usually more suitable than floodlights as sources of illumination, because a beam of light is easier to control.

Focus the camera carefully when photographing a reflected image. Usually, it is necessary to use a small f/stop to increase the depth of field sufficiently. When focusing on a reflected image, the lens must be set for the distance from camera to mirror PLUS the distance from subject to mirror. This naturally requires a much greater depth of field than is ordinarily required.

EXPLODED VIEWS

Occasionally, exploded views (fig. 6-14) of small objects are photographed in a group to show the various parts of an assembly. Normally, they are arranged in the layout in the same order in which they are assembled or disassembled. Pay particular attention to the composition of objects as they appear on the ground

glass, rather than as they appear to the eye from the camera position. Attempt to arrange them so they fill the picture area in an interesting manner. Do not arrange them in a long, narrow line with black space above and below them.

Exploded view photographs provide the viewer with positive identification of the many parts and pieces that make up a given machine, instrument, or manufactured assembly. When photographed on a light box, you can illuminate the shadows. The various parts, shown in order of assembly, appear to float in the air in correct alignment and perspective.

A substitute for the light-box background is a sheet of plate glass firmly supported approximately 20 or 24 inches from the floor. Two floodlights, directed from either side of the glass, bounce light evenly from the white seamless paper on the floor up through the glass.

Preparing the Parts

Disassemble the parts carefully so they can be laid out in order of assembly. Clean each piece thoroughly, removing any lubrication or foreign deposits. Lay the parts out as they are to be photographed, and study each piece before you proceed. Large areas of stainless steel or bright metal should be sprayed with a dulling spray to prevent objectionable "hot spots." Smaller areas can be treated with an eyeliner.

Where edges or screw holes do not show readily, they can be edged with a black grease pencil. Conversely, when the part is dark, white pencil or chalk can be used to define it.

Setting Up the Parts

Place the parts on the glass in order of assembly. To stand small parts up, mount them on a small strip or square of acetate with a little beeswax supporting the piece from behind. Even the smallest screw should be mounted on a base so it can be slid into exact position later. The base should be cut as small as possible so it does not interfere with other parts lined up close to it. Heavier pieces can be mounted on small squares of glass.

To obtain an illusion of height, you can move the parts away from the camera. There is a limit to this procedure, however, and when a part becomes too small in relation to others, it should be elevated. Various size blocks (painted flat white) and, in some cases, glass shelves or long, narrow strips of glass are sometimes used.

Camera Angle

For the majority of subjects, the most desirable camera angle is 45 degrees above and to the side of the assembly. From this vantage point, you can see the top, side, and end of most parts.

PHOTOGRAPHING GLASS

In photographing glass, it is the background and reflections from the background that light the glass. Glass objects can be pictured clearly by lighting them in such a way that they stand out as dark outlined shapes against a light background or as a light outlined shape against a medium or dark background. These techniques of lighting are actually variations of a basic silhouette method.

The Set

The setup for photographing glass products consists of white seamless background paper. The background paper is curved forward on the floor so it is completely underneath the area containing the setup. Place two supports, such as sawhorses or tables, on the forward part of the background paper. The supports should be spaced to hold a sheet of plate glass. The plate of glass gives you a transparent worktable through which light bounced off the background paper in back of and underneath the glass product will pass. Strips of colored or black paper can be attached, out of camera view, to the background paper for edge effects to the glass products.

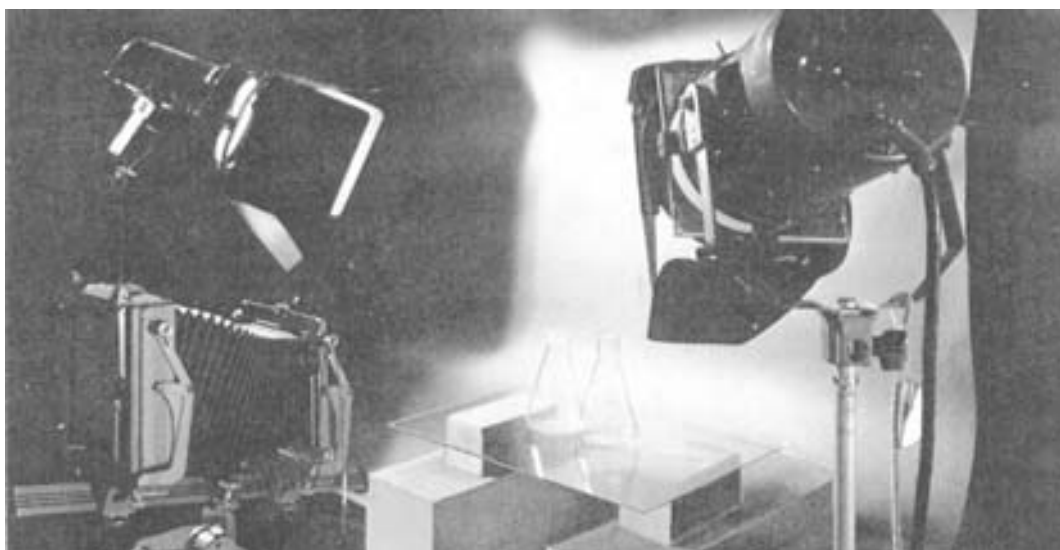
Because the light reflected from the background is usually the only source of illumination, the film exposure is relatively long. Proper camera equipment and a sturdy tripod are necessary to prevent movement during the rather long exposure.

The height or camera angle varies for different subjects and showing the ellipse or oval of the rim adds depth and roundness to the picture, since most glass items you photograph are three-dimensional.

Lighting

You should be able to darken the studio completely. An overhead light, an exit sign, or even a light leak around a door can cause problem reflections. And not eliminating unwanted reflections results in much time and effort wasted.

Lighting glass products (fig. 6-15) is mostly a matter of personal taste. It can be learned by practice and by



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Figure 6-15.—A typical setup for lighting glassware.

studying photographs of glass items. When you are studying pictures of glass objects, notice how all the good pictures were made using variations of basic silhouette lighting. You will find it is easy to produce an infinite variety of effects by simply changing or redirecting the bounce light from the background.

In photographing glass there are no hard-and-fast rules for the placement of lights. The lights should, however, be placed with great care. Changing the angle just a little can drastically change the lighting effect and at the same time cause flare problems. When the lights are positioned to cause a great deal of reflection from the background and this reflection is uncontrolled, it may cause lens flare and result in flat negatives. Lens flare can be controlled or eliminated by erecting a black tent to extend from the lens board to the subject. This tent must be kept outside the angle of view of the camera. A focusing cloth draped over wood dowels works well. When photographing glass products, you should always use a matte box over the camera lens.

When the lighting produces a true silhouette, some highlights (fig. 6-16) may be desired to add sparkle to the glass. This can be done by using front bounce light from a narrow, diffused light source. To create such a source, attach a piece of white mounting board to one barn door of a floodlight and control the width of the light beam emitted with the opposite barn door. This narrow beam of light can be placed on either side of the camera and should be at camera level or higher. The

spacing between highlights on a cylindrical object, created by this method, can be controlled by moving the light closer to or farther from the lens axis. Do not allow highlights to obscure etching on the glass.

Exposure

To determine the exposure for photography of glass objects, you should take a normal reflected exposure meter reading of the background and increase the indicated exposure by four times.

Black-and-white film should be given a shorter than average developing time because the lighting ratio is usually very great, and excessive contrast will result with normal development.

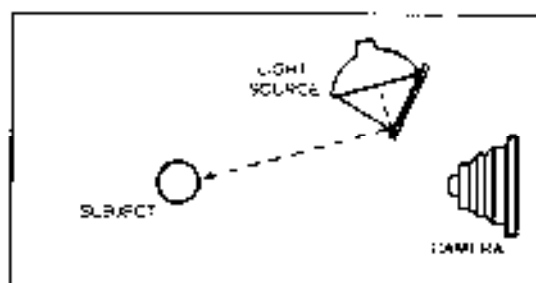
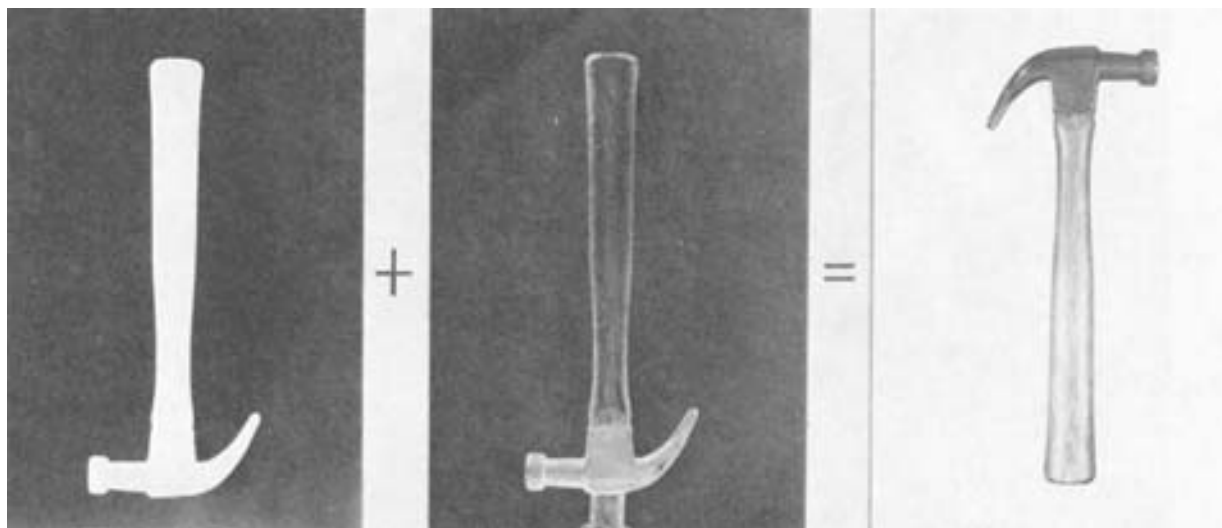


Figure 6-16.—Adding highlights to glass products.



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Figure 6-17–Sandwiching two negatives to eliminate the background.

BLOCKING OUT A BACKGROUND

It is a simple matter to eliminate or block out an unwanted background in product photography. The technique involves two negatives. Two separate pictures are made of the product setup. One exposure on continuous-tone film is made of the product lighted normally. A second exposure, on high contrast line-copy film, is made of the object silhouetted against a well-lit white background. The two negatives are then sandwiched together and printed.

The setup for this procedure is much the same as for a straight product picture. The lighting, however, is a little different. Figure 6-17 shows a typical setup for this two negative technique. The procedure is as follows:

1. Support the product so it cannot move between the two exposures. Use a small support because it must be opaqued out of your line copy or background negative. A light table may make a good support, but when some other support is used, keep it far enough from the background so the background can be lighted separately.

2. Light the product to provide maximum detail. Do not worry about objectional shadows on the background or visually separating the product from the background. In fact, with this technique, lighting that separates the subject from the background may cause a loss of detail at the edges of the subject.

3. Use a white paper background that is large enough to fill the camera view. The background illum-

ination must be very even because the high-contrast film used to make the background negative has a short exposure latitude.

4. Use continuous-tone film to make the subject negative. Use Kodalith Ortho film to make the background negative.

5. It does not matter what exposure you make first. However, each exposure must be treated separately. Only the lights for the exposure being made should be turned on.

6. Because lenses can shift focus at various f/stops, the same f/stop must be used for both exposures and the camera must be rock steady—it cannot move between exposures.

7. Load one film holder—one side with continuous-tone film and one side with high-contrast film.

8. Make the exposures. When you are making the background exposure, be certain there are no specular reflections bouncing off the background onto the subject, and use only the background lights. When making the subject exposure, use only the subject lights.

9. Process continuous-tone film and line-copy film as recommended in the *Photo-Lab Index*.

When you include a ruler (fig. 6-18) in the scene in product photography, especially for damage reports or forensic purposes, it indicates exact scale and simplifies printing the photograph to exact size.



PH3 Yvonne Albritton
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Figure 6-18.—Ruler included in product photograph.

CORRECTIVE PHOTOGRAPHY

Corrective photography is the correct representation of three-dimensional objects on a single plane (the photograph).

At one time or another, you have probably taken a picture with the camera tilted up or at an angle to the subject, and you probably learned by experience what the resulting distortion did to an otherwise good picture. Most of the cameras you use on location do not have movements or adjustments for correcting vertical or horizontal distortion that is created when the camera is tilted or used at an angle to the subject. Such inflexible cameras do not allow you to present the subject correctly from any camera position that shows two or three sides of the subject. For the correct presentation of such subjects, camera movements must be used. Many students of photography, as well as many **self-acclaimed** pros, are inclined to use cameras lacking the essential advantages (camera movements and adjustments) of a view camera. Instead they use their “regular” camera for every assignment even when a view camera is the **only** correct camera for the job. Refer to chapter 4 to re-familiarize yourself with the view camera. Figure 6-19A and figure 6-19B show the



PHAN M. Lakner
302.138A

Figure 6-19A.—Uncorrected vertical distortion.



PHAN M. Lakner
302.138B

Figure 6-19B.—Corrected vertical distortion.

difference in uncorrected and corrected vertical distortion.

ARCHITECTURAL PHOTOGRAPHY

Architectural photography are pictures of man-made structures, especially buildings. These pictures may be made for planning, construction progress, illustrative purposes, inspection and survey, and other similar purposes.

PLANNING PHOTOGRAPHY

Architectural pictures made for planning purposes may fall into several categories. For example, the civil engineer working with an architect on design plans for a new commissary store at the naval air station may need a picture of the commissary store at the naval shipyard to show the architect the general concept of how the new store is to look. The engineer may also need the same picture plus pictures of other buildings near the proposed construction site to be included in the contract bids. These planning pictures may have to show obstructions to heavy equipment, or where the new store will be located in relation to other buildings, proposed and existing. The architectural pictures you make may be presented to the U.S. Congress for allocation of new-construction funds.

CONSTRUCTION PHOTOGRAPHY

Construction progress architectural pictures, (fig. 6-20A and fig. 6-20B) or simply construction progress pictures, are used as proof of construction progress from architect-to-builder-to-Navy. Whenever buildings or facilities are being built, a photographic record of the project should be made. These pictures may show whether the contractor did or did not follow specifications as written in the contract. They can also serve as a visual record of the material used in construction. In addition to their normal preservation as part of the construction contract record, they form the basis for periodic reports to higher echelons, including Congressional Armed Services Committees. Some of these pictures may be of great historical value, but their most important function is to serve as documentation for construction work.

For a complete record, pictures must be taken at intervals throughout the construction period. Excavation, foundation work, and the roughing-in process progress slowly; pictures made every 7 to 14 days, starting at day one, may be adequate to show this

phase of the work. The rest of the work may go more quickly and require pictures every day or so.

For an accurate record of construction, the pictures are usually made from the same camera position from day to day. However, as construction progresses, it may be necessary to make additional views, both exterior and interior.

The person for whom you are doing the photography should explain any special effect desired in the pictures; for example, accenting structural texture, highlighting a specific construction detail, pinpointing an architectural feature, or concentrating on an exceptional landscape view. And do not forget to make the last picture-the one that shows the completed project. We do not mean the one made the day the contractor removed his last hammer from the jobsite. Of course, you made that picture. We mean take a picture several months after the project is "finished," when the grass is green and the trees are planted.

The same care you give to other types of photography should be given to construction progress photography. Do use good composition and lighting techniques and other similar applications of professional photographic skill. Take particular care with shadow areas that may contain important details.

ILLUSTRATIVE PHOTOGRAPHY

The uses of illustrative architectural pictures in the Navy vary greatly. The commanding officer may want pictures that concentrate on overall design to show at a meeting with the admiral. The civil engineer may want pictures that show functional aspects of a building to be included in a report, and the operations officer may want a picture of the operations building, crash and rescue fire house, and the control tower to decorate his office. The editor of the station paper may need pictures that show a building before and after a self-help project. And, of course, the publisher of *Welcome Aboard* wants a picture of the BEQ and the mess hall. All these pictures are considered illustrative architectural photography and should be made to show the buildings to best advantage.

This type of photography is best done with a view camera so horizontal and vertical distortion can be overcome as much as possible. When making this type of picture, be sure there are no distracting elements in the picture area. The foreground and background should be clean. When possible, have all the windows and doors the same; for example, the windows should all be open or closed and the same for doors. When the windows

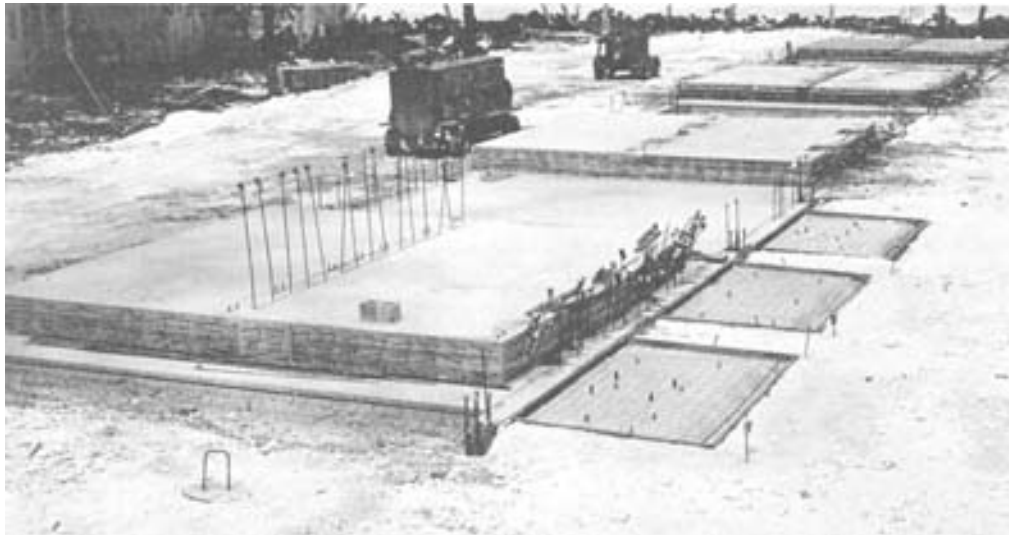


Figure 6-20A.—Construction in progress.

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Figure 6-20B.—Construction in progress.

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have shades or blinds, they should also all be in the same position.

INSPECTION AND SURVEY PHOTOGRAPHY

As with the other types of architectural photography-buildings or facilities-inspection and survey pictures play an important role in the Navy. The Naval Investigative Service (NIS) may need pictures of a building to point out weaknesses in physical security. The fire department uses pictures of the station theater to train the fire fighters in evacuation measures. And the safety officer certainly needs good pictures to show the extent of damage or existing hazardous conditions to buildings or personnel.

Exterior Photography

Buildings must be photographed pretty much as they exist. With portraits, for example, you can ask the sitter to smile and pose, and with still life you can alter the arrangement. You cannot do either of these with a building. The main controls you have over the picture are the viewpoint and the lighting.

For exterior architectural pictures, the position of the sun in relation to the subject is a very important consideration. Which sides of the building are lighted and at what time of day? Where are the shadows cast?

Architecture is dead without light. Like the sculptor, the architect shapes forms in relation to lighting. The lighting at a site is often studied long before the first plans take shape on the drawing board. The lighting becomes a deciding factor in determining the character of a building, the choice of materials, and the location of the building.

The nature and direction of the light are the two main components of our concept of lighting. "Normal lighting" is often preferable for perfect reproduction of materials; that is, light from a slightly overcast sky. This diffused light reduces contrast in the texture of the material just enough to create a good balance between the highlights and shadows. A building as a whole is often depicted better in direct, angled sunlight from a cloudless sky. Filters are used to control the contrast between subject and sky. Direct sunlight often produces contrasty pictures with simplified lines that may sometimes be preferable as an illustrative effect. The light in cloudy weather is the worst kind of lighting for architectural photography. Try to avoid making pictures of a building in cloudy weather. The direction of the light on sunny or slightly overcast days governs the form of

the building and the ability of the photograph to bring out its characteristic features. Since the position of the sun in relation to the building constantly changes, there is only one way to determine the best lighting-study the building at different times of the day. Only then is it really possible to identify the best lighting for the building. Moreover, you should be prepared to study the lighting from different angles. Do not be content with your first camera angle. You should always check to see whether there is a better angle.

A building should be depicted so the viewer experiences its volume and materials. This is often impossible, except with side lighting. The greater the angle of the light, the greater its ability to produce a forceful re-creation of materials and shapes (fig. 6-21).

Also to be considered are the surroundings. Is there construction going on in the background? Is there a distracting landscape or unrelated building that must be concealed? What is the best camera position for making this particular picture? Can I get far enough away to present an undistorted image? Should I have a ladder to stand on or can I make this picture from on top of another building or must I arrange with public works for a bucket truck? What number of viewpoints are required? What focal-length lens is best for each view?

Viewpoint

The greatest difficulties in photographing buildings is converging verticals. When you hold the camera so it is pointing horizontally, you often find there is too much uninteresting foreground included in the picture, and you may be "chopping" the top of the building off. So, tip the camera back to eliminate most of that foreground and get the top of the building back into the picture. Now, look what has happened-the vertical lines are converging; they are no longer parallel; they are sloping in at the top of the picture. The picture is distorted. A good architectural photographer does not produce such a picture. Instead, he uses a view camera and does it properly.

Interior Photography

Photographs of interiors can be grouped under three headings:

- Public interiors of all kinds, such as assembly halls, places of worship, libraries, galleries, auditoriums, and theaters
- Residential interiors, both large and small



PHAN Wright
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Figure 6-21.—Exterior architectural photograph shot with 45-degree lighting.

- Details of interiors, mainly close-ups of adornments, technical features, interior decorations, and so forth.

Photographs of public interiors are often characterized by size, dominance, scale, and measurements. You must be careful of fluorescent lights when shooting color film. They can produce color casts. If the fluorescent tubes are all of the same type, the color cast can be corrected with filters. Fluorescent lighting is, however, often excellent for black-and-white photography. In interior photography of public buildings, an attempt may be made to shoot from a somewhat higher camera angle than eye level to provide an overview of the scene. It is important not to have the first detail in the subject too far from the lower edge of the picture. The interior should glide into the image frame in a natural way. Maximum depth of field is the only acceptable technique here.

Another important problem in public and residential interiors is the balance between natural outdoor light and indoor artificial light. When lighting is mixed this way, it is better to delay shooting until the daylight is too weak to overwhelm the interior lighting. Using the light of the

midday sun is definitely wrong. It is also wrong to photograph interiors so late in the day that the sky seen through windows is completely black. So a time near sunset or, if you wish to avoid visitors, the early morning hours is recommended, especially for color photography. Measurement of the ambient interior illumination and the outdoor light gives you a good idea of the best time to take pictures. Lenses with built-in leaf shutters are major assets in interior photography when some daylight is present, because they synchronize with electronic flash at all speeds. The choice of a suitable shutter speed allows you to obtain balance between daylight and flash illumination.

INDUSTRIAL PHOTOGRAPHY

Photography is regarded as indispensable to Navy industry. You say you did not know the Navy was or had industry? Well, stop and think for a minute. How about the naval aviation depots, the public works centers, and the shipyards? The demands for good photography for research, development, documentation, and communication placed on us by these industrial types of

activities has made photography an integral part of the Navy's industrial framework.

You should be able to tackle just about any photo job that comes up. When shooting industrial photography, you must work closely with research and development engineers, machinists, and technicians far outside the realm of photography. You must be the master of photographic techniques, and have an eye for good pictures-plus imagination for creative photography.

Know Your Subject

Before a satisfactory photographic record of an industrial situation can be produced, you must have an adequate understanding of the subject. For instance, when you are called on to photograph a malfunctioning machine that is capable of performing several operations in the manufacture of an aircraft wing component, you should be told-better yet-shown, how the machine, or one like it, works. With this information, you are better able to shoot the malfunctioning machine and show what the problem is or what is causing the problem. Granted, you could probably make the picture if someone just pointed you in the right direction. It is not always possible to discuss each intimate detail of a problem, but it is certainly possible to make clear just what a photograph should illustrate. This kind of preparation is possible only when there is cooperation between the photographer and the requester. Coordination of photographic activities within an industrial organization promotes a better understanding between everyone concerned, and it leads to a more effective application of photography.

Safety Precautions

Photographers, like other people in and around industrial operations, must observe existing safety precautions. If your imaging facility does much industrial photography, it should have, as a minimum, a safety helmet and protective clothing available for you to wear.

An industrial photographer, like other photographers, must be able to move around to determine the best camera angle. You must also keep in touch with the people responsible for safety to avoid risks to yourself and others. The people in the

photographs must also be shown wearing their safety helmets, hearing protectors, and so forth.

The camera also must be protected. It is a precision instrument and should be given adequate care and protection. When in use, the camera usually does not need any more protection than the photographer. But it should be given extra protection when used in places exposed to flying sparks, spattering molten metal, and so forth. A skylight filter on the lens should always be used to help protect the lens. This filter does not affect exposure or color balance but does protect the lens element. Buying a new filter is a lot cheaper than buying a new lens.

A lens shade should be the constant companion of every lens. It keeps a lot of extraneous light from entering the lens and can also protect the lens from certain types of damage.

Photographing Large Machines and Equipment

The photography of large machines or equipment, such as hydraulic presses and aircraft during rework or ships during construction or overhaul, presents special problems. The bigger the equipment or unit, the more difficult it is to photograph.

In many instances, the equipment may be part of the industrial production setup and the picture making must be planned so it does not interfere with production.

Pictures may be needed at various stages of work to show wiring, piping, and components that are concealed during later steps of production. Pictures are able to show the location and methods of production and assembly. These pictures are often used to highlight certain aspects of work equipment failures, repairs, and modifications.

The Right Viewpoint

When you photograph large equipment or machines (fig. 6-22), a series of pictures is one of the best ways to cover the assignment. The larger and more complex the subject, the greater the need for a series of pictures. The series of pictures should be planned to record important details of the subject. The views to be considered are as follows:

- Plane views-show detail in various components and parts of the equipment

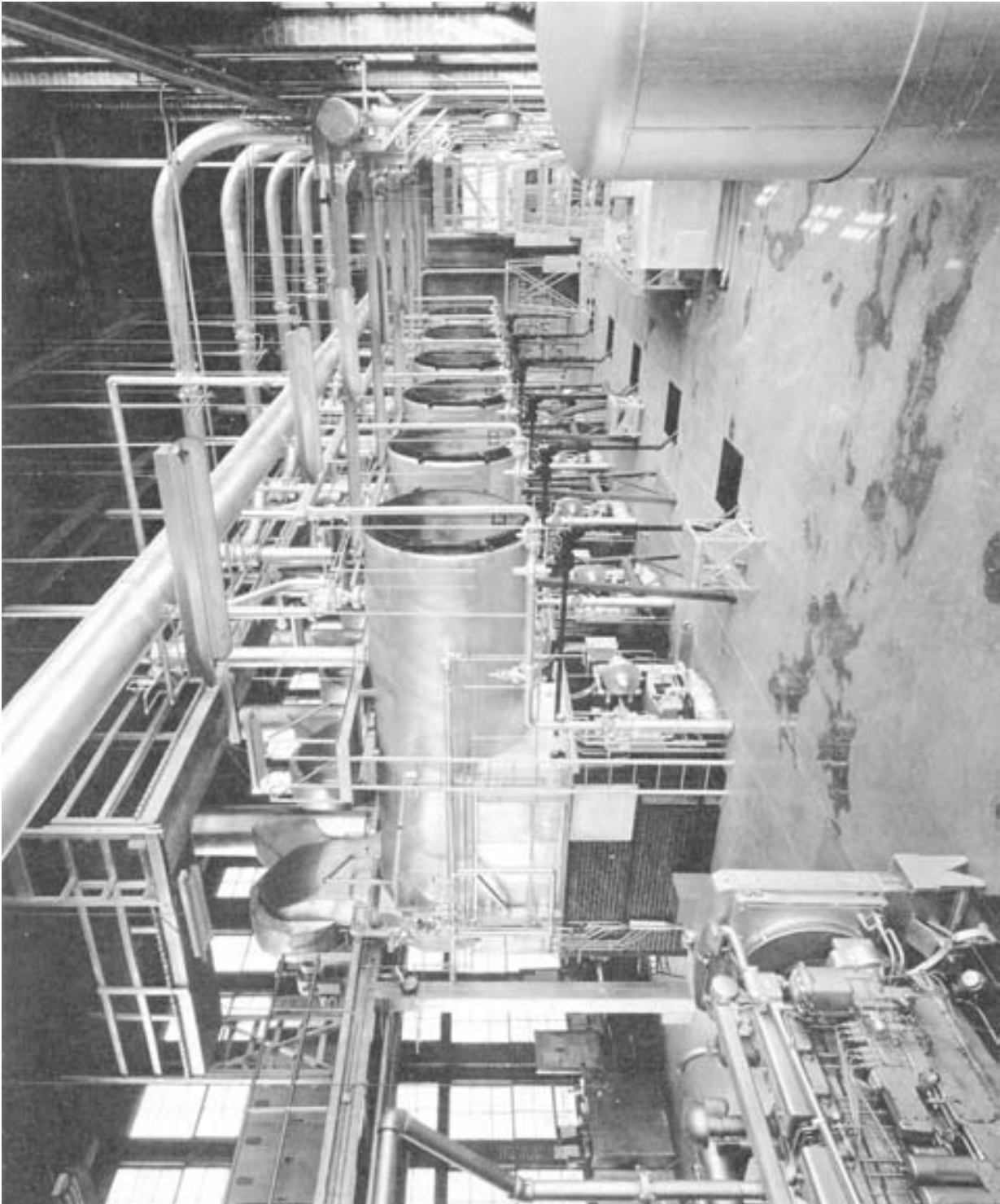
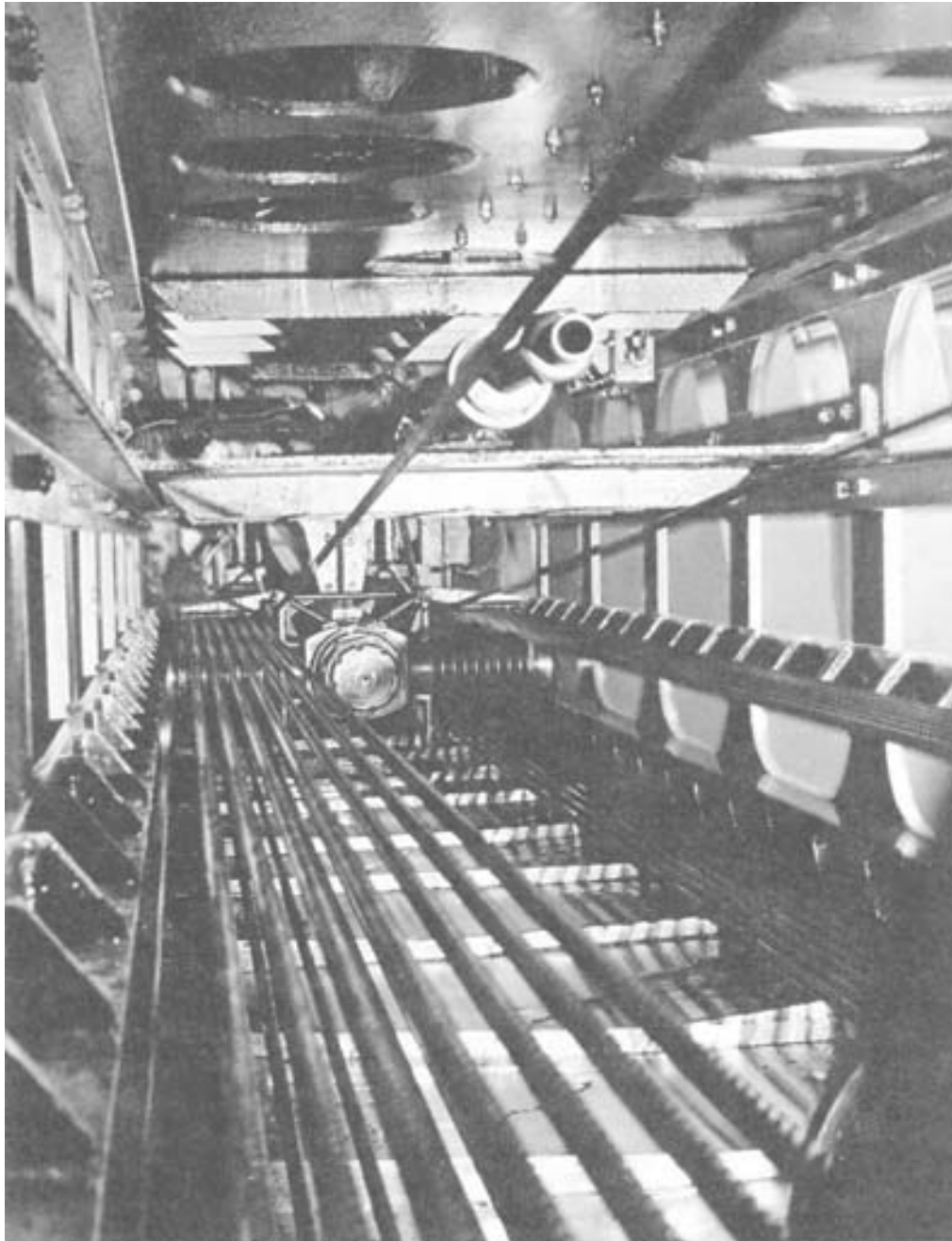


Figure 6-22.-Interior view showing machinery insulation.

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JOCS R.P. Benjamin
302.282

Figure 6-23.—Catapult retraction system.

- ◆ Relationship views-show the relationship or association of various parts and components, one to another (fig. 6-23)

- ◆ Complete views-show the equipment from different angles

The plane view is made of an entire unit or, if the unit is very large, segments of the unit. Plane views are

also made of sections of large units to show greater detail. Along with the plane views, three-quarter views may be needed to show the relationship of unit parts that do not appear in the plane views. Complete overall views of the subject are often made from a high viewpoint. An oblique view from a high vantage point often shows the three-dimensional relationship between equipment parts.



302.283

Figure 6-24.—A starboard-bow view of the Soviet-guided missile cruiser *Slava*.

INTELLIGENCE PHOTOGRAPHY

The purpose of intelligence or reconnaissance photography is to gain information about an enemy or potential enemy. Now that the Soviet Union has been disestablished, the Russian threat to our national security has been greatly reduced. This does not suggest that intelligence photography is no longer required, but that our focus on other threats has intensified. Whether it be interdiction of drug smuggling operations from South or Central America or the potential nuclear threat of a third world nation, the need for intelligence photography will always exist.

Many people think intelligence photographs are always taken with highly sophisticated equipment from an aerial or satellite platform. While it is true that a great portion of intelligence is gathered through these means, much information can be gathered at ground or sea level. In this training manual, aerial collection of information is not addressed. However, intelligence photography

from ships or shore, specifically the photography of ships, aircraft, and ports is discussed (fig. 6-24).

When you are shooting photographs for intelligence purposes, high-quality and sharp image definition is of utmost importance. Black-and-white film is primarily used for intelligence photography due to its finer grain and higher resolution than color film. Whenever possible, black-and-white and color film, as well as motion video, should be used to document subjects of interest for intelligence purposes. The best black-and-white film for this purpose is Kodak Technical Pan (Tech Pan 2415), because of its ultra-fine grain and extremely high resolving power. For color intelligence photographs, you should use Kodak Ektar films, because of their fine grain, higher sharpness, and the variety of speeds available (ISO 25, 125, 1000); they also have the ability to produce high-quality enlargements. Although the resolution of video is inferior to that of film, the ability to view video instantly is advantageous for subjects of special interest.

SHIPS

When assigned to provide photographic coverage of a ship for intelligence collection purposes, you should attempt to provide as much information about the subject as possible. The standard nine-point coverage assists in providing this information in a photograph. The standard-nine points are as follows:

1. Bow
2. Starboard bow
3. Starboard beam
4. Starboard quarter
5. Stem
6. Port quarter
7. Port beam
8. Port bow
9. Vertical

The two most important shots are the starboard beam and the port beam. These two angles are most helpful to analysts for determining the overall dimensions of the ship.

High-angle photographs, such as from a crane, tower, or superstructure, are desired whenever possible. Closeup photographs taken with telephoto lenses are also important to support the basic nine-point coverage. You should photograph the following items (in priority order):

1. Over-the-side equipment and buoys
2. Missiles and launchers
3. Radars
4. Antennas
5. Sonar domes
6. Sensor protrudents
7. Helicopters (on deck and in flight)
8. Unusual optical or electro-optical devices
9. Unusual activity
10. Guns
11. Superstructure
12. Cranes, masts, and booms
13. Ports, hatches, and openings

14. Appendages and fittings
15. Identification numbers, flags, and markings
16. Oceanographic deck equipment

It is good practice to overlap your coverage when shooting with a telephoto lens. This will aid in determining the working relationships between components as well as providing the largest image possible on the negative or videotape. Photographs that provide information pertaining to cargo, personnel count, and bridge or electronic detail may be invaluable. It is better to overshoot than not to cover an area that may provide critical information about the subject.

More times than not, the lighting conditions are very poor when shooting photographs for intelligence purposes. Remember, the exposure latitude for Tech Pan film is very short, so your camera exposure is critical. You will be shooting into shadow areas and open hatches, so bracket all your frames to ensure you record detail.

When a submarine is the target of special interest, closeup views of the following equipment is useful for intelligence gathering:

1. Armament installations
2. Electronic installations
3. Sail area
4. Telescoping equipment
5. Unusual sensor probes and devices, such as trailing wires
6. Unusual, unidentified, or modified equipment

If you are photographing equipment, cargo, or written material that is recovered from floating wreckage of a ship, you should include a ruler in the photograph to show a scale as to the size of the object. The use of a macro lens will be needed to photograph nameplate data, writing, or markings on the recovered material.

AIRCRAFT

Photographs can provide valuable information about the capabilities, mission, and useful range of an aircraft. Whether the aircraft is in the air or on the ground, the way you photograph it aids the analysts in



PH2 K. Brewer
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Figure 6-25.—The Soviet cargo ship *Nbah Pycakob* in the port of Conakry, Guinea.

determining these factors. The basic requirements for photographic coverage are as follows:

1. Overlapping views of the port side, the starboard side, and the underside, including wings and wing tips
2. Radome and appendages
3. Antennas
4. Fuselage area under the horizontal stabilizers
5. Upper section fuselage
6. Odd-colored covering on the skin of the aircraft
7. Bomb bay areas, especially if open
8. Other open hatches
9. Landing gear
10. Engines and cockpit
11. Identification markings

12. Weapons

When shooting aircraft, the underside of the aircraft is almost always in shadow. Remember to compensate for your light meter reading, particularly when the aircraft is airborne. Use the substitution method of exposure to record an acceptable exposure.

PORT

There are times when the ship may pull into a port that has not been visited by Americans for quite some time (fig. 6-25). Photographs can provide a wealth of information such as trading, harbor depth, and various other activities and capabilities of a port. You may be tasked to provide photographic coverage. The following areas should be documented:

1. Panorama of port
2. Ships in port
3. Channel markers

4. Piers
5. Cranes
6. Warehouses
7. Railheads
8. Fuel farms

9. Port headquarters building
10. Dry docks
11. Ship repair or ship building yards

Most photographs of a port can be taken when your ship is entering or leaving the harbor. Never sneak around military installations or restricted areas in any port.

CHAPTER 7

PORTRAITURE

A portrait is a likeness of a person, especially the face. This definition isolates *one* essential point in portraiture. A portrait should emphasize the person, rather than the person's environment or something associated with the person. However, a pictorial representation that portrays *only* a recognizable likeness of a person is not enough. A portrait must be more than just a photograph. It must have mood, personality, and possess characteristics from which a viewer can draw conclusions about the subject. By manipulating expressions, posing, lighting, and environments, a portrait photographer can portray any mood from happiness to gloom, as well as the personality of a subject. Posing the subject with familiar objects and environments can produce a more natural expression and pose because the subject will be more at ease. Articles or props included in the scene can help tell more about the subject.

Success in portraiture requires a thorough understanding of the techniques involved, an artistic ability, and a talent for directing the subject through a desired expression or pose. The portrait photographer should have a sensitivity for, and an understanding of, people. Portrait photographers vary considerably in their styles and techniques. The subjects of portraits vary in their likes and dislikes. There is no one blueprint or formula that will assure success.

The portrait is an interesting and challenging assignment to many Navy photographers. In portraiture the subject is always changing and challenging the Photographer's Mates. To meet the challenge of portrait photography, you must have vision, good judgment, and the ability and willingness to show them to greatest advantage.

Most people have their portrait made because they want someone else to see how they look. A beautiful woman knows she is beautiful, and in a picture, she wants to appear beautiful-so make her beautiful. Some flattery may be necessary, but you should not overdo it. Men know their features; they know whether they appear dignified; they know whether they appear to have great strength of character; and they are correct in expecting the photographer to emphasize these good points. The subject expects a true portrait-a good expression and a natural pose, a portrait that shows

whatever beauty or strength the person has, and one that reflects his or her character and features.

Character is formed by life. A frown or a smile today leaves no trace, but continued use of facial muscles to form a smile, a laugh, or a frown leaves lines on the forehead, around the eyes, nose, and mouth. These lines and expressions form facial character. They are subdued or exaggerated by the way you light the subject. You should not eliminate character lines altogether, but, you should only soften them with lighting. A face has features: two eyes, a nose, a mouth, and two ears, but photographically these features are not equally important. To the portrait photographer, the most important and most expressive are the eyes; the mouth is second only to the eyes.

Facial expressions constantly change and last only momentarily. No happy expression or frown lasts long enough to take full notice of it-until it is photographed. When you photograph an expression at the wrong instant, all the bad points appear exaggerated.

To be a good portrait photographer, you must learn to study each face as it appears before the camera, and light it to represent the natural features and character accurately. Do not try to capture that fleeting expression. It is not the expression that shows that person's true character. What you want is a person's natural expression. A softness of expression is best-neither too sharp nor too faint; not too lively or too gloomy.

PORTRAIT STUDIO

The portrait studio should be a place isolated from distraction where the photographer and subject can work without interruption. It should be a comfortable place where the subject feels at ease, where the *tested* equipment works, where the color quality of the light can be controlled, and where the photographer and subject can move from pose to pose without interruption. Avoid using the portrait studio as a crew's lounge or lunchroom. The portrait studio should always be clean and neat. The portrait studio is one of the few areas that customers ever see, and it represents the overall condition of your photo lab.

The studio should be arranged so the lights, camera, and electrical cords are safely out of the way and your subject does not have to avoid tripping over them. Every effort must be made to make the portrait session a pleasant experience for the customer. Any props to be used should be stored out of the way where they can be retrieved quickly and easily.

The studio should be spacious enough to move around freely, with enough room surrounding the posing bench so the subject does not feel crowded. The distance from the posing bench to the background should be great enough so shadows from the subject are not cast onto the background. This distance should also be great enough so the background is out of focus when the lens is stopped down to the working aperture. The studio should have enough room so a longer than normal lens can be used and provide enough room behind the camera so the photographer can move about freely. It should be wide enough so the lights can be moved in an arc around the subject without changing the light-to-subject distance. The ceiling should be high enough to provide enough space for a standing full-length portrait.

Whatever the size or location of the studio, it must, above all, be a productive, professional workplace, having everything required to produce technically perfect portraits.

In many Navy photo labs, especially the old ones and aboard ship, these conditions do not exist. Just because you do not have a large "professional" studio and equipment does not mean you cannot produce professional quality portraits. Many professional quality portraits are made by Navy Photographer's Mates using only two small lights in a compartment being used as an office, finishing room, and darkroom aboard ship.

STUDIO EQUIPMENT

There are endless types and manufacturers of studio equipment available for controlling light and making portraits. The size and the budget of your imaging facility determines what is available for making portraits. This chapter discusses only the basic studio equipment that is common to most Navy imaging facilities.

Camera

Regardless of what camera you use in the portrait studio, it should be clean and in good working order. The

camera should have interchangeable lenses and be at least medium format. The larger the negative size of your portraits, the higher the quality of the finished product.

Lenses

A lens used for portraits should have a longer than normal focal length. A long-focal-length lens produces a large image on the film while keeping the camera at a far enough distance from the subject to prevent image distortion. Normal-focal-length lenses are too short for anything but full-length portrait photography. They require the camera to be too close to the subject, image distortion becomes apparent, and working too close to the subject may intimidate him or her. Working too far from the subject with a normal lens to prevent distortion makes the image size too small. The ideal lens for portraiture should have a focal length equal to 1 1/2 or 2 times the diagonal of the film. When you are using 4x5 film, the lens focal length should be about 8 to 12 inches.

Background

Simplicity is the key word in portrait backgrounds. Simple backgrounds give more artistic results by maintaining viewer interest on the subject. The most widely accepted background is a large, flat, unmarked surface, such as a painted screen, an actual wall of the studio, or seamless background paper suspended from the ceiling. Whatever the background, it should have a matte finish, rather than a glossy finish. A glossy finish causes distracting reflections.

A background can be plain or patterned. When the background has a pattern, it must not detract the viewer from the main subject. When props are used, such as a globe or an American or Navy flag, they must not draw attention away from the subject.

The background should normally be light and neutral in color; however, black or dark backgrounds are used for certain effects. A black background is used to add richness to the finished print. When a black background is used, keep your subject a good distance from it to prevent the lights (except the background light) from striking it.

The color of a background becomes important when color portraits are made. Bright-colored backgrounds should be avoided because they distract from the subject. When using a cold-colored (blue, green, etc.)

background, you must prevent the background from reflecting colored light onto the sides of the subject's face. This produces a sickly appearance. The background tone can be changed by adjusting the amount of light falling upon it. Dark backgrounds with earthen colors, such as brown and dark orange, can be used for low-key portraits. Intensely illuminated backgrounds with light pastel colors can be used for high-key portraits.

Your studio should have enough backgrounds to meet the demands of customers. As a minimum, you should have a gray or light blue background for roster photographs and white for full-length photographs. Always stock extra white seamless paper. White seamless paper is used mostly for full-length photographs. This paper becomes dirty and is torn rapidly since it is being continually walked on. You can extend the life of the background paper for full-length portraits by laying sheets of acetate (such as clean-up film) on top of the area to be walked on. The acetate does not show up on the film or print.

Lights and Accessories

Almost any type of light can be used for portrait photography. This includes natural light, such as the sun, as well as artificial light, such as electronic flash.

The sun, with its different forms of illumination—daylight, skylight, and window light—is the major source of natural illumination for portraits. The sun is used primarily for location portraiture.

Most types of artificial light can be used for portrait photography as long as the intensity is sufficient to permit short exposures. Short exposures are desired because it is difficult to keep a subject motionless during a long exposure. For color portraits, the color quality of the light source should be the same as that for which the film is balanced. Of all the artificial light sources available, electronic flash is the best light source for portrait photography because of the following:

- It provides a large output of light without the annoying heat produced by incandescent lights.
- The extremely short duration of the flash stops subject movement.
- The color temperature of the light is compatible with daylight.
- They are as versatile as other light sources.

Electronic flash units specifically designed for portraiture usually have tungsten modeling lamps located near the electronic flashtube. These modeling lamps provide constant, low-intensity illumination on the subject or background. This allows you to see the lighting effect that will be produced when the electronic flash units are fired.

BASIC LIGHTING UNITS.—Studio electronic flash units are divided into two broad classifications: those that project a relatively narrow cone of concentrated, crisp light and those that project a broad area of softer, more diffuse light.

Spotlight.—A spotlight projects a narrow, highly concentrated, crisp beam of light, produced by an undiffused clear flashtube. A Fresnel lens or a small reflector with a mirror finish is used to direct and focus the light. The light produced by a spotlight is very much like direct sunlight on a clear day. The light rays are nearly parallel and are not diffused. The shadows cast by a spotlight are hard with sharply defined edges that add crispness. A spotlight is usually used to highlight or stress a feature of the subject or as a hair light or background light.

Floodlight.—A floodlight produces a broad area of partially diffused, soft light, very much like sunlight on an overcast day. A frosted globe is used over the flashtube, so the light produced is initially diffused. The light is further diffused by the reflector that causes the light rays to cross and interfere with each other. The rays, projected from the front of the flashtube, however, are not as diffused and have a crisper quality. The light, produced by an electronic flash floodlight, has a crisp quality at the center and a softer quality toward the edge. When you want to use just the softer part of the light, allow only the outer part of the light beam to fall on the subject. This technique is called *feathering* the light. When you want the entire beam of light to be diffused and very soft, use a diffusing screen over the light source. There is also a type of light unit known as a *capped* light. This type of unit has an opaque metal cap placed in front of the flashtube to block specular light from reaching the subject. All light projected by a capped unit is diffused.

A floodlight is usually used as the main (modeling, or key) light in portraits, especially where a soft effect is desired. It is also used as a fill light because a fill light is always diffused.

ACCESSORIES.—Many accessories are available for use with studio lighting units. Accessories are

important tools that make your portrait lighting units either more dependable or more versatile. They aid in creating the exact lighting affect you want. Common accessories are as follows: diffusers, barn doors, snoots, and umbrellas. If accessories are not available, compromises in the lighting can alter the effect and quality you desire.

Diffusers.—You use diffusers when you want to change specular light to a softer, more diffused light. Diffusers are made of translucent or mesh materials that, when placed in the light beam, break up or diffuse and soften the light. The finer the mesh, the more diffused the light. When only a small amount of diffusion is needed, a wide mesh material, such as *gray* window screen, works well. For more diffusion, two pieces of screen can be placed together slightly out of alignment, or a finer mesh material, such as *white* cheesecloth, can be used. Floodlights initially produce a fairly diffused light, but diffusers may also be used with them. Diffusers can be mounted on the light unit or placed somewhere between the light unit and your subject.

There are many reasons for using a diffuser instead of a light that already produces diffused light. A diffuser may be needed when you do not have a soft light available. A softness that is between two different light sources may be needed, or you may want to produce a small area of diffused light that can only come from a spotlight with an installed diffuser.

Barn Doors.—Barn doors are made from opaque material. They are usually made of metal, painted black, and attached and hinged to the front of a light unit. They can be positioned to block or feather a portion of the light produced by the unit. Barn doors are made for both spotlights and floodlights. They are good accessories for controlling spill light.

Snoots.—Snoots are cylinders, open at both ends, usually made of metal and painted black. They are used at the front of a spotlight to limit the size of the circular area projected by the unit. Short, wide snoots give a large circle of light. Long, narrow snoots give a narrow circle of light. A cardboard tube or black-rolled paper can be used for a snoot when you need to improvise.

Umbrellas.—Umbrellas work much like the reflectors used on floodlights and provide an excellent means of converting specular light into soft, diffused light. They are used with any light source. The light unit is pointed away from the subject; the umbrella is

attached in front of the light and reflects or bounces the light back and onto the subject. The reflected light falling on the subject is softer and more diffused than the light originally emitted by the source.

The reflecting surface of the umbrella determines the quality of the light. Umbrellas are usually made with a matte, white surface that provides a very soft, completely diffused light. Some umbrellas are constructed with a shiny, metalized surface. Metalized umbrellas throw a somewhat specular light, but the light is softer and spread over a larger area than the light emitted by the original light source.

FILM FOR PORTRAITS

For black-and-white portraits, black-and-white panchromatic film is generally used. With a pan film, the appearance of any red spots, veins, or redness in the subject's skin is apparently reduced in the final print, because of the sensitivity of the film to red. Conversely, an orthochromatic film can be used when the texture of a man's skin, especially an older man, is to be emphasized.

When you select a color film for portrait photography, there are two important considerations: What type of product is to be produced and what is the color of the light source?

Another factor to consider in selecting a film for portraiture is the ISO film speed in relation to the intensity of the light source. A slow film can be used successfully with a light source that has relatively high intensity, such as an electronic flash unit. When the same slow film is used with a light source that has relatively low intensity, an extremely wide aperture must be used. When a fast film is used with a high-intensity light source, a smaller aperture is required, increasing the depth of field which may not be desirable for portraiture.

When you are shooting portraits, do not be stingy with film. With a medium-format camera, you have 9 to 15 frames to work with. When you have the commanding officer or the admiral in the studio for a portrait, shoot at least the entire roll. Never shoot just three or four frames. Film is cheap and you want to provide the customer with a variety of poses and expressions to choose from.

MAKING THE APPOINTMENT

When possible, portrait times should be made by appointment. Using an appointment system gives you a

good start towards making a successful portrait. By using an appointment system, it tells your subject that he or she is important and will not be wasting time waiting to get into the studio. This brings the person to the studio with a positive attitude, and that is half the battle. An appointment also helps you. When an appointment system is used, you know how much time you have to work with each subject, and you do not have to rush through a sitting because someone else is waiting prematurely. Between appointments you have time to straighten up the studio, load film, complete job orders, screen processed portrait film, and so on.

Appointments should be made at least 15 minutes apart. This way you have time to take care of other business that may come up. If one customer is a few minutes late, you can also use this time to catch up.

When appointments are made, suggest to the person that they come in early in the day. Most people look their best and their clothes are fresher early in the day. Men, particularly those who develop a heavy beard (five-o'clock shadow), need to have their portraits made at the beginning of the day. However, they should not shave then come right in to be photographed. This provides time for facial blemishes, caused by shaving, to disappear.

Men should have a haircut and look sharp, but the haircut should be a day or two old. Uniforms should be pressed and well fitted with all awards, grade, and rating insignia properly placed. A chart of military awards and decorations is helpful in settling differences regarding the proper placement of ribbons and metals.

THE SUBJECT

When someone comes to the photo lab for a portrait, that person usually feels uncomfortable (like going to the dentist). Your attitude can help make the person feel relaxed. The secret to your success in putting the subject at ease is to convey a genuine and sincere attitude. Let the person know by your words and actions that you plan to do your best to produce a portrait that anyone would be proud to display.

Your attitude will leave a lasting impression on the subject and set the tone for the portrait setting. Greet the customer warmly, with a smile on your face as well as in your voice.

You, as the portrait photographer, should make it your business to know something about the subject. What is his job? Where does she work? How long has

he been on board? What was her last duty station, and so on? The more you know about your subjects, the easier it is to work with them. Train yourself to gather a quick impression of the subject's intellect, taste, and aspirations. Talk to each of them and gather information regarding their special interests.

Conversation sooner or later strikes a responsive chord and the subject's face comes to life and gives you that natural expression so necessary to the finished portrait. Since the success of the portrait depends greatly on a natural expression, your task is to create a friendly situation whereby the subject feels he has an equal part. The making of a good portrait depends on cooperation. Do not rush a sitting and avoid getting flustered. You must always control the situation.

Invite your subject into the studio in a casual way. Have a bright light on, usually the main or modeling light. This way the shock of turning on a bright light in a dark studio is avoided. Ask the subject to be seated; a motion with your hand may be enough. A person who is treated in a friendly yet respectful manner, and kept in casual conversation, usually strikes a natural pose better than one who is not. If this fails, you must skillfully direct the subject. At times you may have to touch the subject to adjust a hat, sleeve, necktie, coat, and so on. Before touching the subject, explain to the person what action you are about to take.

Talk to your subject and direct movements, from in front of the camera, within the circle of light. It is disturbing for the subject to hear a voice from a dark void trying to direct his or her movements.

Posing is the most unpredictable part of a portrait session. The subject is at a mental disadvantage because he has to follow your directions. This requires subtle handling on your part and an understanding of human behavior.

CAMERA HEIGHT

The best average camera height for a head-and-shoulders type of portrait is slightly above the subject's eye level. This places the subject's eyes well above the center of the picture space. Slightly above eye level then is a good place to start. Most portraits are made from this camera viewpoint, but individual features and characters of the subject often dictate a higher or lower camera position.

For three-quarter portraits, either sitting or standing, the camera height may need to be changed. For example,



Figure 7-1.—Subject looking directly into the camera.

you may want to start with the camera level at the upper chest or even at the eye level of the subject. Other factors that should be considered when selecting the camera height (especially with a head-and-shoulder portrait) include the shape of the subject's face and facial features, such as a long nose and the length of the subject's neck. By changing the height of the camera in relation to the subject, you can make corrections to emphasize or de-emphasize features of the subject.

For full-length portraits, you should start with the camera height about waist level and the lens parallel to the subject. When the camera height is too high or too low and the camera lens is tilted, distortion of the subject occurs. When the camera is too low, the subject's feet appear large and the head small. When the camera is too high, the subject's head and upper body appear large and top heavy.

A camera position below the eye level of a subject can produce a side effect that may be distracting; that is, showing the nostrils more prominently and causing them to appear as two black holes. To help remedy this situation, you should place the modeling light higher to cast a shadow beneath the nose, so the nostrils appear to blend in with the shadow area.



Figure 7-2.—Subject looking too far away from the camera.

POSING

The posing bench should be set at an angle to the camera. When the bench is square to the camera, people tend to sit on it with their shoulders square to the camera. This puts their shoulders straight across the picture and such a pose exaggerates the width of the shoulders. This pose is obviously inappropriate for a woman. When your subject is a male dignitary (VIP), a pose like this enhances those qualities. Very few people have positions that demand such a pose. Having the posing bench at an angle to the camera before the sitter arrives should automatically suggest to the subjects that they sit with their shoulders turned slightly from the camera. With the shoulders turned slightly from the camera and the head turned back toward the camera, a sense of motion is created. Even more motion and alertness can be suggested by having the subject lean slightly forward.

Eye Direction

To create an intimate portrait, the subject appears to return a glance to the viewer. The subject's eyes should look near the camera lens (just above or to the side of it). When the subject looks directly into the lens, a stare

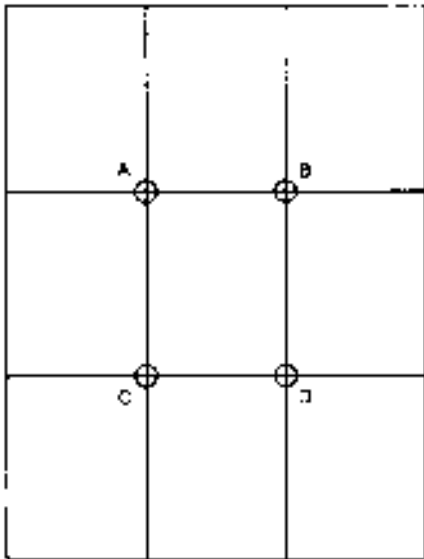


Figure 7-3.—Rule of thirds.

will result (fig. 7-1). When the eyes are looking too far away from the camera, a vague, faraway look results (fig. 7-2). The eyes also lose their brilliance and sparkle, and too much white shows when the subject's eyes are looking away from the camera.

Portrait Composition and Subject Placement

As in every type of photography, in portraiture there must be one, and only one, principal point of interest. Naturally, in a portrait, this is the subject's face. You can emphasize the point of interest in a portrait by doing the following:

- Having it contrast with the background
- Giving it the strongest lighting
- Posing the subject and arranging the props so all elements point to it
- Locating it at a strong point within the picture area

Where are the strong points within a portrait picture space? The *principle of thirds*, as discussed in chapter 5, applies to portraiture as well. These are the areas within a portrait that attract eye attention and are the preferred locations for the center of interest (fig. 7-3). In a portrait, when the main point of interest is located at Point A, the secondary point of interest should be at Point D. If B is the point of interest, C becomes the



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Figure 7-4.—Subject placed too high in the photograph.

secondary interest point. Such an arrangement obviously balances the composition.

As stated earlier, the subject's face is the point of interest in a portrait and, of course, covers a considerable area in the picture space. Usually in portrait composition, the eyes fall close to Points A or B. But these positions are approximations only. The final adjustment of the head depends upon several factors: the eye direction, the shape of the body, and the leading lines. No rule can be given for best portrait composition. Rules only give guidance to a rough approximation of good placement. You can only arrive at the best composition for each portrait through the feeling for balance and subject position.

When the head and shoulders are placed high in the picture frame, a sense of dignity and stability is gained. Such placement is particularly appropriate when the subject is a person of importance, such as the CO. However, when the head is too high (fig. 7-4), viewing the picture is uncomfortable because there is a feeling that if the subject stood up he would bump his head. Also, when the head is too high, the proportion between head and body areas becomes awkward.



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Figure 7-5.—Subject placed too low in the photograph.

Most inexperienced photographers place the head too low, rather than too high. This is usually the result of the photographer's desire to show as large a head as possible. When the head is too low, there is not enough body to support it (fig. 7-5).

When the head is turned toward the side, avoid having the tip of the nose from coinciding with the outline of the cheek or projecting only slightly beyond the cheek line. In either case, the far eye will be divided by the nose. When the tip of the nose sticks out only a little beyond the cheek line, it appears as a lump on the cheek.

Before you seat a subject, suggest that the subject may like to check his or her appearance in a mirror. Combing the hair, straightening a tie, setting a hat at the proper angle, and smoothing out the lay of the clothes should ensure a neat, well-groomed appearance. When the subject is in military uniform, be sure that medals, ribbons, insignia of grade or rate, and other accessories are worn properly. These minor details are easily overlooked and failure to correct a discrepancy may make it necessary to retake the portrait.

When a military subject is seated, one particularly important point to consider is the lay of the coat collar. The collar has a tendency to separate from the back of

the subject's neck and project outward resulting in the impression of a hump. The coat should be pulled down to make the collar fit properly and make the line of the subject's back appear free from slouch or slump. When the portrait includes only the head and shoulders, the drape of the coat can be improved by unbuttoning the lower button and pulling the bottom of the coat down.

The sleeves of a coat are another problem, particularly when you photograph a seated subject. There is a tendency for the sleeves to work up and wrinkle at the elbows, allowing either too much wrist or too much shirt cuff to show. To help remedy this, have the subject pull the sleeves of the coat down and straighten out the wrinkles as much as possible. Wrinkles, folds, and unwanted creases in a uniform detract from a neat appearance. When the subject is wearing a long-sleeved shirt under a coat and the hands will appear in the portrait, both shirt cuffs should be visible or both should be out of sight. Do not have one cuff visible and the other not.

Stay near the camera and tell the subject what to do. You are obligated to give directions regarding the pose. A subject is not able to see all posing aspects for the portrait. Whether the subject is an admiral or seaman, you are expected to detect and correct any discrepancy in pose, uniform, gestures, or actions, and so on. One of the greatest obstacles to successful portraiture is the timidity of some photographers and the way they handle the subject. Never take a portrait when something about the portrait is wrong because of fear or timidity to speak and act in the presence of high grade. The results will be disappointing and embarrassing.

When the military subject is to be photographed uncovered, be sure that the hat is removed far enough in advance so any impression on the forehead caused by the hatband has time to disappear.

When the subject shows a tendency to squint or blink, suggest that he rest his eyes by closing them for a moment. The facial expression is an important element to a good portrait. Unless some method is used to induce a pleasant expression, the subject will generally appear bored and uninteresting. Telling a subject to look this way or smile is not enough to cause the subject to smile. A forced smile sometimes looks more like a frown. A good method to get a pleasant expression is through conversation. Talk about a recent incident, a funny story, the weather, or any other topic that will cause the subject to concentrate on something other than the business of making a portrait. With most people, a smile is contagious. When you smile at a person, the person usually responds with a smile. Beware of a broad smile

because it rarely looks attractive, and it is usually not appropriate for a person in a military uniform. While you are trying to induce the expression that will show off the subject to the best advantage, be particularly observant of the details necessary to maintain a neat appearance and good composition.

FUNDAMENTAL PORTRAIT LIGHTING

The success of a portrait is equally dependent on lighting as on the pose of the subject. The manner in how the subject is lighted can actually set the mood of a portrait. The best portrait lighting will simulate natural sunlight. This is because we are accustomed to seeing faces illuminated from above and to one side with shadows cast downward and on one side or the other. Light coming from below eye level casts shadows upward and produces an unnatural, ghastly effect. Good portrait lighting shows off the subject to the best advantage, emphasizing the form and expressiveness of the facial features. When lighting appears pleasing and natural in a portrait, it produces prominent highlights on the forehead, nose, cheeks, and chin with enough shadows to round out the facial features.

Lighting for a studio portrait normally requires at least two lights. One of these is the *main*, *modeling*, or *key* light; the other is the *fill* or *fill-in* light.

Portrait lighting is divided into various types called lightings. Some of these lightings are as follows: broad, short, butterfly, Rembrandt, split, and rim. These names have been assigned because of the visual effects the lighting creates when it falls on the subject from a given direction. This visual effect is derived from the modeling light. Other light sources that may be added to the *modeling light* to enhance the subject are as follows:

- Broad lighting—The main light completely illuminates the side of the face turned toward the camera.
- Short lighting—The main light completely illuminates the side of the face turned away from the camera
- ◆ Butterfly lighting—The main light is placed directly in front of the face and casts a shadow directly under the nose.
- Rembrandt lighting—This is a combination of short and butterfly lighting. The main light is placed high and to the side of the face turned away from the

camera and produces a triangle of light on the side of the face in shadow.

- ◆ Split lighting—The modeling light is placed to light completely one side of the face while placing the other side of the face in shadow.

- ◆ Rim lighting—The modeling light is placed behind the subject and places the entire face in shadow.

MAIN LIGHT

The main light is often called the *modeling* light because it is used to model the face (or subject). The main light creates a three-dimensional effect by either emphasizing or de-emphasizing the curvature and characteristic features of the face with highlights and shadows. The modeling light should always be the one dominant light source in a portrait because it controls the direction of the shadows.

The direction of the main light establishes four basic portrait lightings. These basic lightings are as follows: *three-quarter lighting*, *side lighting*, *frontlighting*, and *backlighting*. When reading other books on portrait lighting, you will often encounter other names depending on what the author wanted to call the lightings. You, as a Navy Photographer's Mate, will mostly be concerned with three-quarter (broad and short) and front (butterfly) lighting.

We also designate each of our lightings as high, medium, and low for vertical position. To go further, we designate the lighting as right or left of the subject.

These lighting positions change with each subject. When setting portrait lights, you should always study the effect and view the subject from the camera position, preferably through the viewfinder.

THREE-QUARTER LIGHTING

Broad and short lighting are two types of three-quarter lighting, and they are the types that you most often use for official portraits. The only difference between the two is the position of the main light and the way it illuminates the subject.

Short lighting is used for people with a normal shaped face or people who have a wide face. When short lighting is used, the side of the subject's face that is away from the camera is illuminated. This puts the side of the face towards the camera in shadow. By putting the side of the face towards the camera in shadow, you can provide a slimming effect.



SHORT LIGHTING
MAIN LIGHT ONLY



SHORT LIGHTING
WITH FILL LIGHT



BROAD LIGHTING
MAIN LIGHT ONLY



BROAD LIGHTING
WITH FILL LIGHT

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Figure 7-6.—Broad and short lighting.

Broad lighting is useful for subjects with a narrow face. When broad lighting is used, the side of the face towards the camera is illuminated, and the side of the face away from the camera is in shadow. This provides a widening or broadening effect of the face. Refer to figure 7-6 to compare the differences of short and broad lighting.

Main Light Distance

The power or intensity of the main light is not the determining factor for the distance the main light is placed from the subject. It is the visual effect the light has on the subject that determines this distance. When the main light is too high and close to the subject, there

may be too much light falling on the forehead and not enough light falling on the lower part of the face. This effect can be improved by moving the main light farther away from the subject and placing it correctly.

Highlights on the forehead, the upper cheeks, the chin, and along the bridge of the nose are created by the main light. These highlights give life, brilliance, and form to a portrait, and the quality of these highlights are controlled by the main light distance.

To determine the main light distance, start with the light about 4 feet from the subject and about 2 feet above the subject's eye level. The light should be about a 45-degree angle to the lens axis. Observe the forehead highlight and move the light closer to the subject; as the light gets closer to the forehead, highlights spread out to a large, flat area and begin to wash out.

Now, start moving the main light away from the subject. As you slowly move it back, you will find there is a point where the forehead highlight becomes relatively small and bright. When the light is moved back much further from this point, the highlight spreads and disappears. Between the point where the highlight is brightest and where it starts to disappear lies the range where the highlight still has character. This point is where you get the most pleasing effect. Once you have found the distance where the main light gives your desired effect, the *distance* should remain the same regardless of the *direction* you need to move the light. This main light distance should always be considered as the *starting* point of portrait lighting.

Main Light Height

To determine the correct height for the main light, move the light directly in front of the subject while maintaining the distance determined for the forehead highlight. Raise or lower the light until the shadow cast by the nose is just long enough to touch the top edge of the upper lip. This is the height the main light should normally be no matter at what position you place it in an arc around the subject.

When your subject is wearing a hat with a visor, the visor shadow should fall naturally across the face. Many photographers think the shadow cast by the visor should not shade the eyes. The shadow from the visor *should* shade the eyes, however, in a portrait, this shadow should not be so dark that shadow detail is lost and the eyes are hard to see. To prevent this shadow from being too dark, raise the main light to the desired height, and instead of aiming it down at an angle, aim it straight.

This way the light is cast under the visor and prevents the shadow from becoming too dark

Main Light Direction

By the time you have determined the main light distance and the height for a given subject, you should have a pretty fair idea of the direction you want the main light to come from. To establish the direction from which this light should come, move the main light in an arc, to the right or left, around the subject. Remember, while moving the main light, its established distance and height should be maintained.

The shadow cast by the subject's nose is your key to main light direction. The light should be moved around until the shadow cast by the nose merges with the cheek shadow and leaves a small, triangular highlight on the cheek. When this is done, the main light is in position. Remember, the main light must always be the dominant, directional, shadow pattern forming light.

Fill-in Light

Once the main light has been established, the fill or fill-in light is added. This fill light is a secondary light and must not overpower the main light. Its purpose is to fill in and soften the shadow areas, making them lighter, and to provide shadow detail.

The fill light is normally placed slightly above the subject's eye level, on the opposite side of the camera from the main light and near the camera lens axis. The fill-in light should be less intense than the main light and of softer quality. This light is often diffused even when the main light is not.

By placing the fill light slightly above the subject's eye level, you can cast a shadow under the chin. This shadow separates the head from the neck. The chin shadow should be soft and unpronounced.

The intensity of the fill-in light can be controlled by either adjusting the power setting of an electronic studio light set or adjusting the light-to-subject distance. The fill light can be moved in an arc to the side of the subject and away from the camera. The fill light must not produce conflicting shadows (shadows that point toward the main light).

Catch Light

There should be a small, bright reflection of the main light in the eyes of the subject. This is a catch light. The catch light adds life and brilliance to a portrait and



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Figure 7-7.—Effect of background light.

gives the eyes sparkle. There should be only one catch light in each eye, and it should be high in the iris of the eye. For broad lighting, the catch light should be approximately in the 11 o'clock position. The main light for short lighting should create a catch light at approximately the 1 o'clock position.

Lighting Ratio

The lighting ratio for portraits should usually be about 3:1 or 4:1-3:1 is about maximum for good color portraits. To refresh your memory on how to establish lighting ratios, refer to chapter 5.

Background Light

The third light in studio portrait lighting is the background light. A background light is usually placed on a low stand midway between the background and the subject. When adjusted correctly, the background light provides good tonal separation between subject and background. The intensity of the light falling on the background should not normally be greater than the intensity of the light from the main light falling on the

subject's face. By increasing or decreasing the intensity of the light on the background, you can control the tone or color reproduction of the background in the finished print.

To reproduce the background color to its "true" color in a color print, it must receive the same amount of light as the subject's face. When taking portraits for use on a roster board, you want the tone and color of the background to be consistent. When the backgrounds vary in color, the roster board does not appear uniform, and the attention of the viewer is distracted.

When a background light is used, it is wise to position it before setting up any other light. It is easier to determine its effect without the interference of the main and fill light. The background light should be positioned so the brightest area of the light illuminates the background directly behind the head and gradually falls off into the corners of the frame (fig. 7-7). When the background light is set in this manner, it separates the head from the body and draws the viewer's attention to the subject's face.

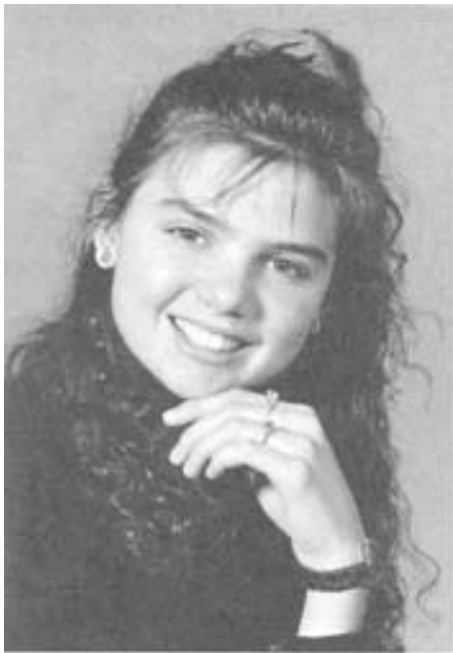
Hair Light

Once the main, fill, and background lighting is established, additional lights may be added to the setup. One such light is a hair light. A hair light is usually a small lighting unit placed on a boom so it shines down from above and behind the subject. It is used to lighten the hair (or hat) and shoulders, add detail to the hair, and separate the subject from the background, presenting the illusion of a third dimension (fig. 7-8).

The intensity of the hair light varies with the subject since it is dictated not only by the color of the person's hair (or hat) but also by the amount of sheen the hair has.

The hair light is usually placed on the side of the subject opposite the main light and behind the subject. It should be used from an angle about 6 to 8 feet high and from a position close to the center of the subject area without the light stand or boom showing in the picture. Light from this unit should not be allowed to spill over onto the forehead or tip of the nose. The hair light normally has a snoot attached so light from it does not strike the camera lens.

Be sure the hair light is turned off when making any exposure readings. This light does not affect your basic film exposure, but it could influence your meter.



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Figure 7-8.—Effects of hair light.

Flexibility of Three-Quarter Lighting

Three-quarter lighting can be used with almost any type of face. It is flexible because once it is set, the subject can move his head from full face to profile and the lighting remains good at any point you choose to pose the sitter. The degree of flexibility is determined by the type of light used (spot or flood) and the size and type of reflector used.

SIDE LIGHTING

With side lighting, the face is lit more intensely on one side than the other (fig. 7-9). This type of lighting is well suited for young women that have smooth skin and regular facial features, or for men whose rugged character lines should be emphasized. As a Navy Photographer's Mate, you will not normally use side lighting for official portraits. To learn more about side lighting, refer to the reference list in the back of this training manual.

BUTTERFLY LIGHTING

Butterfly lighting is often used when making portraits of women. To start, you can place the main light



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Figure 7-9.—Side lighting.



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Figure 7-10.–Butterfly lighting.

very close to the camera lens axis and about the subject's eye level. This creates a flat lighting, and facial feature characteristics can be lost. By moving the main light higher, you can create a certain amount of modeling. The light now creates a little modeling and is still very flattering and almost foolproof. This lighting is considered flattering because it does not emphasize lines or crowfeet around the eyes, wrinkles on the forehead, or shadows around the mouth. It does, however, emphasize eyes and eyelashes, especially in females.

The main light should be just high enough to cast a shadow of the nose about a third of the distance from the nose to the top edge of the upper lip (fig. 7-10). Each subject's face and nose is different, so the correct height for the main light varies slightly. When the subject has a long nose, the light should be low to shorten the shadow. When the subject has a short nose, raise the main light to lengthen the shadow. This has a secondary effect as well. It adds form below the eyebrow and accentuates any slight hollowness in the cheeks, giving a more provocative look.

When making a portrait of a person smiling, you must shorten the nose shadow because the upper lip draws up and the shadow goes over the lip. The nose

shadow should not extend over or touch the edge of the lip. When it does, the lip form is destroyed and it appears unnaturally small.

The main light-to-subject distance is again determined using the forehead highlight test.

The fill-in light is positioned directly below the main light-close to the camera lens axis and slightly above the subject's eye level. The intensity of this light should be about one f/stop less than the main light. The lighting ratio is established by moving the fill light closer to or farther away from the subject to increase or decrease its effect. Balance also can be controlled by using diffusion screens over the fill-in light.

Although not as flexible as three-quarter lighting, frontlighting does have some flexibility. The subject's head can be posed from full face to profile. However, the nose shadow must always remain under the nose. Therefore, the main light must be moved with the head; and as the head moves to the three-quarter or profile position, the hair light also must be moved. The fill light is not moved.

RIM LIGHTING

Rim lighting is often used when making profile portraits. Rim lighting is the same as backlighting, where the subject is lighted from behind causing the facial features of the profile to be highlighted (fig. 7-11). Some suggestions to use when taking profile portraits are as follows:

- In a profile portrait, when a person looks straight ahead, only the whites of the eyes are seen by the camera. This causes an undesirable effect. Instead have the eyes cheat-turn the eyes slightly toward the camera, without turning the head, to show enough of the iris so the eye can be seen as an eye, not a white ball.
- Have the subject's head tipped back slightly. This separates the chin from the far shoulder, gives a better neckline, and reduces the appearance of a double chin.
- Allow more space on the side of the picture toward which the eyes are looking. This allows the subject to "look" beyond the frame.

If you are interested in learning more about rim lighting, refer to the reference list in appendix III.



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Figure 7-11.—Rim lighting.

FULL-LENGTH PHOTOGRAPHS

Officers of the Navy and Naval Reserve, in grades CWO3 through CWO-5, or O-3 through O-8, must submit a full-length photograph of themselves before being selected for promotion to the next higher rank. Other special selection boards require a full-length photograph to be included in the applicant's package, such as the limited duty officer program, Sailor of the Year, and other programs in which a selection board process is used. Candidates for officer promotion and LDO or CWO selection boards should refer to *NAVPERS Manual*, 15560C, and *NAVMILPERS-COMINST*, 1131.1A, respectively, for the most current information.

BACKGROUND

Since the studio setup is unique for full-length photographs, they should be scheduled at a time other than that of normal head-and-shoulders portraits. The background for full-length photographs must be a contrasting color from the uniform of the subject. Normally, white seamless paper is used because it provides the best results.

When white seamless paper is used for full-length portraits, it must drape down and provide enough coverage for the subject's head and extend to the deck so the subject is standing on it. You should protect the background from footprints and tears by laying down a protective material, such as paper or acetate.



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Figure 7-12.—Full-length photograph.

LIGHTING

When lighting a full-length portrait, you must light the entire body of the subject evenly and not allow objectionable shadows to show on the final product. This is best achieved when the subject is lighted with light diffused from two umbrellas. The background can be evenly lighted with two background lights. You should always conduct tests to determine the best lighting setup for your studio equipment and facilities.

POSE AND COMPOSITION

The full-length officer portrait must be a three-quarter view with the left shoulder forward. For officer promotion photographs, the prescribed uniform is summer khakis (summer whites where summer khakis are not authorized) and dress blues for LDO or CWO applications. All subjects will be uncovered unless otherwise stated in the applicants appropriate instruction. A menu board or hand-lettered title board must be placed at the subjects feet and be legible in the final photograph. The subject should be

centered both horizontally and vertically in the photograph (fig. 7-12).

The best camera and film to use for a full-length photograph is a 4x5 camera and a Polaroid 4x5 film back. When this combination is used, the customer can leave the studio with the final product. Any camera or imaging system can be used, depending on your imaging facilities capabilities, providing that two 4x5-inch prints are furnished to the customer.

CORRECTIVE TECHNIQUES

The primary goal in portrait photography is to present the subject in a favorable and flattering manner. Your most difficult problem is combining the pose, lighting, and camera viewpoint to show your subject to

best advantage. Because the photogenic qualities of each person's face vary, certain corrective techniques in posing, lighting, and camera heights can be used to help depict the subject favorably and improve the quality of the portrait. Changing the camera viewpoint, combined with proper lighting and pose, can create amazing alterations in the pictured appearance of any face. Table 7-1 shows corrective techniques and ways they can be used to correct common problem areas.

EXPOSURE CALCULATION FOR STUDIO PORTRAITS

Normally, the exposure for portraits should be based on the fill light alone as measured at the subject position. The fill light is the single source of illumination to the shadow areas and image detail in the shadow areas.

Table 7-1.—Corrective Treatments

Problem	Treatment
Fat, round face	Shoot three-quarter view, light side of face away from camera Use three-quarter or side lighting
Thin face	Shoot front, full face Use low three-quarter or side lighting
Wide forehead	Use low-camera viewpoint Tilt chin upward
Narrow forehead	Use high-camera viewpoint
Baldness	Use low-camera viewpoint Little or no hair light Blend head with background
Eyes close together	Shoot three-quarter pose
Eyes far apart	Shoot three-quarter pose
Small eyes	Shoot three-quarter pose Use three-quarter lighting so the eyes are in shadow
Large or protruding eyes	Use high three-quarter lighting Lower eyes slightly
Deep set eyes	Low-camera viewpoint Use frontlighting to keep eyes out of shadow
Uneven eyes	Turn head toward one side so natural perspective eliminates uneven appearance
Bags under eyes	Use makeup. Use frontlighting
Cross eyed or defective eye	Turn head so bad eye is away from camera. Light side of face toward camera to place other eye in shadow

Table 7-1.–Corrective Treatments–Continued

Problem	Treatment
Glasses	Use high front, three-quarter, or side lighting to eliminate reflections Raise the temple piece up slightly to angle lenses down lilt head downward Shoot full-face pose to prevent lenses from splitting cheek line Use indirect diffused lighting
High cheeks	Use low front or side lighting
Wide cheeks	Shoot three-quarter pose
Small ears	Turn head so camera sees only one ear Place exposed ear in shadow
Large ears	Turn head so camera sees only one ear Place exposed ear in shadow
Protruding ears	Turn head so camera sees only one ear Place exposed ear in shadow Shield light from exposed ear Blend ear into background
Long nose	Use low-camera viewpoint Use three-quarter or side lighting Apply dark makeup to tip of nose
Short nose	Use high-camera viewpoint Use frontlighting
Hooked nose	Shoot from a low-camera viewpoint Shoot front, full face
Crooked nose	Shoot from the side to which it curves Turn head until highlight along ridge of nose appears straight
Broad nose	Pose head away from a front view
Narrow mouth	Use lip color to extend lip line Turn head to one side so makeup is not apparent Position modeling light high to cast shadows at ends of lips
Wide mouth	Pose head in three-quarter view
Protruding lips	Use low-modeling light to eliminate shadow under lips
Thin lips	Fill out with lip color
Uneven mouth	Pose head in three-quarter view
Bad teeth	Do not have subject smile
Buck teeth	Subject may smile slightly Use full, front pose
Long chin	Use high-camera viewpoint

Table 7-1.–Corrective Treatments–Continued

Problem	Treatment
Double chin	Keep chin in shadow Have subject lean forward and look at camera
Small chin	Use full, front pose Use low-camera viewpoint
Square face	Use high-camera viewpoint
Oval face with a weak chin	Use low-camera viewpoint
Short neck	Use low-camera viewpoint
Long neck	Use high-camera viewpoint Keep neck in shadow
Facial blemishes	Keep in shadow Turn bad side of face from camera Apply makeup to a pimple or sore spot

When the exposure is based on the illumination intensity of the main light, the indicated f/stop produces underexposed shadow areas of the negative. With black-and-white negative film, the underexposure to the shadow areas may not be enough to cause loss of shadow detail. This is because of the greater exposure latitude and film processing latitude of black-and-white film compared to color negative film. With color negative film, however, underexposure to the shadow areas may cause loss of shadow detail and a color shift in the shadow areas that is uncontrollable in printing. Remember, basing your portrait exposure on the fill light alone applies only when the lighting ratios are within about a 2:1 to 4:1 range. Beyond a 4:1 lighting ratio, you may have to calculate your exposure based on both the main and fill lights.

PASSPORT PHOTOGRAPHS

Passport photographs should only be provided to United States military personnel, their dependents, and employees of the federal government when required for executing official orders. Providing such photography for purposes and to individuals other than this is an infringement of the rights and commercial enterprise and may violate U.S. Navy Regulations.

Passport photographs are normally taken on Polaroid film with a camera designed for passport photographs. The photographs must portray a good

likeness of, and satisfactorily identify the applicant. Passport photographs must meet the following requirements:

- Photographs must be 2x2 inches in overall size. The image size, measured from the bottom of the chin to the top of the head (including hair), shall be not less than 1 inch or more than 1 3/8 inches. A quick method to determine the correct image size is the head should fit inside the frame of a 35mm slide mount.
- Passport photographs may be in color or black and white. Black-and-white photographs that have been tinted or otherwise colored are not acceptable. Prints which have been retouched to the extent that the applicant's appearance has been changed are also not acceptable. However, prints that have been retouched merely to eliminate shadows and lines are acceptable.
- Photographs that depict the applicant as relaxed and smiling are encouraged. Photographs should be portrait-type prints, meeting the size and image specifications listed above. Photographs must be clear, front view, full face, with a light, plain background.
- A passport photograph serves to identify the passport applicant. When glasses, a hearing aid, a wig, or similar articles are normally worn, these

articles should be worn when the photograph is made. Dark glasses with tinted lenses are not acceptable, unless required for medical reasons.

- Photographs should be made in normal street attire without a hat or other headgear that obscures the hair or hairline. Only applicants in the active service of the armed forces and who are proceeding abroad in the discharge of their official duties may submit photographs in the uniform of the U.S. Armed Forces. Other uniforms should not be worn in passport photographs.
- Photographs should be able to withstand temperatures up to 225°F (107°C) for 30 seconds.
- Photographs must be printed on thin paper so the seal and legend can be applied to the photograph.
- Automatic and self-developing prints are acceptable for passport photographs, providing they meet all other photographic specification. SX-70 and black-and-white Polaroid prints are not acceptable.

- Matte- or dull-finished photographs are preferred, but shiny or glossy prints may be accepted, provided the signature ink will stick to the surface of the photograph. Matte or other sprays designed to produce a dull or nonglossy finish should not be used.

PERSONNEL IDENTIFICATION PHOTOGRAPHY

The requirement for speed in identification photography makes it impractical to produce the same quality expected in portrait work. However, with a little attention to the details of lighting, posing, and exposure, high-quality photographs can be provided.

Occasionally, a profile or three-quarter view may be required for naturalization photographs. However, most identification photos are made with the subject facing the camera and looking straight into the lens. Since identification photographs must reveal as much facial detail as possible, very few are flattering pictures.

CHAPTER 8

COPYING

The term *copying*, as used in photography, means producing a photograph from a photograph, map, painting, or similar flat document. A document that is copied is called the “copy original” or “original,” and the products of the copying process are called “reproductions*” or “copies.” Originals are broadly classed as reflection originals and transparent originals. The photographic reproduction can be any size in relation to the original document.

Copying is a large and important part of naval photography. It provides an important service to most every aspect of the Navy—from the Intelligence Specialist giving a training lecture, to the admiral who needs 100 copies of a map for planning an invasion.

Photographic copying is an accurate, inexpensive, and quick way of reproducing originals. Copying is skilled work and you must give it the same careful attention that you give to other types of photography. Making good photographic copies is an accomplishment any photographer can be proud of. A knowledge of copying techniques extends your skill as a Navy photographer and makes you more useful to yourself and the Navy.

The process of copying is complicated by the extensive variation in the type of originals to be copied and the varying conditions under which the work is done. The materials to be copied range from simple line drawings to transparencies that are used daily aboard ship and at shore stations. Films used for copy photography are processed much the same as films for other photography. They can be processed by hand, in trays and tanks, or processed by machine.

COPY TERMINOLOGY

Copying—Photographing flat documents, such as photographs, drawings, blueprints, charts, and so forth.

Original—Material from which copies are made, such as handwritten copy, typed copy, printed matter, tracings, drawings, and photographs.

Halftone—Reproduction by printing processes, such as lithography of a photograph in which the gradation of tone is reproduced by a pattern of dots and intermittent white spaces, caused by interposing a halftone screen between the lens and the film. (See fig. 8-1.)

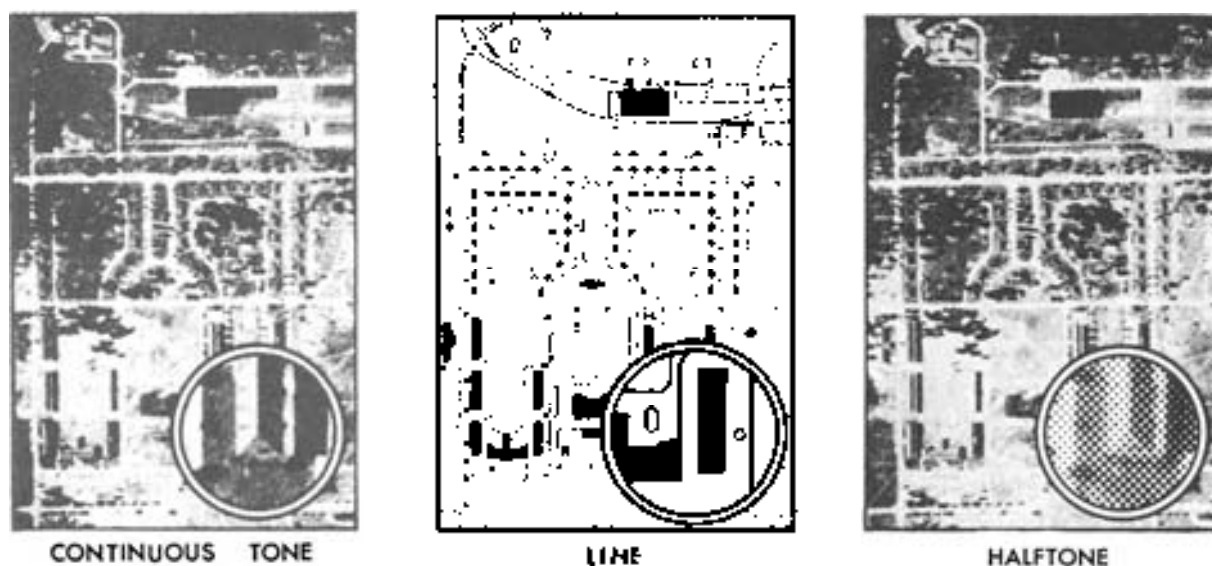


Figure 8-1.—Comparison of continuous tone, line, and halftone.

Line Original—A document or drawing consisting essentially of two tones (such as black and white, black and tinted, or brown and buff) without intermediate tones.

Continuous-Tone Original—Materials in which the detail and tone values of the subject are reproduced by an infinite gradation of gray densities between white and black

Copy Negative—A photographic film negative made as an intermediate from which prints are made.

Reproduction—The duplication of original copy by any photographic process.

Copyboard—The board, easel, frame, or other device for holding originals to be copied.

Reflex Copying—A method of contact printing in which light passes through the sensitized paper and emulsion, strikes the material being copied, and reflects back to the emulsion, producing a reversed reproduction of the original.

Restoration—Copying old, faded, or damaged material to produce a more presentable or legible copy.

Duplicating—Producing copies of negatives or slides for use instead of the originals.

Intermediate Positive—A positive transparency of a negative used for making more negatives.

Intermediate Negative (Interneg)—A negative made from a positive transparency that is then used to make reflection prints.

COPYRIGHT

On January 1, 1978, a new copyright statute came into effect in the United States. Some highlights from the law are given here. For specific details about the law or to gain copies of the statute and regulations, send a specific written request to the following: Copyright Office, Library of Congress, Washington, DC 20559.

Copyright Protection

Copyright is a form of protection provided by the laws of the United States to the authors of “original works of authorship” including photographs. This protection is available to both published and unpublished works. The Copyright Act generally gives the owner of the copyright the exclusive right to do and to authorize others to do the following:

- To reproduce the copyrighted work

- To prepare *derivative works* based upon the copyrighted work
- To distribute copies of the copyrighted work to the public by sale or other transfer of ownership or by rental, lease, or lending
- To display the copyrighted work publicly in the case of literary, musical, dramatic, and choreographic, or sculptural works, including the individual images of a motion picture or other photographic work

It is illegal for *anyone* to violate the rights provided to an owner of a copyright. These rights, however, are not unlimited in scope. The Copyright Act establishes limitations on these rights. In some cases, these limitations are specified exemptions from copyright liability. Generally however, it is unlawful to reproduce, without written consent of the copyright owner, any material bearing a notice of copyright. The guiding rule in copying is to secure written permission from the copyright owner before starting work

What Is Protected

Copyright protection exists for original works of authorship when they become fixed in a tangible form of expression. The fixation does not need to be directly perceptible, so long as it may be communicated with the aid of a machine or device. Copyrightable works include the following categories:

- Literary works
- Musical works, including any accompanying words
- Dramatic works, including any accompanying music
- Pantomimes and choreographic works
- Pictorial, graphic, and sculptural works
- Motion pictures and other imaging works and sound recordings

This list is illustrative and is not inclusive of the categories of copyrightable works. These categories should be viewed quite broadly.

What Is Not Protected

Several categories of material are generally not eligible for statutory copyright protection. Among others include the following:

- Works that have not been fixed in a tangible form of expression
- Titles, names, short phrases, and slogans; familiar symbols or designs; mere variations of typographic ornamentation, lettering, or coloring; mere listings of ingredients or contents
- Ideas, procedures, methods, systems, processes, concepts, principles, discoveries, or devices, as distinguished from a description, explanation, or illustration
- Works consisting *entirely* of information that is common property and containing no original authorship; for example: standard calendars, height and weight charts, tape measures and rules, and lists or tables taken from public documents or other common sources

Copyright Secured Automatically upon Creation

The way that copyright protection is secured is frequently misunderstood. No publication or registration or other action in the Copyright Office is required to secure a copyright under the law. Copyright is secured *automatically* when the work is created, and a work is “created” when it is fixed in a copy or imaging recording for the first time. In general, “copies” are material objects from which a work can be read or visually perceived either directly or with the aid of a machine or device, such as books, manuscripts, sheet music, film, videotape, or microfilm. Phonograph records are material objects embodying fixations of sounds (excluding, by statutory definition, motion picture sound tracks), such as audio tapes and phonograph disks. Thus, for example, a song (the “work”) can be fixed in sheet music (copies) or in audio recordings, or both.

Notice of Copyright

When a work is published under the authority of the copyright owner, a notice of copyright should be placed on all publicly distributed copies. This notice is required even on works published outside of the United States. Omission or errors will not necessarily result in forfeiture of the copyright. Therefore, just because a copyrightable material does not have a copyright notice does not mean it is not copyrighted. However, infringers misled by the omission or error of copyright notice will be shielded from liability.

How Long Copyright Protection Lasts

The copyright law changed in 1978. The time that the copyright on original material expires is determined by when it was created.

WORKS ORIGINALLY COPYRIGHTED ON OR AFTER JANUARY 1, 1978.—A work that is created (fixed in tangible form for the first time) on or after January 1, 1978, is automatically protected from the moment of its creation. It is ordinarily given a term enduring for the author’s life, plus an additional 50 years after the author’s death. In the case of a joint work prepared by two or more authors that did not work for hire, the term lasts for 50 years after the last surviving author’s death. For works made for hire and for anonymous and pseudonymous (fictitious name) works (unless the author’s identity is revealed in Copyright Office records), the duration of copyright is 75 years from publication or 100 years from creation, whichever is shorter.

Works that were created before the 1978 law came into effect, but were neither published nor registered for copyright before January 1, 1978, have been automatically brought under the statute and are now provided federal copyright protection. The duration of copyright for these works is generally computed in the same way as for new works: the life plus 50 and the 75 or 100 year terms apply to them as well. However, all works in this category are guaranteed at least 25 years of statutory protection.

WORKS COPYRIGHTED BEFORE JANUARY 1, 1978.—Under the law in effect before 1978, copyright was secured either on the date a work was published or on the date of registration if the work was registered in unpublished form. In either case, the copyright endured for a first term of 28 years from the date it was secured. During the last (28th) year of the first term, the copyright was eligible for renewal. The new copyright law has extended the renewal term from 28 to 47 years for copyrights that were still in existence on January 1, 1978.

International Copyright Protection

There is no such thing as an “international copyright” that will automatically protect an author’s writings throughout the entire world. Protection against unauthorized use in a particular country depends, basically, on the national laws of that country. However, most countries do offer protection to foreign works under certain conditions, and these conditions have been greatly simplified by international copyright treaties and conventions.

The United States is a member of the Universal Copyright Convention (UCC). Generally, a work by a national or resident of a country that is a member of the UCC, or a work first published in a UCC country, may claim protection under the UCC.

Works of the United States Government

Works produced for the U. S. Government by its officers and employees as part of their official duties are not subject to U.S. copyright protection. The law makes it clear that this prohibition applies to unpublished works as well as published ones.

Fair Use

U.S. copyright laws specifically recognizes the principle of “fair use” as a limitation on the exclusive rights of copyright owners. The law considers factors in determining whether particular uses fall within this category. Listed below are the minimum standards of educational fair use of copyrighted works under the law. The guidelines are not intended to limit the types of copying permitted under the standards of fair use.

I. SINGLE COPYING FOR TEACHERS:

A single copy may be made of any of the following by or for a teacher at his or her individual request for his or her scholarly research or use in teaching or preparation to teach a class:

- A. A chapter from a book
- B. An article from a periodical or newspaper
- C. A short story, short essay, or short poem whether or not it is from a collective work
- D. A chart, graph, diagram, drawing, cartoon, or picture from a book, periodical, or newspaper.

II. MULTIPLE COPIES FOR CLASSROOM USE:

Multiple copies (not to exceed in any event more than one copy per pupil in a course) may be made by or for the teacher giving the course for classroom use or discussion *provided that*:

- A. The copying meets the test of brevity and spontaneity as defined below; and,
- B. Meets the cumulative effect test as defined below; and,
- C. Each copy includes a notice of copyright.

III. PROHIBITIONS AS TO I AND II ABOVE:

Notwithstanding any of the above, the following shall be prohibited:

A. Copying shall not be used to create or to replace or substitute for anthologies, compilations, or collective works. Such replacement or substitution may occur whether copies of various works or excerpts therefrom are accumulated or are reproduced and used separately.

B. There shall be no copying of or from works intended to be “consumable” in the course of study or of teaching. These include workbooks, exercises, standardized tests, and test booklets and answer sheets and like consumable material.

C. Copying shall not:

- 1. substitute for the purchase of books, publisher’s reprints, or periodicals;
- 2. be directed by higher authority; and
- 3. be repeated with respect to the same item by the same teacher from term to term.

D. No charge shall be made to the student beyond the actual cost of the photocopying.

Each Navy photo lab should have a copy of SECNAVINST 5870.5, *Permission to use Copyrighted Materials in the Department of the Navy*. All Photographer’s Mates should be familiar with its general content. It should be the basic instruction you should use when the question of copyright comes up. Here are a few excerpts from the instruction:

“As a general proposition, copyrighted works may not be used without permission of the copyright owner. Unauthorized use is a copyright infringement, . . . the U.S. Government has no general exemption from copyright infringement liability. Government employees are not, however, personally liable for copyright infringement occurring in the performance of their official duties.”

“ . . . it is a criminal offense to remove or alter any notice of copyright appearing on a . . . copyrighted work, . . . ”

COPY RESTRICTIONS

Federal laws regulating photography are intended to prevent counterfeiting and fraud and are located generally in Title 18 of the United States Code.

Designated government officials are charged with safeguarding the nation’s currency. It is the belief of the United States Secret Service that granting permission to photograph and reproduce pictures of money, in color,

DEFINITIONS:

Brevity :

1. Poetry: (a) A complete poem if less than 250 words and if printed on not more than two pages, or (b) from a longer poem, and an excerpt of not more than 250 words.

2. Prose: (a) Either a complete article, story, essay of less than 2,500 words, or (b) an excerpt from any prose work of not more than 1,000 words or 10% of the work, whichever is less, but in any event a minimum of 500 words.

Each of the numerical limits stated in 1 and 2 above may be expanded to permit the completion of an unfinished line of a poem or of an unfinished prose paragraph.

3. Illustration: One chart, graph, diagram, drawing, cartoon or picture per book or per periodical issue.

4. "Special" works: Certain works in poetry, prose, or in "poetic prose" that often combine language with illustrations and which are intended sometimes for children and at other times for a more general audience that fall short of 2,500 words in their entirety. Paragraph 2 above notwithstanding such special works may not be reproduced in their entirety; however, an excerpt comprising not more than two of the published pages of such special work and containing not more than 10% of the words found in the text thereof, may be reproduced.

Spontaneity:

1. The copying of the material is for only one course in the school in which the copies are made.

2. Not more than one short poem, article, story, essay or two excerpts may be copied from the same author, nor more than three from the same collective work or periodical volume during one class term.

3. There shall not be more than nine instances of such multiple copying for one course during one class term.

The limitations stated in 2 and 3 above shall not apply to current news periodicals and newspapers and current news sections of other periodicals.

seriously weakens the safeguards designed to protect our currency.

As a Navy Photographer's Mate, you may be asked to copy United States and foreign financial certificates, such as obligations and securities. These may be needed for anything from the station newspaper to criminal investigations.

Provided below is information and conditions under which you are permitted to make copies of United States and foreign obligations and securities.

Paper Money, Checks, and Bonds

Printed illustrations of paper money, checks, bonds, and other obligations and securities of the United States and foreign governments are allowed for educational, historical, and newsworthy purposes. Illustrations must be in black and white and must be less than 3/4 or more than 1 1/2 times the size of the genuine original. No individual facsimiles of such obligations are permitted, and no illustrations of paper money, checks, or bonds may be in color.

To be permissible, an illustration must be accompanied by educational, historical, or newsworthy information relating directly to the item that is illustrated. Illustrations used primarily for decorative or eye-catching purposes are not allowed.

Motion-picture film and slides of paper money, checks, bonds and other obligations and securities of the United States and foreign governments are permitted in black and white or in color for projection upon a screen or for use in telecasting. Treasury regulations permit the illustration of United States bonds in connection with a campaign for the sale of such bonds.

United States and Foreign Postage Stamps

Printed illustrations of canceled and uncanceled United States postage stamps are permissible for articles, books, journals, newspapers, educational, historical, and newsworthy purposes.

Black-and-white illustrations may be of any size. Colored illustrations of canceled United States postage stamps may be of any size. However, illustrations in color of uncanceled United States postage stamps must be less than 3/4 or more than 1 1/2 times the size of the genuine stamp.

Printed illustrations of canceled foreign stamps in black and white or color are permissible in any size and for any purpose.

Black-and-white and color illustrations of uncanceled foreign postage stamps are permitted for educational, historical and newsworthy purposes,

Black-and-white illustrations may be of any size, but color illustrations must be less than 3/4 or more than 1 1/2 times the size of the genuine stamp.

Motion picture films and slides of the United States and foreign postage stamps are permissible in black and white or in color for projection upon a screen or for use in telecasting.

Revenue Stamps

Regulations for printed illustrations of United States and foreign revenue stamps are the same as for postage stamps, except colored illustrations of United States revenue stamps are not permitted.

Coins

Photographs or printed illustrations, motion-picture film or slides of the United States and foreign coins may be used for any purpose.

With few exceptions, existing law generally prohibits the manufacture, sale or use of any token, disk, or device in the likeness or similitude of any coins of the United States or of any foreign country that are issued as money.

Title 18, U.S. Code, Section 481

Whoever, except by lawful authority as described in the foregoing, prints photographs, or makes, executes, or sells any engraving, photograph, print, or impression in the likeness of any genuine note, bond, obligation, or other security, or any part thereof, of any foreign government, bank, or corporation, shall be fined not more than \$5,000 or imprisoned not more than 5 years, or both.

Destruction of Prints and Negatives

The negatives and prints of any United States obligation or foreign obligations produced for any of the purposes mentioned previously in this chapter must be destroyed after their final use.

COPY EQUIPMENT

The amount and type of copy work performed in an imaging facility should be the basis for the types of copy equipment on hand. When expensive equipment is not justified or available, a 35mm camera and the sun can be used for copying; however, the best results are obtained when cameras and equipment designed for copying are used.

Copying with a 35mm Camera

When making slides or only when an occasional copy job is requested, a 35mm camera should be used. Copy stands are available for use with 35mm cameras. (fig. 8-2) A set of lights may be mounted on the stand. When lights



302.180X

Figure 8-2.—Copy Stand.

are not provided with the copy stand, regular studio lights can be used in their place.

When a copy stand is not available for use with a 35mm camera, the camera can be used on a tripod, mounted for either horizontal or vertical copying. For vertical copying, the tripod elevator post is removed and inserted into the tripod upside down. The camera is then mounted under the tripod, and the tripod is then centered over the original to be copied.

Cameras for Copying Large Originals

When the copy work done in your lab is considerable and includes many large originals, the type of copy setup used by the graphic arts shops may be needed.

The type of camera used in graphic arts photography is called a process camera. Although larger than other types of cameras, it is similar in principle. Since the

process camera is built for copying, it has a copyboard and other features not associated with the average camera. There are two types of process cameras: horizontal and vertical.

Most horizontal process cameras are known as darkroom cameras because the camera back is built into the darkroom wall. Because the back of the camera extends into the darkroom and the front is housed in a separate room, you can load the film, focus the camera, make the exposure, and develop the film without leaving the darkroom. Of course, it is necessary for you or a helper to go outside to place copy in the copyboard before the exposure is made.

In recent years, vertical process cameras have become more popular because they take up much less floor space. This makes them especially useful aboard ship.

CAMERA ADJUSTMENTS.—Each copy camera has slightly different adjustments. You should consult the operating manual of your copy system to learn the proper operation and controls of your particular system. Only the minimum basic components of a copy system are discussed in this chapter.

GROUND GLASS FOCUSING.—Ground glass focusing is essential for exacting copy work. The image of a document viewed on the ground glass of a copy camera provides a means of monitoring all aspects of the image as it will appear in the reproduction. This includes image placement, image size, and any apparent unwanted reflections.

BELLOWS EXTENSION.—A copy camera should be capable of a bellows extension of at least two, and preferably three times or more the focal length of the lens being used. With a 3-inch lens and a bellows extension of two focal lengths (6 inches) and the original is positioned four focal lengths (12 inches) from the film plane, a 1:1 ratio of the original size to reproduction size is obtained. A reproduction with a 1:1 ratio can be referred to as “life size.” A bellows extension that is less than two focal lengths cannot produce an image as large or larger than the original. A bellows that can be extended more than two focal lengths can produce an image larger than the original.

LENSES FOR COPYING

A primary requirement for a lens used for copying is that it must focus sharply across a flat plan; that is, it must produce a sharp image over its entire field of view—all the way out to the edges of the image. In copying, the original has only two dimensions, and the loss of definition at the edges of the image is much more serious than it would be when photographing a three-dimensional subject.

Regular camera lenses of good quality can produce fair to good copy negatives. But most lenses for general photography are designed to focus at a flat field for distances greater than eight times the focal length. Since most copy work is done at close distances, the image field is not sharp because of the curvature of the general lens. This effect can be compensated for by stopping down the lens. However, because of the high degree of diffraction at small apertures, stopping down reduces the overall sharpness of the image. For critical copy work, such as when copying large, detailed originals, a lens designed for copying should be used. Such lenses, called process lenses, produce the best image at a lens-to-subject distance of about 10 feet or less.

Another very important aspect of a process lens is its evenness of illumination across the focal plane. Evenness of illumination across the entire negative is particularly important when copying line originals. The high-contrast films used to copy line originals have a short exposure latitude and any falloff in illumination results in obvious variations in exposure between the edges and the center of the negative.

For each lens there is an optimum aperture at which the lens produces the best image definition. For copy work, this optimum aperture should be used whenever possible. Since originals to be copied are flat or almost flat, an increase in depth of field by stopping down from the optimum aperture is not required or desired. With some lenses, especially process lenses, the optimum aperture and maximum aperture are the same. Generally, however, the optimum aperture is two full f/stops smaller than the maximum f/stop.

Most process lenses available today are apochromatic. They are designed to be free of chromatic aberrations; that is, they focus sharply all three primary colors in the same plane. Apochromatic lenses must be used for critical work in color copying and duplication.

Since exposure times in copy work are relatively long (i.e., seconds as compared to hundredths of a second), a lens equipped with a means of holding the shutter open is required. Your copy system must be completely free of vibration to obtain sharp images. For these long exposures, you must use the T and B settings and a cable release.

The focal length of a lens used for copying should be governed primarily by the size of the negative to be produced. For example, the focal length should be about equal to the diagonal measurement of the negative to be made. Therefore, when you are making 35mm negatives, use about a 1 3/4-inch or 45mm lens; a 4.5 x 6cm negatives, use a 3-inch or 75mm lens; and for 4 x 5 negatives, use a 6 1/4-inch or 160mm lens; and so on. In any case, you should use a lens that is longer than the film diagonal rather than a lens that is shorter. This way, you are taking advantage of the flatter field that is produced in the center area of the circle of illumination. A macro lens should be used when available because it is designed to produce sharp images at close planes.

COPYBOARD

Copyboards are an integral part of a copy system. The function of a copyboard is to hold the original flat and perfectly parallel to the lens and camera back. When the copyboard is not parallel, distortion results, and it

becomes difficult to get the entire subject in sharp focus. In some cases, the copyboard of the camera is a bed with a hinged glass cover. The original to be copied is placed on the bed and the glass cover is closed. When the cover is closed, the bed squeezes the original against the glass cover to flatten and hold it in place.

Reference lines are generally marked on the felt or rubber surface of the copyboard to aid in centering and aligning the copy. When the copyboard does not have these lines, draw your own on the copyboard or on a piece of paper and fasten it to the copyboard.

Some copyboards have a vacuum pump that provides suction to hold the copy flat to the copyboard. This eliminates the need for a glass cover. After the copy is placed on the copyboard, the pump is turned on and the vacuum holds the original in place.

When the copyboard does not have a vacuum pump or glass cover, originals can be held in place with pushpins. When it is not permissible to put holes in the edges of the original, then double-sided tape may be an alternative. When the copyboard is made of steel, the original can be held in place with bar magnets.

When a camera is not equipped with a copyboard and for occasional work, a copyboard can be made from a sheet of softwood or cork. The surface should be painted flat black, never white. A white, or even light-colored copyboard, reflects too much light into the camera lens, causing flare and troublesome reflections. Flare causes a loss in contrast and extra compression of the shadows. A black copyboard minimizes flare.

Always keep the glass of a copyboard clean. Dust it with a clean camel-hair brush and clean it with a soft cloth and glass cleaner. Never use dirty rags or razor blades to clean the glass. They may scratch it. When you have to scrape the glass, use your fingernail or an orange stick.

LIGHTING EQUIPMENT

Almost any type of light can be used for copy work, provided the intensity of the light is enough to prevent excessively long exposures. Another principle requirement of the light source is to produce a light with a color temperature suitable for the type of film being used.

Tungsten Lamps

Tungsten lamps 3200 K and 3400 K are suitable for normal black-and-white copy work. When a reflector type of bulb is used, the need for external reflectors is

eliminated. A lens shade should be used with a reflector type of bulb because the built-in reflector does not extend the full length of the bulb, and stray light may reach the lens and cause flare.

Lamps such as 3400 K are not as economical to use as 3200 K lamps because of their short life (4 to 6 hours).

Fluorescent Lights

When fluorescent tubes are used to light an original, they should be arranged to form a square—the sides of which are parallel to the edges of the copyboard. The size of the tubes and their distance from the copyboard are governed by the size of the original to be copied. Because this type of lighting setup is not easy to adjust, it is best used when the size of the originals to be copied does not vary much from one to another. Because of its diffused nature, fluorescent lighting is suitable for copying originals with a textured surface that must be eliminated in the finished print. Regular fluorescent lights should not be used when shooting color film because it is difficult to color correct them accurately. Special fluorescent lamps with a high color-rendering index (CRI) should be used whenever possible. When ordinary fluorescent lamps are used, consult the *Photo-Lab-Index* to determine what filter should be used as a starting point for the type of film you are using.

Electronic Flash

When used properly, electronic flash units are an excellent light source for copy photography. An electronic flash unit allows for extremely short exposures that can be helpful for shipboard photolabs when the ship is underway. The flash unit is balanced for daylight color film and does not produce the heat associated with tungsten or quartz bulbs.

Unless specifically designed for copy work and attached to the copyboard, electronic flash lamps may be difficult to position for proper illumination of the original. The task can be made easier if you use studio electronic flash units with built-in tungsten modeling lights. With this type of lighting unit, the modeling light can be used to position the lights accurately for even illumination of the original. Even with this, the light may have to be heavily diffused to prevent “hot spots.” A hot spot is a surface area that receives too much light, causing an unwanted reflection that is noticeable in the final copy product.

Quartz-Iodine Lamps

The quartz-iodine lamps (tungsten-halogen) are of the incandescent variety but bear little resemblance to conventional light bulbs. A quartz lamp is a short tube of quartz glass, housing a coiled filament that runs the length of the tube. In ordinary tungsten lamps, the tungsten evaporates from the filament and settles on the glass and gradually darkens the bulb. In the quartz-iodine lamp, however, iodine vapor combines chemically with the tungsten and causes it to redeposit on the filament. This prevents the tube from becoming tarnished with age. The intensity and color temperature of the tube remain almost constant throughout its life. Although the quartz-iodine lamp is very small, it produces intense light that is particularly suited for copy work. There is a disadvantage-quartz-iodine lamps generate extreme heat that could cause your original to curl. You should never touch a quartz-iodine lamp with your fingers. The oil from your hands can create a concentrated hot spot on the lamp, causing it to bubble and burn out.

LAMP REPLACEMENT.—As lamps get older, their color characteristics and light intensity may change. Therefore, when one lamp in a set burns out, the new replacement lamp is usually brighter and has a different color temperature than the remaining lamps. You should replace all the lamps, not just one to avoid the need for adjusting the new lamp to get even illumination. Replacement of all lamps in a set is particularly important when you are copying with color film because the color temperature of the new lamps is higher than the old lamps. The variation in color temperature would be seen as an uneven color quality over the resulting reproduction.

VOLTAGE VARIATIONS.—Fluctuations in the voltage or electric current affect the color temperature of copy lights. When the voltage to your copy lights varies, consult an electrician. The electrician can trace the source of fluctuation and recommend the best action to overcome the problem.

Parabolic Reflectors

An important element of the lighting equipment for copy work is the reflectors. Parabolic reflectors should cause the light to be evenly distributed over the surface area of the original and not cause hot spots. Certain types of lights, such as reflector photoflood lamps, have built-in reflectors. By use of the correct reflectors with artificial light sources, exposure times can be shortened.

Daylight

Daylight can be another excellent source of illumination for copying. When the sun is used, you should try to use the sun during the midday hours where a combination of daylight and skylight is present, because of the shifting of color temperature throughout the day. The early morning and evening hours should be avoided when color film is used, because the lack of blue light present. Heavy overcast skies or copying in shadow produces a bluish cast and should be avoided or corrected with a filter.

Filters

The use of filters was fully discussed in chapter 3. Both correction and contrast filters, as well as special filters, are used extensively in copy work

FILMS FOR COPYING

For copying, you can achieve the best results by selecting the correct film for the type of copy work to be done. Copy-type films are designed specifically to compensate for the compression that occurs in tone reproduction and it provides an improved highlight tonal separation. Copy films are available only in 70mm and sheet film formats. Although 35mm film can provide acceptable results, you should use sheet film since it provides higher-quality enlargements and is easier to retouch.

Film characteristics, such as color sensitivity and contrast, are important when you select the film to copy a specific type of original. Film characteristics were discussed in chapter 2.

SELECTING THE PROPER FILM

The following factors should be considered when choosing the proper film:

- ◆ The color of the original to be copied
- The contrast of the original
- The contrast of the film
- ◆ The type of product to be produced, that is, black-and-white or color print, duplicate negative, color or black-and-white transparency, and so on
- Color quality of the light source
- Types of film available

- Color sensitivity of the film
- Filters available

Black-and-White Line Originals

A black-and-white line original has no middle or intermediate tones between the lines and background. Therefore, the best film for copying black-and-white line originals is one with extreme contrast, such as Kodak Kodalith film. These films produce high contrast and extremely high density with an absence of fog, which ensures clear lines on a dense background.

Kodalith type of films have a very limited exposure latitude, and therefore, must be given very accurate exposure. Underexposure produces low-contrast negatives that result in prints having a muddy gray background instead of a clear, crisp, white background. Overexposure causes weak or very fine lines to fill in and results in a less than perfect transparency of the lines on the negative.

Typewritten material should be included in this type of original. When an original is typed or printed on thin white paper and on one side only, you should place another sheet of white paper behind the original to copy it. This increases the reflective ability of the original and increases contrast. When the original is printed or typed on both sides of thin white paper, place black paper behind the original to help prevent the printing or type on the reverse side of the original from showing through.

Colored Line Originals

In copying colored line originals to a black-and-white reproduction, you must maintain the high contrast between the lines and the background. This is best achieved by using a high-contrast panchromatic film, such as Kodak Contrast Process Pan film and a filter. When the lines or subject is to be rendered light against a dark background, the filter should transmit the color of the subject and absorb the color of the background. When the subject is to be rendered dark against a light background, the filter should absorb the color of the subject and pass the color of the background.

For example, a blueprint has white lines on a blue background. Copying the blueprint with Kodalith Pan film without a filter cannot produce maximum contrast because the film is highly sensitive to blue light and thus records the image of the blue background as a midtone of gray while recording the white line image as a dense highlight. When a red filter is used, the white lines still record as a dense highlight on the negative, but now the

blue background records as a shadow area because the red filter absorbs the blue light reflected from the blue background. Thus the background reproduces darker when a red filter is used.

Black-and-White Continuous-Tone Originals

To reproduce the tone gradation of a continuous-tone original, you must use a long-scale film. As discussed previously, a commercial type of film, such as Kodak Commercial film, is recommended.

The common fault in continuous-tone original copying is underexposure and overdevelopment. Full exposure with restrained development is the best rule for this type of work

Although appearing as line originals, handwritten material, pencil drawings, and so forth, are actually continuous-tone originals because of the midtones they contain. These should be copied as continuous-tone originals. Films, such as Kodak Professional Copy film or Kodak Commercial film, are recommended.

Colored Originals

When a black-and-white reproduction of multicolored reflection originals, such as color photographs, oil paintings, and so forth, is to be made, it should be copied with a moderate contrast, panchromatic film capable of recording numerous shades of gray. Panchromatic, long-scale film is recommended for copying this type of color original.

Colored originals are almost limitless in their degree of difference because of all the possible colors and hues. Each different colored original should be copied on the basis of what is desired in the black-and-white reproduction.

Color Reproduction of Color Originals

Selecting a film for copying colored reflection originals to make color reproductions is a matter of what type of reproduction is needed—reflection or transparency. Films, such as Kodak Vericolor III Professional Film Type L and Type S and Vericolor Internegative Film, can be used to produce color reflection copies. Color transparency film must be used to produce color transparencies from reflection originals. Some films have a different recommended ISO rating when used with tungsten or daylight light sources. Be sure to consult the data sheet supplied with the film or the *Photo-Lab Index* to determine the proper ISO setting.

When you are copying a color print to a color negative, the best film to use is Kodak Internegative film. Because of the inherent high contrast of photographic papers, if not controlled, contrast is gained in each generation of a reproduction. Kodak Internegative film is designed to give greater contrast separation in the highlights without raising the overall subject contrast in the negative. To achieve proper color balance in the shadows, midtones, and highlights, you must perform tests to assure that proper exposure and color filtration is obtained. The *Photo-Lab Index* contains the procedures necessary to accomplish this testing.

Combined Black-and-White Line and Continuous-Tone Originals

When a black-and-white original contains both line and continuous-tone matter, the ideal copy method is to copy each type of matter with an appropriate film separately and then sandwich the two negatives together, or print the two negatives separately on the same piece of paper. The colored lines should be copied with an extremely high contrast film, such as Kodalith Pan, and the pastel-colored portions of the original should be copied with a moderate contrast film.

When copying the original with only one type of film, you lose quality in either the lines or the continuous tones. For best results, you should copy the combined line and continuous-tone original with a moderate contrast film, such as Kodak Professional Copy film or Kodak Commercial film.

Black-and-White Halftone Originals

A black-and-white halftone original consists of a pattern of black dots of various sizes that represent tones of gray. Examples of halftone originals are printed pictures in newspapers or magazines. Small dots with ample white space between them produce an illusion of a light tone or highlight. Large dots that are close together produce the illusion of dark tones or shadow areas. Because the dots are all the same tone (black), halftone originals can be copied as line originals. This type of original can also be copied as a continuous-tone original, depending on the use of the final product.

Reflection Originals Specifically Produced for Copying

When an original is to be used specifically for copying, you can take certain measures to ensure better reproduction results.

PHOTOGRAPHIC PRINTS.—Black-and-white and color prints produced for copying should have normal density, color saturation, and a glossy surface. When a non-glossy surface is used, the texture of the surface may be apparent in the copy negative and reproductions.

TYPEWRITTEN MATERIAL.—Typewritten material that is to be copied should be typed with a new typewriter ribbon. A carbon “one time” ribbon is best. To further increase contrast between the type and the paper background, you can place a sheet of carbon paper behind the typing paper. This causes the carbon to be transferred onto the back of the paper during typing.

When using a typewriter to produce copy that will be photographed for making 35mm slides, limit your typing to no more than 8 double-spaced lines with 43 elite or 36 pica characters to a line. When photographing typed copy, use a template as a guide for setting up your camera. Allow about 1/8 inch of space outside the template lines in the camera viewfinder.

Originals with Defects

Occasionally, the only record of an event is the original document that through age or use is no longer in its original condition. By use of appropriate corrective measures, certain defects in originals can be eliminated or minimized in the reproduction.

WRINKLED OR CREASED ORIGINALS.—Reflection originals that are wrinkled or creased can be flattened by placing the original on a mounting board and then in a heated dry-mounting press. Mounting in this manner is permanent and should be considered carefully before being used.

Another method you can use to flatten an old photograph is to wet the photograph with water and squeegee it onto a sheet of glass with the emulsion toward the glass. The photograph must be removed from the glass before it dries; otherwise, it may stick to the glass.

STAINED BLACK-AND-WHITE ORIGINALS.—Usually, transparent stains on black-and-white originals can be eliminated in the reproduction by using panchromatic film and a filter that is the same color as the stain. Details on eliminating images of stains with filters is discussed in chapter 3.

FADED BLACK-AND-WHITE PHOTOGRAPHS AND MANUSCRIPTS.—Normally, black-and-white photographs and other types of original documents that have faded and are yellowed should be

copied with a film, such as Kodak Commercial film. An original with a weak, faded image should be copied with a film, such as Kodak Contrast Process Ortho.

SPECIAL APPLICATIONS IN COPYING

Special applications are used in copying to detect information that cannot be seen with our eyes under normal lighting conditions. Because these are special applications, they are not performed in most Navy imaging facilities, but are still worth mentioning. These methods involve the use of infrared and ultraviolet radiation and special types of films.

Black-and-White Infrared

Copying with black-and-white infrared films and infrared radiation can help in deciphering old, charred, or altered documents. This is possible because similar appearing materials can reflect and transmit invisible infrared radiation in different amounts. For example, two ink signatures may appear identical to the eye. However, when photographed with an infrared film, the two signatures may appear totally different.

A suitable infrared filter must be used when black-and-white infrared films are exposed. This is because infrared film is sensitive to visible light as well as infrared radiation. The infrared filter absorbs the visible light so the film image is produced entirely with infrared radiation. For specific filter recommendations, consult the data supplied with the film or the *Photo-Lab Index*.

Infrared wavelengths are longer than visible light wavelengths and do not focus on the same plane as visible light. Therefore, a slight increase in lens-to-film distance is necessary. A separate focusing scale for infrared is indicated on the focusing scale of most lenses.

Ultraviolet Radiation

Copying with ultraviolet (UV) radiation can aid in detecting chemically erased or badly faded writing and restoration or alteration of artwork because different materials reflect or fluoresce different amounts of ultraviolet radiation.

Photographing with reflected ultraviolet radiation in total darkness is possible because some of the ultraviolet absorbed by a material may be overlooked as visible light or fluorescence. Such photography in darkness is possible only when a material is illuminated with an ultraviolet source, such as the General Electric Uviarc. The fluorescence from a material illuminated

with ultraviolet radiation should be photographed with a No. 2A (pale yellow) filter to absorb the stronger UV reflections. A recommended film to use for ultraviolet photography is Kodak Contrast Process Ortho film. Exposure tests should be conducted to determine the best exposure for an ultraviolet copy setup.

Do not use commercial ultraviolet lamps in which the lamp itself is an ultraviolet filter. These lamps transmit visible light that does not permit photographing a fluorescing original.

COPYING REFLECTION ORIGINALS

Reflection originals are documents or other flat objects like pictures or drawings that are viewed and photographed (copied) by reflected light.

Copying reflection originals can be done with either horizontal or vertical copy cameras or setups. The size of the copy setup can range from the space necessary to attach the original to a wall and make the copy photo with a tripod-mounted camera, to a copy setup which fills two rooms- one containing the camera back and darkroom and the other the copyboard. Regardless of the different copy setups possible for reflection originals, the copying techniques are the same with few exceptions. In general, the procedures used for copy work are placing the original on the copyboard, aligning the optical axis of the lens with the original, lighting the original, focusing the lens, calculating the exposure, and exposing the film.

PLACING THE ORIGINAL ON THE COPYBOARD

A copyboard should have a positive means of attaching and holding the original. The means of attaching the original could be spring clips, small bar magnets, thumbtacks or pushpins, a hinged glass frame, a sheet of glass, vacuum, and so forth. When thumbtacks or pushpins are used, be sure not to punch holes in the original. For high volume copy, a vacuum copyboard allows a more rapid change and positioning of originals on the copyboard.

When you are using a vertical copy camera or setup, a darkroom printing easel may be used to hold the original in place.

ALIGNING THE OPTICAL AXIS OF THE LENS WITH THE ORIGINAL

Arising, falling, and sliding front feature of a copy camera provides for the alignment of the lens and the

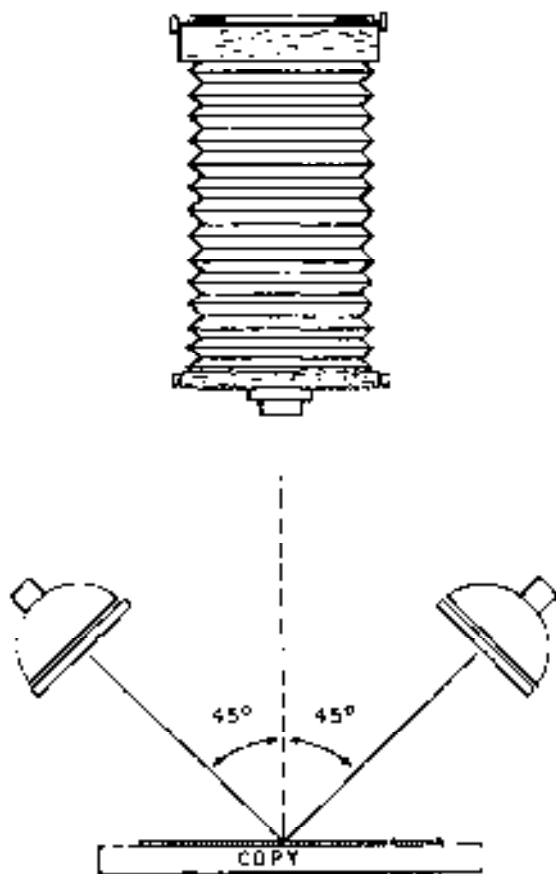


Figure 8-3.—Lights positioned at a 45-degree angle.

original without moving the camera or the original. When the camera is not designed with a rising, falling, and sliding front, the camera or original must be moved to align the original with the optical axis of the lens.

LIGHTING THE ORIGINAL

One of the most important elements in copying is proper, even illumination of the original. Originals that are not properly and evenly lighted yield negatives with uneven density, which are hard to print. This is true whether the original is illuminated by daylight or artificial light. Uneven illumination can be caused by improper placement of artificial lights in relation to the copyboard or by improper placement of the original in daylight.

Artificial lights are normally placed on two sides of the copyboard. A 45-degree angle is recommended for general use (fig. 8-3). At this angle, a minimum of unwanted reflections from the surface of the original occurs. However, depending on the type of surface of the original, the best angle for the lights may change.

For example, an original artwork may have brush strokes that produce reflections. These reflections may be reduced somewhat by placing the lights at an angle greater or lesser than 45-degrees.

Do not position artificial lights too close to the copyboard. The circles of illumination will not cover the original completely. Movable lights should not be positioned so far from the copyboard that the intensity of the illumination falling on the original is greatly reduced.

The evenness of illumination on an original can be checked with an exposure meter. Do this by placing a gray card on the original and taking a reflected light meter reading from the card. Do not allow the shadow of the meter or your hand to influence the reading. When a gray card is not available, a white card (the back of a sheet of photo paper) can be used, but you must compensate your exposure by two f/stops. Reflected light from the four corners and center area of the original should read the same light values.

Daylight provides two choices of illumination: direct sunlight and diffused daylight, such as a cloudy, bright day or open shade. Evenness of daylight illumination is controlled by ensuring that the original is completely in direct sunlight or in diffused daylight, and no shadows are cast on the original.

Although an original is uniformly illuminated over its entire surface, apparent unevenness in illumination may still appear in the copy if a wide-angle lens is used. This is caused when the light transmitted through the center of the lens is more intense than the light transmitted near the edges of the lens. When the entire angle of view of the wide-angle lens must be used, more illumination to the edges of the original is needed to compensate for the falloff of light at the edges of the lens. This can be achieved by turning the lights slightly toward the edges or by moving the lights close to the edges. The amount of light increase necessary for the edges of the original is best determined by conducting exposure tests with the type of film being used.

Lighting control is more critical when using an extremely high contrast film, compared to a high, moderate, normal, or low contrast film. Uneven lighting is more visible in a copy produced with an extremely high contrast film because of the limited exposure latitude of the emulsion.

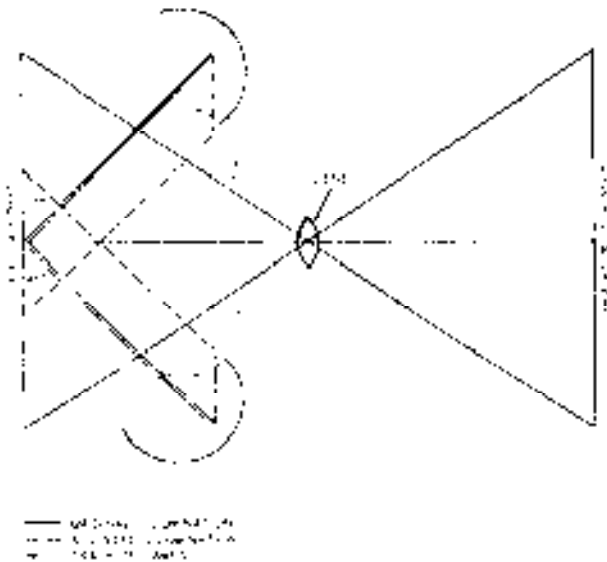


Figure 8-4.—Lighting large originals.

Kelvin Temperature of Illumination

When you are producing color copies, the Kelvin temperature (color) of the light source should match the color balance of the color film being used. When a light source produces an illumination color other than that for which a color film is balanced, filters must be used to alter the Kelvin temperature of the illumination to correspond with the color balance of the film.

Rises and drops in voltage also affect the color temperature and intensity of illumination. Fluctuation in voltage can be controlled by using a voltage regulator.

Lighting Large Originals

For most copy work, you should position the lights at a 45-degree angle, about 36 inches from the copyboard, and aimed at the center of the original. However, there are occasions when you may have to copy a large chart, and the normal lighting setup causes uneven illumination. Light from an artificial source must travel farther to reach the center of the original, and the light reflected from the edges must travel farther to reach the lens. This causes the light to be less intense along the edges and may result in underexposure of these areas. You can correct this condition by adjusting the lights. Keep the lights at a 45-degree angle, but move them closer to the lens optical axis until the light beams from the lamps intersect in front of the original (fig. 8-4). Balance is generally achieved when the beams cross each other at a point approximately one third of the distance from the copyboard to the lens. Check the

lighting on the ground glass or through the viewfinder to see whether it is even from the center to the outer edges.

When lighting large copy, the use of portrait lights with umbrellas is a good source of illumination. The wide coverage and diffused light, produced from this light source, allows you to light the original easily and evenly. To check the evenness of the lighting, use a flash meter and take readings from the center, corners, and intermediate points on the original.

Reflection Control

Unwanted reflections often affect copying. Proper placement of the lights is generally sufficient to eliminate most normal reflections. The three types of unwanted reflections in copy work are as follows:

- Reflections from the light source
- Reflections over the entire surface of the original or copyboard
- Optical flare

Reflections from the light source are caused by light reflecting from the camera stand, lens board, cable release, or other shiny objects around the copy setup. The reflections usually occur when you are copying glass-covered originals, glossy photographs, or other smooth-surfaced originals. The best way to eliminate this type of reflection (when changing the position of the lights does not help) is to use a black cloth or a sheet of cardboard (painted dull black) as a shield between the lens and copyboard. You can do this by cutting a hole the size of the lens in the center of the cloth or board then placing the cloth or board over or around the lens. A lens hood also helps in reducing or eliminating this type of reflection.

Reflections over the entire surface of an original can occur with rough, scratched, crumpled prints or paintings with brush marks, canvas texture, cracks, and so forth. These reflections are caused by high spots on the surface of the original and cause small light reflections of the light source. Such small reflections cover the surface of the original with a haze of light that results in a low-contrast copy image. Reflections of this type are more difficult to avoid than reflections of the light source. As long as the lights shine directly on the rough surface, such reflections occur no matter in what position the lights are placed. There are two lighting methods by which this type of reflection can be minimized or eliminated. These methods are bounce lighting and polarized lighting.

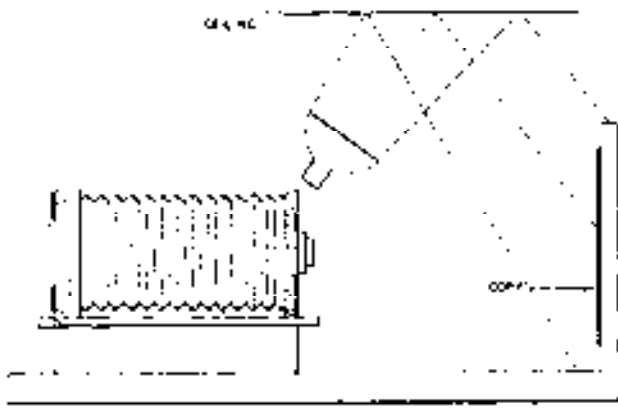


Figure 8-5.—Using bounce light to control reflections.

BOUNCE LIGHTING.—When a white surface is low enough, you should direct the light sources upward so diffused light bounces off the surface onto the original (fig. 8-5). When the surface is too high or other than white, it may be possible to use a white reflector positioned horizontally over the upturned lights. This reflector could be a large sheet of white cardboard.

POLARIZED LIGHTING.—The most efficient method of eliminating unwanted reflections in copy work is by using polarized light. In regular photography, a polarizing filter is placed over the camera lens to subdue reflections. This works because the light from the sun is polarized as it passes through the atmosphere and is reflected by the object being photographed. Using a polarizing filter over the lens only does not greatly reduce unwanted reflections in copy work. In copying, polarizing screens must be used over the lights as well as a polarizing filter over the lens.

When polarized light is used in copying, a considerable increase in exposure is required. This exposure increase is from about 10 to 16 times the normal exposure required with the same lights without polarizing screens. The exact increase is best determined through a series of exposure tests.

Reflections caused by flare are common with dirty or poor quality lenses. When available, lenses designed for copy work should be used, and like all lenses, they should always be kept clean.

DETERMINING EXPOSURE

Like all other types of photography, in copying there are various factors that must be considered when calculating exposure. You must consider the nature of the original—its color and brightness, the intensity of the

light source, the film speed, the filter factor, and the object-to-image ratio or bellows extension

Color and Brightness

Light-shaded or light-toned originals reflect more light than dark originals. Thus, with the same lighting setup, dark originals require more exposure than light originals. The amount of exposure compensation depends on the darkness or lightness of the original. When TTL (through the lens) metering is read directly from the original, a dark original may require twice the exposure of a standard exposure, and a light original may require less than 50 percent of a standard exposure. You should always use a gray or white card to determine the exposure more accurately.

Intensity of Illumination

Intensity of illumination at the copyboard can be controlled by placing the lamps closer or farther from the copyboard, by using lamps of different light intensity output, or by reducing the intensity of illumination by diffusing the light.

The best method for measuring illumination intensity at the copyboard is with an exposure meter. An exposure meter is particularly useful when the copy lights are moved or changed from the positions used to calculate a standard exposure.

The recommended ISO film speeds or exposure indices of copy films apply directly when an incident meter is used or when a reflected meter reading is taken of an 18 percent gray card at the copyboard. When a gray card is not available, a reflected meter reading of a matte white surface with about 90 percent reflectance can be taken. The back of white photo paper provides this reflectance. When a white surface is used to calculate an exposure, the ISO or exposure index of the film should be divided by 5 and rounded off to the nearest setting on the meter. For example: when the ISO is 32, divide by 5 and use 6 or the nearest setting on the meter. You also may take the meter reading directly without changing the ISO and increase the exposure by two f/stops. Remember, exposure meters are calibrated to produce middle gray regardless of the light reflectance ability of the subject. Thus the light reflectance ability of an original should be considered in determining an exposure.

The *exposure indices*, given for high contrast materials used in line copy work, are intended for trial exposures, even when an exposure meter is used.

Exposure Compensation for Bellows Extension

As discussed in chapter 4, an exposure calculated with an exposure meter is precise only for a lens set at a distance equal to one focal length. When the distance between the optical center of the lens and the focal plane is greater than one focal length, an increase to the indicated exposure is usually required. Before an accurate increase in exposure can be applied by opening the lens diaphragm, the effectiveness of the f/stop of the indicated exposure should be determined. Remember, the marked f/stops of a lens that is set beyond one focal length are not valid because the f/stops are a ratio of the diameter of the lens aperture to one focal length. Refer to chapter 4 to determine how to compensate exposure for bellows extension.

PROCESSING COPY FILMS

Films used for copying are processed the same as any other film. They can be processed by machine or by hand, using tanks or trays. Recommendations for specific developers, developing times, and developing temperatures are given with each type of film. Some films not designed specifically for copying may yield negatives with excessive contrast. This can usually be avoided by reducing the developing time. Consult the *Photo-Lab Index* to find suitable developing times to lower or raise contrast.

CATHODE-RAY TUBES

Although taking photographic images from cathode-ray tubes (CRT) is not actually a type of copy work, it has become more commonplace to photograph their images for briefs and presentations. Televisions, computer monitors, and radarscopes all can be classified as CRT photography.

When you are shooting CRTs, like all copy photography, it is important for the optical axis of the lens to be centered and perpendicular to the monitor. The camera must be mounted on a sturdy tripod. A cable release and a macro lens are recommended.

When you are photographing radarscopes, time or shutter speed is not a factor of exposure. The number of sweeps on the scope is the factor that determines the exposure at a given f/stop. The number of rotations is not proportional to film exposure. As a general rule, the exposure doubles between one and three sweeps. To get the correct exposure, you must bracket the exposure. A good starting point for less than three sweeps with ISO 125 film is at f/5.6.

To get the sharpest and clearest image possible, you must adjust the brightness of the radarscope correctly. Do this by turning up the intensity until halos appear. Then turn it down until the halos just disappear. When the intensity of the scope is too great, the image appears out of focus. If the intensity of the scope is not great enough, there is little contrast between the video and the background.

Computer-generated graphics are a common means of producing material for use in slide briefings. When available, use a computer monitor with a flat screen rather than a curved screen. Use the same procedures for shooting computer screens that you use for radarscopes. The difference is there is no sweeping motion when shooting a computer monitor or a television. When motion is apparent, you must use a shutter speed of 1/30th of a second. When you use this shutter speed, the film records the image without obvious scan lines and stops the motion of the image.

When photographing images from a CRT, always darken the room before you make the exposures. This prevents glare on the screen and only the illumination from the screen affects the film.

SLIDE DUPLICATING

In photography, you must often make duplicate slides from an original. Duplicating is actually a form of copying. A duplicate or "dupe" can be made to almost any desired size. Contrast and density along with color adjustments can be made when duplicating color slides.

Color slides are duped to provide extra copies of the slide, correct color balance and contrast errors, or even to change or enhance colors for special applications.

CAMERAS AND ACCESSORIES FOR DUPLICATING

Except for the copyboard or easel, the features of the equipment used for duplicating transparent originals are essentially the same as that used in copying reflection originals. The exception being that the copyboard for copying transparent originals must allow light to be transmitted through the original to the camera.

Except for being lit by transmitted light, large format transparent originals (larger than 35mm) are copied the same as reflection originals. 35mm transparencies are copied with special slide copying attachments for cameras, or copied in specially designed, semiautomatic or automatic slide copiers.



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Figure 8-6.—Slide duplicating system.

Regardless of the equipment being used, your goals for duplicating transparent originals should be to duplicate, improve, or alter, as desired, the reproduction of the original.

DUPLICATING 35mm COLOR SLIDES

To get additional copies of a color slide, you must either make several exposures of the original scene or make duplicates from the original slide. When the scene cannot be re-photographed, the only alternative is to make duplicates of the original slide.

Other than making a number of duplicate slides from an original, you can use the duplicating process to improve a photograph. The image can be made larger or smaller, the composition can be changed through cropping, the density of the duplicates can be changed from the original, and with the use of filters, the color of the reproductions can be changed.

In most Navy imaging facilities a camera designed especially for copying slides is used (fig. 8-6). This

camera setup usually consists of a unit having a camera body and lens, bellows extension, light source, a copyboard, filter holders, and the necessary controls and switches. When slides are copied with a slide duplicating camera, the slide is transilluminated. This is the most common method of copying slides.

Exposure

Whatever method you use to copy slides, you must make exposure tests. The original slide you choose to make the tests should have average density and brightness and normal contrast. This slide should be retained as a reference slide. A full-frame slide of a color rendition chart (color checker) serves ideally as a reference slide. A color rendition chart allows you to visually or objectively compare a series of colors and densities of the original reference slide against the slide duplicate. To visually compare slides, you should use transmitted light and color viewing filters to judge the slides. The objective method is more accurate. A densitometer is used in this method. A densitometer is an electronic meter that measures the actual density of black-and-white and color materials.

Kodak Ektachrome slide duplicating film is recommended for slide duplication. This film is manufactured to provide lower contrast, less filtration with tungsten lighting, and it has good color reproduction characteristics.

The data supplied with the slide duplicating film or the *Photo-Lab-Index* provides information that you can use as a starting point for exposure tests. However, you should bracket the exposure at least one f/stop in one-half f/stop intervals on each side of the basic exposure.

Slide Handling

The original slide must be clean to produce high-quality duplicate slides. The smallest piece of dust or lint is magnified greatly when the slides are projected. Never touch a slide with your fingers. Handle the slides only by their mounts. Hold unmounted transparencies only by the edges. Dust or lint should be removed with low-pressure air or a camel-hair brush. If there are fingerprints or oily smudges on the slide, you can remove them with a soft, lint free pad or a piece of cotton dampened with film cleaner.

Slides should be placed in the slide duplicator base-side up. When you are duplicating the full frame

of the slide, you must place the slide on the copy stage horizontally, regardless of the composition of the slide. When a full frame view is not desired, you can crop or enlarge a portion of the original slide. When you change the camera or lens distance to alter the image size, be sure to refocus the image.

Examining Results

The duplicate slide should be laid on a light table and compared to the original. If you bracketed your exposure, determine which exposure provides the correct density. When none of the exposures are correct, the original must be recopied and given more or less exposure by changing the f/stop. The exposure time should not be changed. Again, bracket your exposure.

Color Balance

Color compensating (CC) filters are used in a slide duplicating camera. The CC filters are placed between the original and light source. By changing the filtration, you can correct the color balance of the duplicate slides.

After producing a duplicate slide with proper density, the color balance of the duplicate slide must be evaluated. When the color balance is off, you must change it through the use of CC filters and re-shoot the original. When the duplicate is extremely yellow, first check the slide duplicating light source. Most slide copy systems using tungsten light, have a "view setting" and a "filter setting." If the system was set in the view position, the CC filters were not in place. The unfiltered tungsten light produces a slide that is very yellow.

To judge the color balance of the duplicate slide, lay it on a light table, compare it to the original, and determine what color or colors are in excess. To do this, you should view the duplicate slides through various CC filters. A color print viewing kit is convenient for this purpose. When viewing slides through the various filters, look at the midtones, not the shadows or highlights. Color viewing filters are helpful in making color balance determinations. If a color rendition chart was used as the original slide, a densitometer can be used to directly compare the color balance of the original to the duplicate.

To adjust the filter pack for the color in excess in the duplicate slide, you should either subtract filtration of

Table 8-1.-Color Compensating Filter Factors

FILTER	FACTOR	FILTER	FACTOR
05Y	1.1	05R	1.2
10Y	1.1	10R	1.3
20Y	1.1	20R	1.5
30Y	1.1	30R	1.7
40Y	1.1	40R	1.9
50Y	1.1	50R	2.2
05M	1.2	05G	1.1
10M	1.3	10G	1.2
20M	1.5	20G	1.3
30M	1.7	30G	1.4
40M	1.9	40G	1.5
50M	2.1	50G	1.7
05C	1.1	05B	1.1
10C	1.2	10B	1.3
20C	1.3	20B	1.6
30C	1.4	30B	2.0
40C	1.5	40B	2.4
50C	1.6	50B	2.9

the color in excess or add filtration of the complimentary color to the color in excess. The amount of change required is about the same as the viewing filter required to make the midtones appear correct.

For example, when a slide is over in blue and requires a CC20 yellow viewing filter to make the midtones appear correct, a CC20 blue filter should be subtracted from the filter pack. When a CC20 blue filter cannot be removed, a CC20 yellow filter should be added to the filter pack. Your first choice should **always** be to subtract rather than add.

Adding or subtracting filters has an effect on exposure. To determine the exposure change required, you should refer to the operating instructions for the slide copier or consult a CC/CP filter factor table (table 8-1).

The number of filters used in a filter pack should be kept to a minimum. Do not combine all three filters. This only creates neutral density.

After processing, select the best exposure and use it as the basic exposure for future duplicates. When you copy other slides that are darker or lighter than the reference slide, adjust the basic exposure. Use one-half

or one f/stop more exposures for slides that are darker than the reference slide, and one-half or one f/stop less exposure for slides that are lighter than the reference slide.

You should maintain a log of the different types of copy jobs completed in your area of responsibility. With the continual changes in photographic film, processes,

and equipment, you must always perform tests (whether it be standard copy or slide duplication) to achieve the highest quality product possible. Camera distance, light source (K), light distances, film type, filters, camera settings, and processes should all be included in the log. By maintaining a log, you eliminate the necessity for photographic testing every time a routine copy job comes into your work center.

CHAPTER 9

CHEMICAL MIXING

When light-sensitive emulsions are used, photography is essentially a chemical process. You depend upon the chemical process to produce visible and permanent images. An important requirement for optimum photographic processing is the careful and correct preparation of photographic solutions. Improper mixing of chemicals or contamination during mixing can have far-reaching effects on operations, quality, production, and mission accomplishment in the imaging facilities of the Navy. It is often difficult to determine the cause of poor quality when improper chemical mixing is at fault, and the need for discarding incorrectly prepared or contaminated solutions cuts down on production and wastes money.

The main function of the darkroom portion of the photographic process is to develop film and produce prints, and this requires photographic chemistry. It may be your job to ensure that all chemicals needed are mixed and checked for quality. "This is a responsibility that you cannot take lightly." A solution that is mixed improperly may cause an entire mission to be lost. You must use the utmost precautions when mixing, checking, or analyzing the photographic solutions used in your lab.

PHOTOGRAPHIC CHEMICAL AND SOLUTION STORAGE

When you receive chemicals in your imaging facility, the cartons, packages, or containers should be dated to show either the date received or the date shipped. This helps provide proper stock rotation and systematic control of chemical usage. Chemicals should be issued from the storeroom on a first-in-first-out (FIFO) basis.

Unmixed chemicals should be stored in their original, unopened containers in a cool, dry, well-ventilated storage area where the temperature is maintained at or about 75°F with a relative humidity of about 40 percent.

Prepared solutions, like dry chemicals, also must be protected from adverse conditions, especially oxidation and contamination. When the following recommendations are adhered to, most "unused"

solutions stay in good condition for a reasonable period of time:

- Small amounts of replenisher and stock solutions are best kept in stoppered or screw-cap bottles. Glass bottles are best for developer and developer replenisher. Screw caps must be free of corrosion, foreign particles, cardboard inserts, and be airtight. Never interchange bottle tops from one bottle to another. A cap-to-bottle color or number code is suggested.

- When large bottles are used to store solutions, the air space in the bottle is increased each time the solution is removed. Since this increases the chance for oxidation, store solutions in small bottles instead. The entire contents of a small bottle can then be used at one time. However, a small air space should be left even in small bottles. This allows for varying solution volume due to temperature changes and keeps the cap from loosening or the bottle from bursting.

- When tanks are used for the storage of large volumes of solutions, they should have floating lids to protect the solutions from aerial oxidation. Dust covers also should be used to cover the top of the tank. The tank, the lid, and the cap should be coded in such a way that they are reassembled with the correct parts.

- Always follow the storage and capacity recommendations of the manufacturer. They are packaged with the chemicals. Do not use chemicals that have been in storage too long.

- Before you use any solution, no matter how long it has been mixed or in storage, check it for discoloration. Each solution has its own "signature" or characteristic appearance; and any change from normal may be a sign that it will produce unsatisfactory results. Check both sides and the bottom of the tank for precipitates. If there are any, carefully stir the solution to redissolve them. When you are unsure of the quality of the solution, discard it.

Most photo-processing chemical formulations are based on both their photographic qualities and their chemical stability or keeping qualities, both on the shelf before mixing and as prepared solutions. After long-term storage, chemicals may lose some of their chemical activity.

MIXING, TESTING, AND STORING EQUIPMENT

The type of material, used for photographic chemical mixing, solution testing, storing, as well as film-handling equipment, must be considered before mixing chemicals. Materials commonly used in the construction of this equipment are Type 316 stainless steel, polyethylene, and glass. Related equipment, such as solution transfer lines, mixer shafts, impellers, and machine parts, are also made of these same materials.

Some metals are not suitable for use with photo solutions. Serious chemical fog and developer changes can be caused by tin, copper, brass, and bronze. Aluminum, lead, nickel, zinc, galvanized iron, and Monel, when used with developers and fixers, can be harmful to films and papers. When these metals are used, silver thiosulfate from the used fixer may stick to them. Even when the utensils are washed after being in the fixer, enough silver thiosulfate can be transferred to the developer in the next processing or mixing run to cause stain, fog, or changes to image tone.

Wooden paddles and other absorbent materials must not be used with photographic solutions. Once they have been used, it is almost impossible to wash them clean of absorbed chemicals.

MIXING CONTAINERS

Chemicals should always be mixed in cylindrical containers made of suitable materials. The size of the mixing container should be suitable for the amount of solution to be prepared. A small batch of solution should not be mixed in a large vessel that uses mechanical agitation because large amounts of air may be introduced, and splashing may occur. So, the mixing container, and for that matter, scales and graduates, should be sized to the quantities and volumes of solutions required.

GRADUATES

Graduates are used to measure liquids. Graduates are made in various sizes, calibrations, and of various materials. The units of measure of graduates are calibrated in the U.S. liquid measurement system of ounces, quarts, and gallons, and in the metric liquid

measurement system of cubic centimeters, milliliters, and liters.

Glass is most commonly used for making graduates because it is NOT affected by most chemicals. Glass is also transparent and reasonably durable. Graduates are also made from plastic and stainless steel. When using graduates made of plastic, do not try to measure strong acids, such as sulfuric acid, which could cause severe damage. You must also be sure that the material the graduate is made of does not react with any of your photographic chemicals.

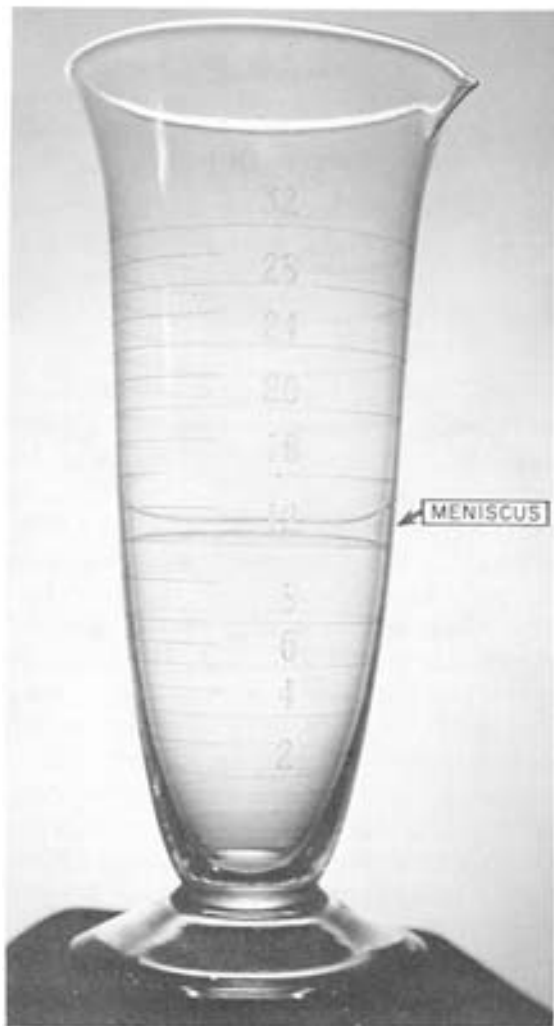
For accuracy in measuring liquids, graduates should be proportional in size to the quantity of solution being measured; for example, an 8-ounce graduate should be used instead of a 32-ounce graduate to measure 2 or 3 ounces.

When measuring a liquid in a glass graduate, hold it at eye level and pour the solution into it until the surface of the liquid reaches the correct mark. You will notice a curved surface on the top of the solution. This curved surface is called the "meniscus." The correct amount is indicated by the lower of two visible lines of the meniscus (fig. 9-1). These two lines can be seen easily through the side of a glass graduate when it is held correctly. With an opaque graduate, such as stainless steel, the two lines can be seen by looking down into the graduate from an angle. Stop pouring the solution when the "lower line" of the liquid reaches the calibration mark. Major divisions are indicated by numbers on the graduate. Subdivisions are shown by calibration lines only. You must determine the value of the individual subdivisions; for example, the marked or numbered lines may indicate ounces and read in series of 10. When there is only one calibration line between each graduation of 10, then the value of the calibration line is 5.

THERMOMETERS

All chemical action takes place faster at high temperatures than at low temperatures. In the photographic process, when you mix or use a solution, you must know its temperature.

Thermometers are used to measure the temperature of the solution and may be made of glass or metal. The average glass thermometer consists of a bulb, containing either mercury or colored alcohol, attached to a capillary tube. This tube may be calibrated or it may be secured to a graduated scale. When you are reading a



HYDROMETERS

Another measuring device used in photography is the hydrometer. A “hydrometer” is used to determine the specific gravity of a solution. A specific gravity check is one of the first tests to verify the dilution of a solution. When the same chemicals are used and when the same quantity of chemicals and an equal volume of water are used each time, the resulting liquid is approximately the same specific gravity each time. This is a characteristic of that particular solution when all specific gravity measurements are made at the same temperature.

The specific gravity should stay within an upper and a lower limit as determined by the manufacturer for each solution. Variations beyond the upper limit-indicating a denser or heavier liquid-suggest that more than the prescribed amount of one or more of the ingredients has been used, an ingredient foreign to the solution has been added, or not enough water was added to the solution. Measurements that fall below standard limits might indicate that something has been left out, that a foreign chemical has been substituted, or that more than the correct amount of water was added.

The silver content of a fixing bath increases as the bath becomes exhausted. This causes the specific gravity of the solution to rise. Hence, in addition to testing the consistency of chemical solutions, specific gravity tests may be used to check the amount of silver in the fixing bath. A hydrometer used for this purpose must be calibrated in grams of silver per liter of solution.

A hydrometer consists of a hollow tube with an enlarged lower section, or float, topped by a narrow stem. The lower section is weighted, so the hydrometer will float in liquids with its stem protruding from the surface. The stem is graduated with marks that are used to indicate the density of the liquid in which the hydrometer floats. When the density of the liquid is high, it supports the hydrometer more easily, so less of the stem is submerged. Less dense liquids allow the hydrometer to sink deeper.

Hydrometers are commonly graduated in terms of specific gravity. Specific gravity is the ratio of the density of a substance to the density of distilled water. However, hydrometers designed for special purposes have different types of graduated scales. An example is the hydrometer that is used to check the silver content of a fixing bath.

Because of the effects of surface tension and capillary action, a meniscus is formed at the interface between the solution and the hydrometer stem. The

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Figure 9-1.—Read the lower line of the meniscus when measuring liquids

thermometer, your eyes should be level with the top of the liquid column in the capillary tube; otherwise, the reading may be off as much as 2 or 3 degrees. This error is due to the refraction of the cylindrical magnifier that is built into the capillary tube.

Most Navy photographic labs have metal, dial type of thermometers made of corrosion-resistant steel. They have a long, thin metal stem, or rod, with a circular dial indicator at the top. The action of this thermometer is remarkably fast, and the dial is easy to read.

The accuracy of all lab thermometers should be checked regularly against one of known accuracy, such as a Kodak process thermometer.

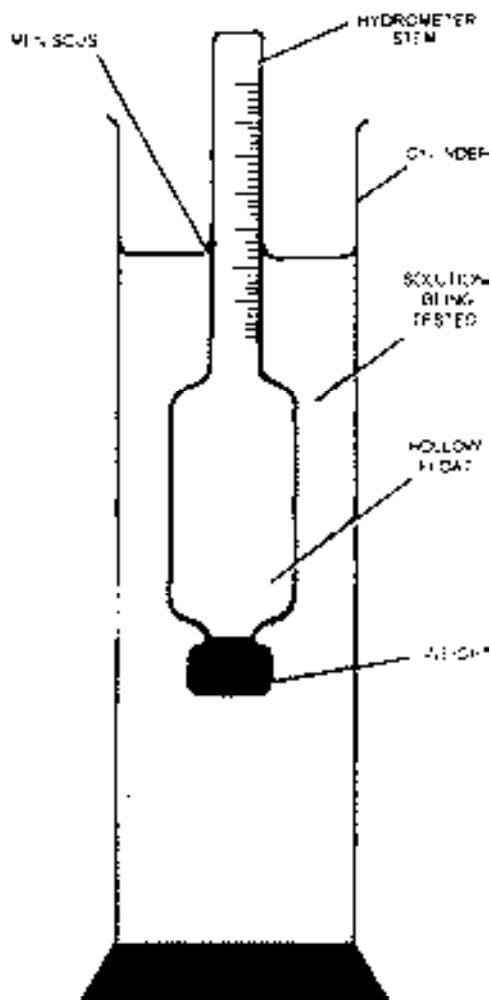


Figure 9-2.—Hydrometer.

reading is taken at the point where the top of the meniscus intersects the stem of the hydrometer (fig. 9-2).

pH METERS

The acid or alkali state of a solution is measured in pH values. The pH value of developers and fixers influences their activity and proper strength. pH is basically a measure of the degree of acidity or alkalinity of a solution. It provides an invaluable aid in determining the degree of accuracy with which the processing solutions have been prepared. Photographic developers usually have a pH of 8 to 12, while fixers range between pH 3.1 and 5.

The following scale indicates the location of acids and alkalis by their pH value (strength):

pH VALUES													
ACIDS						NEUTRAL	ALKALIS						
1	2	3	4	5	6	7	8	9	10	11	12	13	14

A pH of 7 is neutral. Working down from this point, the figures indicate weak acids with a pH of 6 on to strong acids with a pH of 1. Working up from a pH of 7, the figures indicate weak alkalis with a pH of 8 to strong alkalis with a pH of 14.

The pH values are numbered on a logarithmic scale. From 0 through 6, each number indicates a degree of acidity 1/10 as strong as the preceding number, but 10 times stronger than the next succeeding or higher number. A solution with a pH value of 4, for example, has a degree of acidity 10 times stronger than a solution with a pH value of 5, but only 1/100 the strength of a solution having a pH value of 2. When determining the degree of alkalinity of a solution, figure it in an opposite manner. From 8 through 14, each number represents a degree of alkalinity 10 times as strong as the last preceding number, but 1/10 the strength of the next higher number; for example, a solution having a pH value of 11 indicates that the solution has an alkalinity 1,000 times stronger than a solution having a pH value of 8, but it would be only 1/100 as alkaline as a solution having a pH value of 13.

Litmus paper is used to indicate whether a solution is acid, alkaline, or neutral, but it does not indicate the actual pH value. For this purpose a pH meter should be used.

A pH meter is an amplifier meter with a scale that reads from 0 to 14 and an electrode apparatus (Eg. 9-3). A pH meter has a reference electrode and a pH measuring electrode, or these two can be combined into one combination electrode. The pH electrode actually measures the pH, while the reference electrode that contains an electrolyte solution is used only to complete the electrical circuit. The first step in measuring pH is to establish a point of reference by a standardization procedure. To standardize the pH meter, you must place the electrodes in a calibrated buffer solution.

Buffer solutions are available at exact pH values for this precise standardization. Always select a buffer with a pH value as close as possible to the pH of the sample to be tested; for example, use a buffer at a pH of 4.00 to test a fixer solution or a pH of 10.00 to test a developer solution. The instrument should be standardized at regular intervals during a long series of measurements or before each use.



Courtesy of Beckman Instruments, Inc.
302.259X

Figure 9-3.—pH meter.

The ability of a pH meter to determine the pH value of a solution accurately may be used for the following purposes:

- ◆ To verify that chemicals have been properly mixed
- ◆ To test prepared chemicals
- ◆ To assure standardization of the processing solutions
- ◆ To determine the exact replenishment rates for photographic chemical solutions

Tolerances in pH values must be established for individual labs because of differences in procedures, types of equipment, impurities in water, and so forth. On the average, two readings from 10 different batches of each solution, mixed at different times, must be taken and recorded to establish these standards. These batches should be mixed as they would be for regular use but under very close control to ensure that the solutions are mixed at the correct temperature, in the proper sequence, and so forth. This operation helps in determining the tolerance. This tolerance is the amount of variation of the pH that still produces high-quality results.



Courtesy of Kreonite, Inc.
302.20X

Figure 9-4.—Agitation mixers.

The discussion of pH meters is intended as an introduction only. Detailed step-by-step operating instructions for pH meters are not included in this chapter. Operating instructions in the form of technical orders and manufacturer's manuals for specific pH meters will be available to you in your imaging facility.

MIXERS

In the Navy, we use two methods of mixing chemicals: hand mixing and machine mixing. Hand mixing is used when only small quantities of solutions are needed or when machines are not available. Machine mixing is necessary to handle the large production requirements of most Navy imaging facilities.

Agitation Mixers

Proper agitation of the solution during mixing increases the rate at which the chemicals are dissolved and prevents undesirable side effects. For proper agitation, an agitator type of mixer does not cause excessive amounts of air to enter into the solution (fig. 9-4). Developers are quickly ruined by oxidation; a few minutes of improper and violent agitation can

weaken a developer and cause it to underdevelop and sometimes stain film. Too little agitation during mixing may cause the powdered chemicals to settle to the bottom of the mixer and form hard lumps. When these lumps of chemicals are undissolved and undetected, they can clog pumps and plumbing during transfer from the mixer to the storage tank. These lumps can also cause the solution to be less active.

Agitation mixers circulate solutions through a pump that causes a stirring action. There are several types of agitation mixers available. These include large capacity models for preparing large volumes of solutions and small models for making small amounts of solution.

Impeller Mixers

Impeller mixers provide thorough, rapid mixing, but they must be used with care to prevent frothing or foaming and introducing air into the solution. The solution must be mixed so a minimum amount of air is drawn into it. When the shaft is placed in the center of the container, the impeller causes a whirlpool effect that introduces excessive amounts of air into the solution. Furthermore, when the shaft is in the center of a container, there is very little agitation in the bottom-center area of the container and undissolved chemicals pile up directly beneath the end of the shaft (fig. 9-5).

Avoid bumping the shaft or impeller on the sides or bottom of the mixing vessel. This procedure may bend the mixer shaft, and a bent shaft produces excessive vibrations that can ruin the motor bearings.

WEIGHTS AND MEASURES

The different systems of weights and measures used in chemical mixing and the relationship of the various units to one another are matters that every photographer who prepares photographic solutions should understand.

These days, photographic chemicals are pre-packaged and are usually published in two systems of weights and measures: avoirdupois and metric. In the avoirdupois system, chemicals are weighed in ounces and pounds and are dissolved in pints, quarts, or gallons of water. In the metric system, they are weighed in fractions or multiples of grams and are dissolved in cubic centimeters or liters of water. With a conversion table, a formula given in one system can be easily converted to the other.

Weight and Volume Conversion

Number of Units Known	Resultant Units	Multiplication Factor
ounces	grams	28.3
pounds	kilograms	0.45
grams	ounces	0.0353
kilograms	pounds	2.2
fluid ounces	milliliters	30
pints	liters	0.47
quarts	liters	0.95
gallons	liters	3.8
milliliters	fluid ounces	0.034
liters	pints	2.1
liters	quarts	1.06
liters	gallons	0.26

Two systems of temperature measurement are used: Fahrenheit and Celsius. The Fahrenheit scale uses °F as a temperature symbol. The Celsius scale uses °C as its symbol. On the Fahrenheit scale 32 degrees is the freezing point of water, and the boiling point is 212 degrees. The difference is 180 degrees. The Celsius scale is 0 to 100 degrees from freezing to boiling. One degree Fahrenheit is smaller than one degree Celsius, one Fahrenheit degree being 5/9 of a Celsius degree. To convert Fahrenheit degrees into Celsius, subtract 32, multiply by 5 and divide by 9; that is, $(^{\circ}\text{F} - 32) \times 5/9 = ^{\circ}\text{C}$. To convert Celsius to Fahrenheit, multiply by 9, divide by 5, and add 32; that is, $(^{\circ}\text{C} \times 9/5) + 32 = ^{\circ}\text{F}$.

Some formulas use the word *parts* as a measure. They may call for two parts of one chemical, one part of another, and any number of parts of water. This is frequently done when two or more stock solutions must be combined to make the working solution. In such cases, the word *parts* means any convenient "volume" measurement may be used; however, the same measure should be used for everything required by the formula. A part may be a fluid ounce or a gallon, depending upon the total quantity of working solution needed. Formulas use parts only when volume is to be measured.

The term *stock solution* identifies a concentrated chemical solution. A working solution is the solution used for processing. The working solution may be the same as the stock solution, but more than likely it is a diluted stock solution.

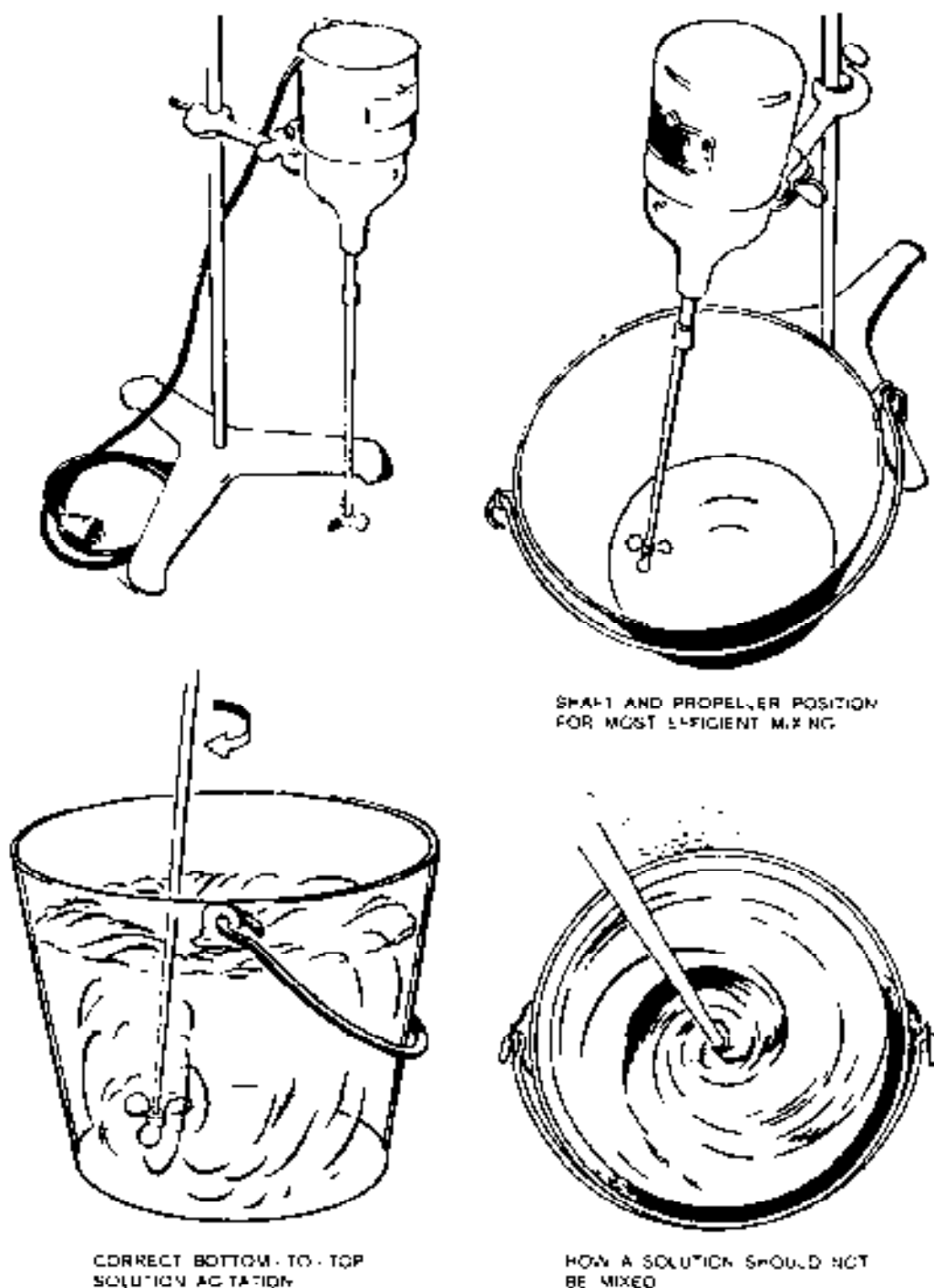


Figure 9-5.—Impeller mixers.

CHEMICAL MIXING RULES

For both personal safety and efficiency when mixing processing solutions, there are a few commonsense rules that you must follow. Mixing chemicals is simple enough, but even a slight error can change the working characteristics of some solutions.

The principles of common cleanliness and precise measuring will prevent many chemical troubles. Without cleanliness and accuracy, many processes become guesswork.

Chemicals should not be mixed in areas where sensitized materials are handled or stored. Chemical

dust or fumes can ruin these materials. There should be adequate ventilation, a complete air change every 3 minutes, and an exhaust fan to the outside atmosphere in the area where chemicals are mixed.

CONTAINERS

Containers for photographic solutions should be made of a material that does not affect or is not affected by chemicals. Glass is the best material. Stainless steel is a highly suitable material, provided it is of the proper composition. Hard rubber and glazed earthenware may also be used satisfactorily. Acid and alkali-resistant plastic containers are acceptable.

Containers, graduates, sinks, and every utensil used in the photographic lab should always be clean. As soon as work is finished with an item of equipment, it should be cleaned and returned to its proper place. When chemicals are spilled, clean them up as soon as possible.

Chemical solutions and chemical dust corrode and cause pitting of most materials, including stainless steel, when allowed to remain for any length of time.

ACCURACY

Photographic quality suffers when the chemicals are improperly mixed. You must be certain that the amount of chemical you put into a solution is the amount specified.

The mixing of processing solutions has been greatly simplified over the years by the introduction of packaged photo-processing chemicals. Packaged chemicals come in convenient sizes for most needs. They offer standardized quality, economy, and convenience.

Packaged chemicals include film and paper developers and fixing solutions of various types that are manufactured under tightly controlled conditions. These packaged chemicals are available in either liquid or powder form. Processing solutions can be mixed easier, faster, and more accurately with packaged chemicals than with bulk chemicals.

When mixing packaged chemicals, you should always mix the entire package. Packaged chemicals usually contain more than one ingredient. During shipping and handling, these ingredients may separate with the heavier elements settling to the bottom of the package. When only part of the package is mixed, some of the ingredients that have separated or settled may not

be put into the solution and the result of the process is not predictable.

MIXING

Always add chemicals to the water or solution. Dry chemicals should be poured slowly into the water while it is being stirred. When preparing a developer, be careful while you are stirring so air is not beaten into the solution. When water is poured on dry chemicals, they will cake and form hard lumps that are difficult to dissolve.

Lumps or hard particles should be ground up, or crushed, with the stirring rod or with a pestle. Never add another chemical to a solution before the previous part has been completely dissolved. Sometimes there is a residue that will not dissolve. The residue may be sand in the water supply, impurities in the chemicals, or other matter that found its way into the water; however, when the solution is allowed to stand for awhile, these particles usually settle and the clear liquid can be poured off. To remove sludge or dust particles that may not settle, pour the solution through a funnel containing three or four layers of cheesecloth or absorbent cotton.

Many chemicals are very sensitive to heat, and even moderate temperatures seriously affect their chemical properties. However, the rate of chemical reaction increases with an increase in temperature, and all chemicals dissolve more readily in warm water than in cool water; consequently, many formulas and instructions recommend that water as hot as 125°F be used to prepare the solution that must then be cooled to the correct processing temperature. You should always try to mix solutions at the minimum temperature recommended by the manufacturer. Solutions oxidize faster at higher temperatures because of increased chemical activity at these temperatures.

When all crystals are dissolved, the solution should be practically colorless. Sometimes a solution appears cloudy or milky for a short time after it is mixed. This appearance may be caused by air taken into the solution by the dry chemicals. Air taken into a solution is distributed through the solution as tiny bubbles that cannot escape while the solution is being stirred. When the presence of bubbles has caused the discoloration, the solution will clear up when it is allowed to stand for a while. The bubbles rise to the surface of the solution and escape into the air.

Always add acid to the water. This is as easy to remember as AAA (Always Add Acid). It is dangerous to pour water into an acid. Some acids generate heat

rapidly enough to cause boiling or a splashing explosion that may splash the solution on someone nearby. Acids should always be poured slowly into a solution (near the edge of the container) while rapidly but carefully stirring the liquid.

LABELS

Mixing tanks, storage tanks, and machine tanks for developer, stop bath, fixer, and other solutions must be labeled clearly with waterproof tape or nameplates to reduce the chance of putting a solution into the wrong tank. The label should contain the name of the solution, the date it was mixed, and the name of the person that mixed it. It is also mandatory that hazardous chemical labels be attached to all chemical containers.

CONTAMINATION

All of the mixing equipment and the mixing area must be cleaned immediately after use to prevent solution contamination. The mixing tools and tanks must be thoroughly cleaned right after use to prevent dried solutions from forming encrustations that could dissolve when a new solution is mixed. Mixing tools that have not been used in some time should be washed before use to remove any dust or dirt that may have accumulated.

PREPARATION OF PHOTOGRAPHIC SOLUTIONS

When mixing photo chemicals, you should always start with clean tools and a clean tank with the right amount of water—usually about one half to three fourths of the final volume. The temperature of the water must be as specified in the instructions. Developers are generally mixed at or about 90°F to 125°F, while fixers are mixed in water that should not be much above 80°F.

Always dissolve or dilute ingredients in the order called for by the instructions. Dry ingredients must be completely dissolved before the next ingredient is added. All liquids must be completely diluted, while stirring, before the next ingredient is added.

After a liquid is added to a solution, rinse the bottle and add the rinse water to the solution, so all the concentrated liquid is used.

After all ingredients have been combined and thoroughly dissolved, diluted, and mixed, water should be added to bring the solution up to the correct volume. Do not forget to mix this water thoroughly into the solution.

FOLLOW DIRECTIONS

Before mixing photographic chemicals, you should read the manufacturer's directions carefully. Much research goes into the production of chemical products; however, it is only effective when the chemical is mixed and used properly. The directions for even the most familiar product should be reviewed, because there are continual attempts to improve photographic materials; for example, new film or developer combinations may call for changes in dilution, processing time, or temperature to get the required results. Learn to follow directions. This is very important in the preparation of chemicals for both quality and safety reasons.

Remember to follow the proper procedures for chemical safety. You should prepare the chemicals in a well-lighted and well-ventilated room. Do not taste or inhale any chemical. You are required to wear rubber gloves, a rubber apron, eye protection, a long sleeve shirt, and a respirator for your personal protection. Remember, for safe mixing and quality results, FOLLOW DIRECTIONS.

CAUTION

In most imaging facilities, it is common practice to connect a hose to the water spigot to aid in filling a chemical mixing tank and to prevent splashing in the sink. Aboard ship, hoses attached to potable water spigots can back siphon chemicals from the tank or sink into the drinking water supply. Such hoses should either be removed after each use or have a backflow preventor installed in the plumbing system.

CHANGING PERCENTAGES

You must know how to prepare percentage solutions from liquid chemicals. When the chemical on hand is in liquid form and of known strength, a percentage solution can easily be prepared by the following method:

$$\frac{\text{Amount Wanted} \times \text{Strength Desired}}{\text{Strength on Hand}}$$

Multiply the amount wanted by the strength desired and divide the product by the strength of the chemical on hand; for example, you need 11 ounces of 28 percent acetic acid. The chemical on hand is glacial acetic acid, 99.5 percent. Thus,

$$\frac{11 \times 28}{99.5} = \frac{308}{99.5} = 3.09 = 3 \text{ ounces}$$

Add 3 ounces of 99.5 glacial acetic acid to 8 ounces of water to obtain 11 ounces of a 28 percent solution of acetic acid.

CHEMICAL SAFETY

Some of the chemicals used in photography are skin irritants, and others can cause serious injuries. Chemicals should be regarded as poisons and handled with caution. Before handling or working with photographic chemicals, you should become familiar with the safety precautions contained in *Navy Occupational Safety and Health (NAVOSH) Program Manual for Forces Afloat*, OPNAVINST 5100.19 series, volume I (chapters B3 and B12) and volume II (chapters C1, C9, and C23), *Navy Occupational Safety and Health (NAVOSH) Program Manual*, OPNAVINST 5100.23 series (chapters 15, 20, and app. 15), and *Safety Precautions for Photographic Personnel*, NAVAIR 10-1-764.

Because of the danger of contaminating your fingers, all precautions concerning poisons should be observed when you are mixing photographic solutions.

Ingestion of a poisonous chemical is commonly induced by hands that are contaminated with a toxic chemical. You should adhere to the precautions published for photographic chemicals to avoid contact or ingestion of poisonous or corrosive chemicals. Regardless of the antidote given to anyone that has been accidentally exposed to or has swallowed a poisonous or corrosive chemical, the antidote is for EMERGENCY USE ONLY. The affected person should report to the MEDICAL DEPARTMENT IMMEDIATELY.

ACIDS AND ALKALIES

There are many types of acids and alkalies used in photography. In general, acids and alkalies are similar in their injurious properties in that either may cause the following:

- Corrosion (chemical burn) by direct contact with the skin or eyes or indirectly through the clothing.
- Intoxication or suffocation by inhalation of their fumes. The fumes of some compounds are toxic or poisonous, while others displace air, thereby producing a suffocating atmosphere.
- Poisoning when taken internally.
- Fire and explosion because of their instability under adverse storage conditions. Also, some acids are strong oxidizing agents that can generate ignition

temperatures upon contact with organic materials and other chemicals.

PRECAUTIONS

There are several safety items that must be worn when mixing chemicals. They are as follows:

1. Face shield or goggles-Protects the eyes from caustic chemicals.
2. Plastic or rubber apron-Reduces the chance of chemical contamination of clothing.
3. Rubber gloves-Protects the hands and lower arms. Gloves should extend up to the elbows.
4. Respirators-Used to prevent the inhalation of fumes or chemical dust. The correct cartridge must be used for the type of chemical being mixed as described in *Navy Occupational Safety and Health (NAVOSH) Program Manual*, OPNAVINST 5100.23 series (app. 15). Respirators must be cleaned and sanitized with alcohol and placed in an airtight bag after each use.
5. Long sleeve shirt-Used to protect the arms.

The majority of photographic chemicals cause the skin to dry out due to the removal of natural skin oils. Some types of chemistry have an accumulative nature. This is when some of the chemicals are being absorbed into the skin layers during each exposure to the chemistry. The chemistry then replaces some of the natural oils that lubricate the skin. Over an extended period of time, which varies for different people, accumulation could result in a total breakdown of the ability of the skin to produce natural fats and lubricating oils. Extreme conditions can result in contact dermatitis. Metol (developing agent) poisoning can be a result of accumulation poisoning.

Certain precautions must be observed in areas where acids and strong alkalies are handled. These precautions are as follows:

- Warning signs and labels-Signs should be posted in the chemical mixing area, warning personnel of the principal hazards of the chemical being used. All containers must be properly identified with hazardous material labels.
- Showers and eyewash stations-Showers and eyewash stations must be provided near all chemical mixing areas.

- Ventilation-In a chemical mixing area, exhaust ventilation must be provided. The exhaust vent must draw vapors away from the person mixing the chemicals and provide a complete air change once every 3 minutes (20 changes per hour).

- Mixing and diluting-Strong acids and strong oxidizing agents may react violently or produce explosive products. Toxic gases may be created when acid is mixed with such chemicals as sulfides, cyanides, nitrates, and nitrites. Diluting acids with water can generate considerable heat; acid should always be added to water, not water to acid. The addition should be done slowly with constant stirring.

- Never smell a chemical directly from the bottle; instead, hold the bottle at a distance from your nose and sniff its contents cautiously rather than inhale directly.

- Never taste a chemical.

- Handle all chemicals cautiously; many can produce burns or skin irritation.

MATERIAL SAFETY DATA SHEETS (MSDS)

In addition to the precautions listed previously, every person in your imaging facility must be completely familiar with the Material Safety Data Sheets (MSDS) for each chemical solution used in your photographic production. The MSDS are provided by all the manufacturers of hazardous materials. You are required to have the MSDS for each solution. The Occupational Safety and Health Administration (OSHA), as well as your safety officer, performs periodic safety inspections of your imaging facility. Every person is responsible for the location and information contained in the MSDS. MSDS are generally broken down into 12 sections as follows:

1. Product Information
2. Component Information
3. Precautionary Label Statements
4. Physical Data
5. Fire and Explosion Hazard
6. Reactivity Data
7. Toxicological Properties
8. Protection and Preventive Measures
9. Storage and Disposal

10. First Aid

11. Transportation

12. Preparation Information

It should be noted that separate MSDS may apply to working solutions and stock solutions or concentrates. Be certain that the MSDS apply to the chemical you are in contact with.

ENVIRONMENTAL ISSUES

The Environmental Protection Agency (EPA) has tightened regulations drastically and they have a substantial impact on the way imaging facilities conduct business. All Hazardous Materials (HAZMAT) must be handled in complete compliance with EPA regulations. The regulations and tolerances differ from state to state and base to base. It is important that you comply with the regulations in your local area.

DISPOSING OF HAZARDOUS MATERIALS

Before you pour photographic chemicals down the drain or throw material in the dumpster or over the side, you must be certain that you are not violating any hazardous material handling or disposal procedures. You should be completely familiar with the environmental protection standards and the Ship's Hazardous Material List for all items that apply to your command. EPA regulations state that anyone violating environmental protection regulations can be personally accountable and fined. When you have ANY doubt, ask your supervisor before disposing of the material(s).

The MSDS provide information on how to neutralize and clean up spill containment of photographic chemicals. When handling and cleaning up chemical spills, be sure you follow all safety precautions mentioned previously. It is important that any chemical spill be cleaned up immediately because many chemicals are extremely corrosive. These chemicals may damage or stain the surfaces with which they come into contact. Consult your local directives on disposing of materials used to clean up chemical spills as well as the chemicals themselves.

SILVER RECOVERY

Silver contained in photographic emulsions and used fixers and bleaches are considered hazardous

material. Silver recovery was established originally to reclaim the silver from these materials and reclaim for money that was returned to the Department of Defense. Today, however, when not performed, silver recovery

could be very costly in the fines that may occur when photographic materials are not disposed of properly. Be certain that you know the proper handling procedures for photographic materials that contain silver.

CHAPTER 10

IMAGE PROCESSING AND CONTROL

As a Navy photographer, you must realize that composing and exposing a scene on film does not guarantee top-quality photography. The quality of the finished print depends on the quality of your darkroom work. A perfectly exposed film is useless if it is fogged, scratched, or under- or overdeveloped. Therefore, each step of film processing is important and you must master each step.

During the discussion of *basic* film processing concepts, both black-and-white and color film processing are covered. The mechanics of black and white and color processing are very similar. The primary differences between processing color film and processing black-and-white film are there are more steps in a color film process, and the time and temperature requirements are more critical.

DEVELOPERS AND DEVELOPMENT

The purpose of development is to convert those parts of the light-sensitive material (film or paper) that has been affected by light to black metallic silver. This produces a visible image from the invisible latent image. Development is usually carried out by bringing the exposed film into contact with a solution that contains a developing agent, but no silver salt. The silver that forms the developed image comes from a reduction of the individual silver halide grains in the film emulsion. This process is called *chemical or direct development*.

In another process that is seldom used, the developed image is derived from a soluble silver salt contained in the developing solution itself. This process is called *physical development*. The physical development process can be difficult to use because there is a tendency for silver to be deposited where it is not wanted.

The process of *chemical development* is most commonly used for film development. Chemical development is the process with which you should be concerned. In chemical development, the individual silver halide grains in the film emulsion are reduced to a black metallic silver. Each grain in the emulsion acts as a unit, in the sense that a grain is either developable as a whole or is not developable. When film development is performed properly, only exposed grains

containing a latent image are reduced to black metallic silver. You may ask, "Why doesn't the developer develop the unexposed grains as well as the exposed grains?" Actually, the unexposed grains are developable. When development is carried out over a long enough period of time, all grains are developed or reduced to black metallic silver. The density that results from the development of unexposed silver halides is called *fog*. Thus development is a rate phenomenon and the development of the exposed grains takes place at a faster rate than the unexposed grains.

The individual grains of silver halide in an emulsion are protected against the action of the developer by a chemical layer. When light strikes the emulsion, it breaks down the protective layer at one or more points on each individual *light-struck* grain. When the exposed film is placed into the developer, the grains are acted upon at these points by the developing agent, and each grain that received more than minimum exposure is quickly reduced to black metallic silver. The amount of blackening (density) over the film surface depends primarily upon the number of grains that have been affected by the developer. Density is also influenced because some grains may not develop to completion in the time the developer is allowed to act on the film.

COMPOSITION OF A DEVELOPER

There are many different formulas used as developing solutions, but most developers contain the following four essential ingredients: developing agent, preservative, accelerator or activator, and restrainer.

DEVELOPING AGENT

The developing agent, commonly referred to as the *reducing agent*, is the most important chemical in a developing solution. It is the developing agent that actually converts the silver halide grains in the emulsion to metallic silver. Nevertheless, the other ingredients are necessary to make the solution function properly.

One of the properties of a developing agent is its reducing potential. This refers to its relative ability to develop or reduce the silver halides. An active developing agent attacks silver halides vigorously, whereas one of low potential is slower in its action. For

certain purposes, one agent may be preferred over another. The temperature of the solution affects the activity of some agents much more than others. Hydroquinone, Metol, paraphenylenediamine, and phenidone are some of the more commonly used developing agents.

PRESERVATIVE

All developing agents in an alkaline state are affected by oxygen. When the developing agent combines with the oxygen in the air, the efficiency of the developing agent is reduced. When elements combine with free oxygen from the air or water, *oxidation* occurs. Therefore, a preservative is added to developing solutions to prevent excessive oxidation. The preservative prolongs the useful life of the developing solution and prevents stains caused by the formation of colored oxidation products.

The preservative is a chemical with a great attraction for free oxygen and combines with it when mixed into a solution. A large amount of free oxygen is in the water used for solutions. When the free oxygen is left in the water, it oxidizes most of the developing agent and produces stains before the metallic silver image is developed completely. By adding enough preservative, you may remove practically all of the free oxygen from the solution, the developing agent works as intended, and no stains are produced. Sodium sulfite is the preservative most commonly used in developing solutions.

ACCELERATOR

All developing *agents* (not developing *solutions*) are either neutral or slightly acid. Most developing agents must be in an alkaline state to be effective reducing agents, thus solutions require an alkali to activate the developing agent. A developing *solution* contains an accelerator so the solution becomes alkaline.

The accelerator serves two functions. First, it speeds up the swelling of the gelatin in the emulsion. This swelling permits the solution to penetrate the entire emulsion more quickly. The effect of this action is physical. The second action is completely chemical. As the silver halide salts in the latent image are reduced by the developing agent, the halide elements freed from the silver are absorbed by the accelerator and combined into neutral salts. This prevents harmful effects in the solution.

Because the accelerator is a determining factor in the activity of a developing solution, it affects the degree

of graininess produced in the negative. This graininess is dependent upon the clumping action of the silver grains during the development process. The more active the developer, the higher the pH, and the greater the clumping action. Therefore, the milder or less alkaline developers yield finer grain. Common accelerators used in developing solutions are sodium carbonate and potassium carbonate.

Without an accelerator, there is little or no action. With some accelerators there is too much action. By the addition of a bromide restrainer, you may slow down the action of the developing solution to a controllable degree.

RESTRAINER

Without a restrainer most developing solutions act too rapidly and develop unexposed silver halides near the surface of the emulsion. This causes chemical fog, developing streaks, and an image with low contrast. During development, some restrainer is released from the silver and has a restraining action on the reducing agent during development. However, its action is not enough to prevent fog. When a restrainer is added, development time is prolonged and fog is minimized. Contrast is increased because the activity of the developing agent is cut down in unexposed areas. However, too much restrainer greatly retards the amount of development. The chemical most commonly used as a restrainer is potassium bromide.

TYPES OF BLACK-AND-WHITE DEVELOPERS

As stated previously, when a photographic emulsion is exposed to light, there is an invisible change produced in the minute crystals of silver halides that results in a latent image. To make the image visible, you must treat the exposed emulsion in a solution known as a developer. This solution converts the halides affected by light to black metallic silver. These black metallic silver particles form the visible image on the negative.

At the beginning of development, there is little difference in density between the highlight and shadow areas of the film. However, during normal development, this difference increases because the highlight densities continue to increase after the shadow areas are completely developed. Development should stop when the contrast between the shadows and highlights reaches a desired difference. The activity of the developer, and to some extent the type of film, primarily determines this developing action.

One type of developer cannot cover all situations; for example, film exposed by poor lighting conditions may require an active developer to bring out as much of the image as possible, while a film exposed under normal conditions requires a normal working developer. There are many different developers, each provides different activity and quality of development. The actual choice of the developer to use depends on the type of film, conditions under which it was exposed, type of negative required, and the developing time that is best for your development method.

GENERAL-PURPOSE DEVELOPERS

A developer for general-purpose work should produce moderate grain, normal contrast images. Clear areas of the negative, as well as the image areas, should be basically fog free.

Some general-purpose developers are as follows:

- HC-110
- DK-50
- Microdol

FINE-GRAIN DEVELOPERS

All photographic emulsions have a grainy structure. Although this grainy structure is not normally visible to the naked eye, it becomes visible whenever high magnifications are used to make prints. The tendency to use small-format film and make large enlargements has resulted in the need for fine-grain developers.

When enlargements are made from small negatives developed in other than fine-grain developer, the grain of the film may be objectionable. Graininess in the film should be *controlled* in the development of the film. Keep in mind, however, that every film has its own grain structure or characteristics. For 35mm-roll film, it is normally best to use a fine-grain developer.

Fine-grain developers achieve the desired result in several ways:

- They are usually soft working and this tends to reduce clumping of the silver grains.
- Some fine-grain developers actually produce smaller individual grains of black metallic silver. This, however, tends to reduce the film speed.
- The grayish white images produced by some fine-grain developers help by providing for increased

passage of light between individual grains. This results in less local variation in density.

- Most fine-grain developers produce relatively low-contrast negatives. A reduction in contrast in the negative tends to reduce the graininess of the negative. However, this may not contribute significantly to a reduction in the graininess of the final print. Any advantage achieved by lowering negative contrast may be offset by the need to use a higher contrast printing filter to print the negative.

Some fine-grain developers are as follows:

- ID-11 (Ilford)
- D-76 (Kodak)
- Atomal (Agfa)

HIGH-CONTRAST DEVELOPERS

To produce maximum contrast on process and line copy type of films, you must have a developer that produces density readily and is free from any tendency to produce fog within the time of development.

Some of the most popular high-contrast developers are as follows:

- Kodalith (Kodak)
- D-11 (Kodak)
- D-19 (Kodak)

To prevent staining when using a high-contrast developer, you should rinse the negative well between developing and fixing.

HIGH-DEFINITION DEVELOPERS

A high-definition, or compensating, developer adds increased sharpness to the image by enhancing contrast of image edges and fine detail in the negative. High-definition developers may increase film speed by one or two f/stops, but they also increase graininess. High-definition developers are recommended for use only with fine-grain (slow or medium speed) films.

Some of the high-definition developers are as follows:

- Acufine
- Ethol TEC

You should consult the film data sheets or the *Photo-Lab-Index* for the recommended developers for each particular type of film to be processed.

CHANGES IN DEVELOPER WITH USE

The function of a developer is to change chemically the sensitized material treated in it. It stands to reason then that a chemical change also takes place to the developer itself. Most developers are used more than once. Therefore, you must know what changes to the developer can be expected and what can be done to prevent them or at least compensate for them. The primary changes that occur to a developer as it is used are as follows:

- Some developer is removed or carried out with the film and on the film hangers or reels.
- The developing agents are used up by reduction of silver halides to black metallic silver and by aerial oxidation. When the developing agents are used up by the reduction of silver halides, the by-products of the reaction cause the pH of the solution to drop, thus becoming more acid. When the developer agents are used up by oxidation, the pH tends to rise.
- The preservative is used up, thus the developing agents oxidize faster.
- The bromide within the solution is increased because the bromide is released from the film emulsion itself.

The effects of these changes to a developer are as follows:

- The development time required to reach a given contrast index or gamma is increased. Therefore, when a developer is used over and over, development time must be increased as more film is developed.
- The effective film speed produced by the developer decreases because of the increased bromide (a restrainer) in solution. However, this speed loss may be partially offset by increasing development time to maintain image contrast.

Complete exhaustion of a developer occurs when the developing agents are all used up. The approach of exhaustion is characterized by a brown color of the solution. Since a developer in this state can stain sensitized materials, it should not be used.

In most Navy imaging facilities, it is not economical to use a developer to the practical exhaustion point and then discard it. The quality of the image usually suffers

long before the exhaustion point of the developer is reached. Replenishers are usually used to prevent this from happening.

Replenishment of a developer involves replacing those chemicals in the used developer that are exhausted by a replenisher so that the developer remains consistent. The aim of replenishment is not to keep the composition of the developer constant but to keep its activity constant.

There are two commonly used methods of replenishment. The first or "topping off" method is used extensively in tank processing. When topping off is used, the developer solution is maintained at a constant level in the tank by adding replenisher, so the volume added is equal to the amount of developer carried out. When you are replenishing by this method, it is possible to maintain consistency in development for only a certain period of time. After a given volume of replenisher has been added to the developer, the developer must be discarded. This procedure is then repeated with new developer.

The second replenishment method is called the "bleed" method. The bleed method is used primarily with machine processing where a circulating developer system is used. In the bleed method, used developer is drained off and replenisher (in proportion to the amount of film processed) is fed in, so the characteristics and the level of the developer in the machine remain constant.

FIXING, WASHING, AND DRYING

As soon as a light-sensitive material is developed, it contains a visible silver image, but the image is not ready to be exposed to light. Only a portion of the silver halides in the emulsion were reduced to black metallic silver by the developer. The silver halides that were not reduced restrict both the immediate usefulness and the permanence of the image. These undeveloped silver halides must be removed. This is the purpose of the fixing bath. Before treating the sensitized material in the fixer (as it is called), you must stop or at least slow down the action of the developer. When the light-sensitive material is removed from the developer solution, there is a small amount of developer both in the emulsion and on the surface that must be removed or neutralized. For this, you use either a water rinse bath or an acid stop bath.

WATER RINSE BATH

To *slow* down the action of development, you must immerse the film in a water rinse bath. A plain water rinse bath is commonly used between development and fixation to *slow down* the development by removing all the developer that is clinging to the film (or paper) surface. A rinse bath does not completely stop development but retards it. A rinse bath has little affect on the developer that is actually in the swollen emulsion.

Rinsing is accomplished by quickly immersing the film in plain, clean water. A water rinse bath should be changed often to ensure it does not become loaded with developer. It is better to use running water.

The rinse bath, then, serves two purposes: first, it slows down development and second, it reduces the work that has to be done by the acid in the fixer. Rinsing, therefore, protects or prolongs the useful life of the fixer.

Following rinsing in plain water, the material (that is still light sensitive) must be treated in an acid fixing bath to *stop* the development.

ACID STOP BATH

Although a plain water rinse bath is commonly used between development and fixation, a better procedure is to use an *acid* stop bath. The function of a stop bath is not only to remove the developer that is clinging to the surface of the material but to also neutralize the developer in the swollen emulsion to *stop* development completely.

The acid stop bath stops the action of the developer because developing agents cannot work in an acid solution. An acid stop bath also helps protect or prolong the life of the fixer by neutralizing developer carry-over.

An acid stop bath should meet the following requirements:

- The pH must be low enough to neutralize the action of the developer carried over.
- The acidity should be limited so the small amount carried over into the fixing bath does not increase the free-acid content of the fixing bath and cause sulfurization.
- It must not contain enough acid to produce blister formations in an emulsion.

You should use only a weak acid stop bath between development and fixation. Strong acid and the acid in the fixing bath have a tendency to form carbon dioxide

gas bubbles in the emulsion. When the film is taken from the developer and placed directly into a strong acid or fixing bath, these bubbles may break and cause small, round holes in the emulsion. These bubbles are sometimes mistaken for pinholes like those caused by dust particles settling on the emulsion before camera exposure.

When you are using an acid stop bath, remember that some of the stop bath is carried into the fixer when materials pass through it. Therefore, you cannot use a strong acid (such as sulfuric acid) because it can cause precipitation of sulphur in the fixer. Acetic acid is the type of acid used for stop baths. In its pure form as *glacial acetic acid* (99.5 percent), it freezes at a temperature of about 61°F. Its freezing tendency gives it the name “glacial.” For use as a stop bath, 99.5 percent glacial acetic acid is diluted with water to make a 28 percent working solution. Approximately 1/2 ounce of 28 percent acetic (not glacial) acid is added to 32 ounces of water. The process of determining the concentration of a liquid is discussed in chapter 8.

FIXING

When a light-sensitive material is removed from the developing solution, the emulsion contains a large amount of silver salts (halides) that has not been affected (developed) by the developing agents. This silver salt is still sensitive to light, and if it remains in the emulsion, light ultimately darkens and discolors the salt which obscures the image. Obviously, when this action occurs, the negative (or print) is useless.

The fixing bath is used to prevent this discoloration and to make the developed image permanent. It accomplishes this by removing the undeveloped silver halides by making them water soluble. Therefore, to make an image permanent, you must “fix” the light-sensitive material by removing all of the unaffected silver salt from the emulsion.

The fixing bath contains five basic ingredients: the fixing agent, preservative, neutralizer or acidifier, hardening agent, and an antisludge agent.

Fixing Agent

All fixing baths must contain a silver halide (salt) solvent. This solvent is known as a fixer or fixing agent. The two most commonly used in photography are sodium and ammonium thiosulfate, commonly termed *hypo* (taken from their other chemical name hyposulfite). Ammonium thiosulfate is used in rapid fixers that are stronger and require less fixing time.

Sodium and ammonium thiosulfate changes undeveloped silver halide to soluble silver sodium thiosulfate. It removes this compound from the emulsion and refills the space it occupied with nonexhausted fixing solution. Therefore, the function of the fixing agent is to convert the silver salts remaining in the emulsion after development to soluble compounds and to remove these soluble compounds by constantly diluting and replacing them in the emulsion. The number of substances capable of functioning as fixing agents is small because a good fixer must meet the following requirements:

- It must dissolve silver salts without affecting the metallic silver image.
- The compounds it forms must be soluble so they can be removed from the emulsion.
- The fixer should neither swell excessively nor soften the gelatin.

Preservative

A preservative prevents oxidation of the developing agents that are carried over into the fixing bath by the film. It also prevents decomposition of the fixer. Oxidized developer in a fixing bath produces stains.

Strong acids may cause a fixing agent to decompose (sulfurize). You must add preservative (sodium sulfite) in the fixer to prevent sulfurization. The preservative prevents the acid from decomposing hypo into free sulfur, prevents discoloration of the solution because of oxidation, and aids in preventing stains.

Neutralizer

After development, the pores of the swollen emulsion retain a portion of the developer. If allowed to remain, the developer continues its activity. Even when the emulsion is thoroughly rinsed in a water bath before being placed in the fixer, some developer activity remains. This causes uneven stains in the gelatin of the emulsion and makes the negative unusable. To stop development and prevent stains, you must add an acid neutralizer to the fixer. The most frequently used neutralizer is acetic acid.

Hardening Agent

During development, the gelatin becomes softened and swells. Frilling, reticulation, scratches, and other undesirable effects may result when processing is continued without hardening the emulsion. A hardening

agent is included in the fixer to harden the emulsion in the fixing bath. The most common hardening agent is potassium alum. The hardening and toughening of the gelatin by the alum stops the tendency of the emulsion to swell but leaves it expanded and rigid enough for the washing process.

Antisludge Agent

The pH range of the fixer is limited. It must be low enough to neutralize the activity of the developer and also be high enough to prevent sulfurization. The reduced acidity of the bath is gradually neutralized by the alkali of the developer carried into the fixer by the film. When the active acidity is neutralized too far, a sludge of aluminum sulfite forms that can make the fixer useless. An antisludge agent, such as boric acid, is added to the fixer. This agent is capable of absorbing a large quantity of the developer before sludge occurs, thus lengthening the useful life of the fixer.

Time Required for Fixing

The time required for film to fix depends on several factors:

- The type of emulsion and its thickness. All else being equal, fine-grain emulsions fix faster than coarse-grained ones. Thin emulsions require less time to fix than thick emulsions.
- The type of fixing bath and degree of exhaustion. When sodium thiosulfate is the fixing agent, a concentration of about 75 percent gives the fastest rate of fixation. However, because of the tendency of hypo to bleach out the image, most fixers for negatives have a concentration between 20 and 40 percent.
- The fixing bath temperature. An increase in the temperature increases the rate of fixation. (Do not interpret this to mean that you can raise the temperature of the fixer above the temperature called for by the particular process being used.) The temperature of the fixer is not as critical as the temperature of the developer. However, you should keep all processing solution temperatures constant to avoid an increase of graininess.
- The amount of agitation. The rate of fixation is affected by diffusion of the chemicals, so agitation reduces fixation time.
- The amount of exposure. The more exposure the film has to light, the less unused silver halide to be removed by the fixer, and hence the faster the rate of fixation.

As a general rule, a film is considered completely fixed after twice the time it takes to *clear* it. Clearing or fixation occurs when all visible traces of the silver halides (a milky appearance) have disappeared. The clearing time can be determined by taking an undeveloped piece of the same type of film and agitating the film in the fixer until it clears. This procedure can be performed under normal room lights. The tongue cut from the beginning of the 35mm film may be used for this purpose.

Life of a Fixing Bath

The useful life of a fixing bath depends on several factors. One of which is the amount of material treated in the fixing bath. You cannot state accurately the exact amount of film or paper that can be safely fixed in a given amount of fixer. It is common practice to consider the fixer exhausted when the clearing time for the film is double the time it was originally. For a fixer used solely for prints, this is not easy to determine; therefore, the life of the fixer is considered ended after a given amount of paper has passed through it. This is usually about 200 8x10 prints (or equivalent) per gallon of fixer.

Using an exhausted or near exhausted fixing bath may cause the staining of films and paper. To avoid such staining, use two fixing baths in succession is the best practice. Initially, two fresh fixing baths are used. The materials are treated in the first bath until they are just cleared; then they are transferred to the second fixing bath for an equal period of time. In time, clearing time in the first bath (which is doing most of the fixation) is doubled from the original time required when the bath was fresh. When this occurs, the first bath is removed from use and replaced by the second bath. The second fixing bath is replaced by a completely fresh solution. This process is repeated as required, so the second bath is always relatively fresh. Using this procedure ensures that all film (and photographic paper) leaves the second fixer in stable condition and does not fade with time. This method is also economical, because all fixer is used to a point beyond that at which a single bath could be used.

WASHING

An unwashed or improperly washed emulsion will stain, crystallize, and fade. Therefore, the washing of the photographic emulsion is as important as any other part of processing. Removing as much of the salt and fixer

from the emulsion is essential. Only by good washing techniques can image permanence be assured.

The purpose of washing is to remove the soluble salts from the emulsion. Fixing converts silver salts into soluble salts that must be removed. If the fixing process is incomplete, even prolonged washing cannot make the image permanent. This is because the compounds of silver sodium thiosulfate remaining in the emulsion discolor in time and produce stains. Thorough washing is necessary to remove the fixing agent that, if allowed to remain, slowly combines with the silver image to produce brownish yellow stains of silver sulfide and causes the image to fade.

Water containing iron should not be used for washing. However, impurities, such as rust, dirt, or silt, can be removed by installing a 5 micron water filter in the supply line.

Seawater may be used to wash negatives if it is followed with a freshwater rinse. Salt water removes the hypo from film in about two thirds of the time required for a freshwater wash. However, a short rinse with fresh water is required to remove the salt from the film.

Temperature, chemical contamination, and rate of water change all affect the time required to wash film correctly.

Temperature

The wash should be kept within a range of 60°F to 75°F (15.6°C to 23.9°C). Within this range of wash temperatures, the warmer the water, the shorter the washing time required. However, for black-and-white film, a wash temperature of 75°F should not be exceeded. Water at temperatures above 75°F swells the gelatin and tends to inhibit diffusion. It also can damage the emulsion. Therefore, you should keep the temperature of the wash water constant with the processing solutions.

Chemical Contamination

Adding negatives fresh from the fixer into a tank of partially washed negatives nullifies the effects of previous washing, and you must start the washing procedure again. The reason for this is that the negatives with the higher concentration of fixer add enough chemicals to the washed negatives to contaminate the partially washed film. This situation can also occur if

your hands are contaminated by chemicals when you place them in the wash tank.

Rate of Water Change

The length of washing time also depends on the diffusion of the hypo from the emulsion of the material. The rate of diffusion depends on the amount of fresh water coming into contact with the emulsion. Hypo remaining in the emulsion is continually halved in equal periods of time as the washing proceeds; for example, the average negative gives up about one half of the hypo it contains in 1 minute when in direct contact with running water. After 2 minutes, one fourth of the hypo remains, and so on, until the amount of hypo remaining eventually becomes negligible. Thus the rate of washing depends upon the degree of agitation and the amount of fresh water that comes in contact with the emulsion. The minimum washing time for negatives in running water is 20 minutes when a complete change of water occurs every 3 minutes.

Rapid film washers are designed to provide a constant freshwater exchange across the film emulsion. When rapid film washers are used, such as a Hurricane type of film washer, the film can be washed satisfactorily in 5 minutes.

WETTING AGENT

After washing, water often drains from film in an irregular manner, clinging to both emulsion and base sides in drops, streaks, and uneven patterns. When such partially drained or incompletely wiped films are subjected to hot air or radiant heat, the areas under these streaks and drops of water dry much more slowly than the surrounding film. The swollen gelatin at these points is subjected to stresses and shrinks unevenly, changing the density of the silver image. When surplus water is removed from the emulsion side and drops of water remain on the base side, drying of the emulsion immediately opposite the water spots is retarded and drying marks usually result. The use of a wetting agent helps to prevent the formation of these water spots.

Wetting agents are chemicals that “superwet” the film to promote faster and more even drying. Wetting agents are chemically different from soaps, but they perform a related function. They all lower surface tension of liquids so the film surfaces are wetted quickly and evenly. Kodak Photo-Flo is a wetting agent used in imaging facilities.

After washing, bathe the film in a 1- or 2percent solution of wetting agent (prepared according to instructions provided by the manufacturer) for about 2 minutes. Then drain the film briefly for about 30 seconds. Squeegee the film between your index and middle finger to remove surface foam and excess wetting agent. Be sure your hands are clean and dampened with the wetting solution before squeegeeing the film.

DRYING

The final step in processing is to dry the wet film. This step should be given special attention. Film drying has two distinct phases. The first is the removal of excess water from the film surfaces. The second is the drying of the film by evaporation.

When you are drying the film, the primary problems you must guard against are uneven drying, dust, scratches, and damage to the emulsion caused by overheating. Dry the film in a vertical position, hanging it from a line or beam by film clips. When you are drying roll film, curling can be avoided by hanging another film clip at the bottom of a strip of film. Sheet film should be hung from one corner of the film to prevent drying streaks. Film should not normally be dried in the hanger or reel in which it was processed, since *uneven drying results*.

Dust and water spots are the problems you encounter most frequently when drying films. When the dust is not embedded in the emulsion, you can remove it with a camel-hair brush. Embedded dust in the film requires the film to be rewashed and dried properly. Water spots are more serious, since uneven drying can cause not only white stains but also small craterlike formations in the film under each spot. The white stains can be removed with alcohol, but the craterlike spots become a permanent defect. The best cure is prevention. You can avoid these problems by keeping the film surface clean and by using a wetting agent before drying.

The photographic emulsion consists of one or more layers of gelatin with silver halides of varying sizes distributed through the layers. After exposure and development, the halides are changed to metallic silver that occupies space and does not absorb water. In an emulsion that is unexposed, the undeveloped silver salts are made soluble and are removed from the emulsion during the fixing and washing stages. Only the gelatin and the space occupied by the halides remain, and these do absorb water. Because of these conditions, dense

negatives, or negatives containing many heavily exposed areas, contain less water and dry faster than thin negatives. When you think about this for a moment, you can see that since the heavily exposed and lightly exposed areas are distributed randomly throughout the average negative, drying occurs rapidly in the dense areas, more slowly in the intermediate areas, and most slowly in the thin or unexposed areas. Obviously, then, film does not dry uniformly.

When gelatin dries, the water it contains must first migrate to the surface and then evaporate into the air. Ideally, these processes should take place simultaneously and at the same rate. However, when the surface moisture evaporates too rapidly, the surface becomes hard, and the internal moisture is unable to escape it. In addition, when drying is too rapid, the outer surface shrinks while the rest of the gelatin layer is in an expanded state. This causes strains that can have a harmful effect upon the emulsion.

For a negative to dry, it must be surrounded by dry air; that is, air that contains a lower relative percentage of moisture than the gelatin. When the heated air circulates, the damp air moves away from the surface of the wet film and replaces it with dry air that permits the drying process to continue. This is the principle behind the air impingement dryers currently in use. Heated air accepts more moisture than cool air. When the air does not move, air can become heated and rapidly reach a state of equilibrium with the moist film, and drying stops.

In an air impingement drying system, air is warmed and blown against (impinges upon) the surface of the wet film. The warm, dry air picks up moisture and moves on. It is immediately replaced by more warm, dry air, and the process continues until the film is dry. The rate of drying is controlled by adjusting the velocity, temperature, and humidity of the air in the drying chamber. In hot and humid climates where the air is saturated with moisture, the air must be passed through a dehumidifier before it enters the drying chamber. When this is not done, the film does not dry. In dry climates, you must reduce both the heat and the air velocity to prevent overdrying.

Photographic films begin drying at the corners and edges as well as in the areas of heaviest density. This introduces strains in the direction of the dry areas. As a film continues to dry, the strains gradually begin to equalize, and the film, when dried properly, ultimately lies flat. The surface is not moist to the touch, but it is firm and soft enough that flexing does not damage it. If

overdried, the film curls toward the emulsion and can become brittle.

The rate of drying and the amount of curl also depend upon how thick the emulsion layer is and whether or not the film has a gelatin backing. Naturally, the thicker the layer, the longer the drying time. A gelatin backing takes time to dry, but it introduces an opposing curl and causes the dried negative to lie quite flat.

FILM PROCESSING EQUIPMENT

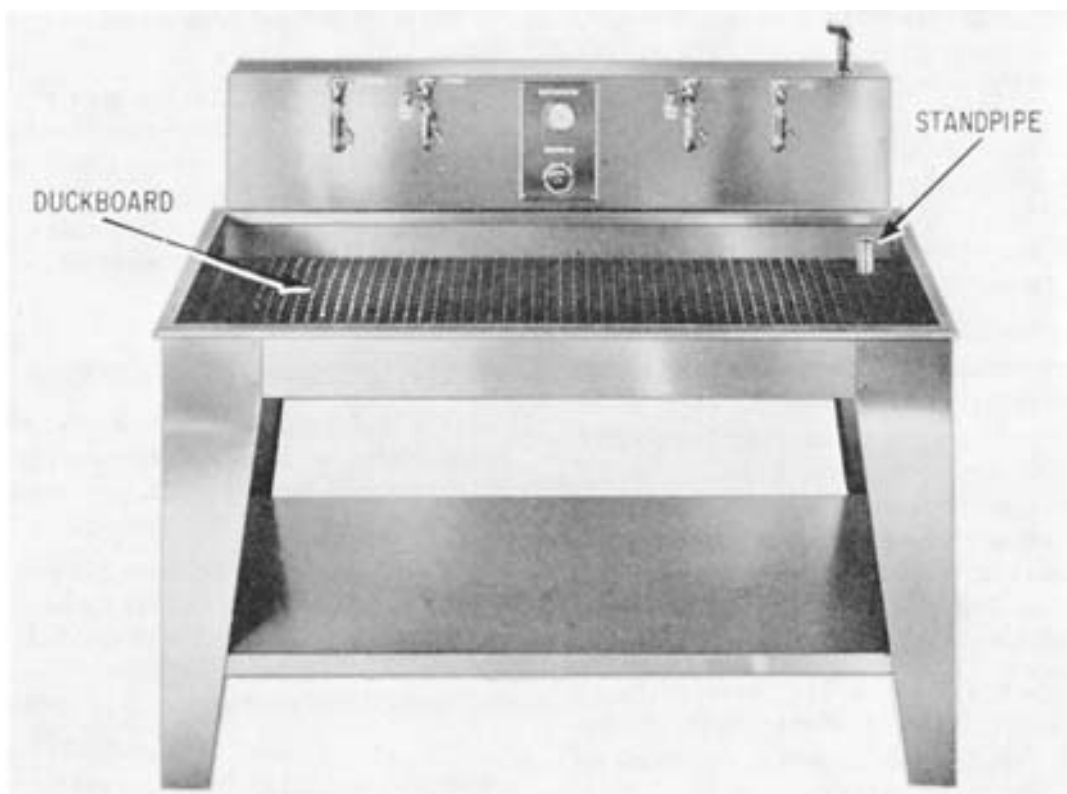
Hand processing of photographic film is best carried out in a darkroom that is properly equipped. Whether the darkroom is large or small, certain essentials are necessary for good quality processing.

The darkroom must be clean and well ventilated. Shelves, bottles, racks, processing equipment, walls, and floors that are spotted with dried chemicals are harmful to photographic images. Navy photo lab equipment, therefore, must always be spotlessly clean.

The arrangement of a darkroom should be convenient, "a place for everything and everything in its place." There should be adequate and correct safelights placed at recommended working distances. Only necessary sensitized material should be in the darkroom. Temperatures in the lab should be maintained as closely as possible to the normal processing temperature—about 70°F to 75°F. The well-equipped darkroom should contain the following items: sink, graduates, required chemicals, waterproof aprons to protect clothing, clean towels, accurate thermometer and timer, and the necessary film hangers, trays, reels, and tanks. All darkrooms should be well stocked with prepared chemicals in containers that are labeled properly. In general, good photographic quality demands that all work must be conducted in a clean, orderly, and systematic manner.

DARKROOM SINKS

Sinks in the photographic darkroom should be sized adequately and constructed properly. Most sinks in Navy labs are factory-made and meet all the requirements for photographic work. Sinks should be big enough and built so they drain thoroughly. The sink should have *duckbords* to keep trays and tanks off the bottom and to permit water to circulate under and around the solution tanks to maintain correct and constant temperatures. Sinks, also, should have a mixing valve to control the temperature of the water in the sink and a



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Figure 10-1.-Photographic processing sink

standpipe to hold water in the sink at the correct depth, yet still allow water to flow out (fig. 10-1).

SAFELIGHTS

The function of a safelight is to transmit the maximum amount of light that can be used safely without damaging the sensitized materials being processed. The color sensitivity of different sensitized materials varies. Therefore, the color and intensity of transmitted light must be varied accordingly. A darkroom safelight is the combination of a rated light source and a filter designated to protect a specific sensitized material.

The word *safe*, of course, is a relative term since no sensitized photographic materials are ever completely safe from the effects of safelight illumination. However, a filtered light is accepted as safe when the sensitized materials can be handled under the illumination with no evidence of fogging for at least twice as long as the normal processing time. No procedures must be followed precisely when safelights are used:

- Use only the size of incandescent bulb specified; for example, 7 1/2 watt, 15 watt, or 25 watt.

- Handle sensitized material at the distance recommended by the manufacturer. This is usually between 3 and 6 feet.

To determine whether a safelight is safe, you should follow these procedures:

1. In the dark, place a sheet of unexposed film, emulsion-side up, on the working area where the film is to be processed.

2. Place several coins on the emulsion and turn on the safelight. Leave the safelight on for twice the length of time the film will normally be processed.

3. Process the film normally and check to see whether there is less density in the areas covered by the coins. When there is less density, it indicates the film was fogged by the safelight and the safelight is not safe. A safelight that causes fogging may be corrected by replacing the filter, by installing a lower rated bulb, or

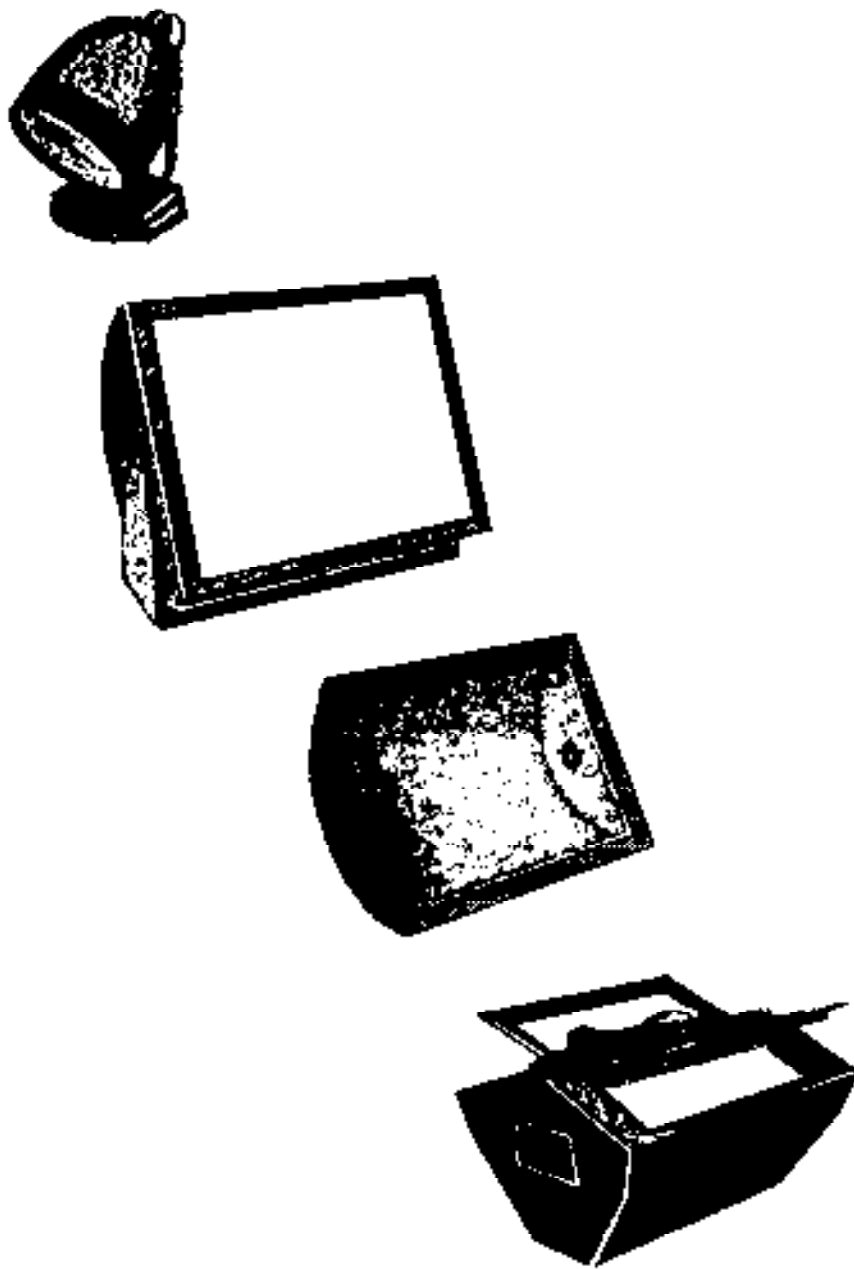


Figure 10-2.—Safelights.

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by increasing the distance between the safelight and the material. Safelight filters are covered in chapter 3.

A safelight is most efficient when its output of illumination is indirect or reflected. When the safelight is not constructed on the indirect principle, it should never be pointed directly at the sensitized material; it should be placed so the light beam is away from or at an

angle to the sensitized material. Figure 10-2 shows safelights used in photographic darkrooms.

SHEET FILM HANGERS

Sheet film hangers are made of stainless steel or plastic that resist corrosion in photographic solutions

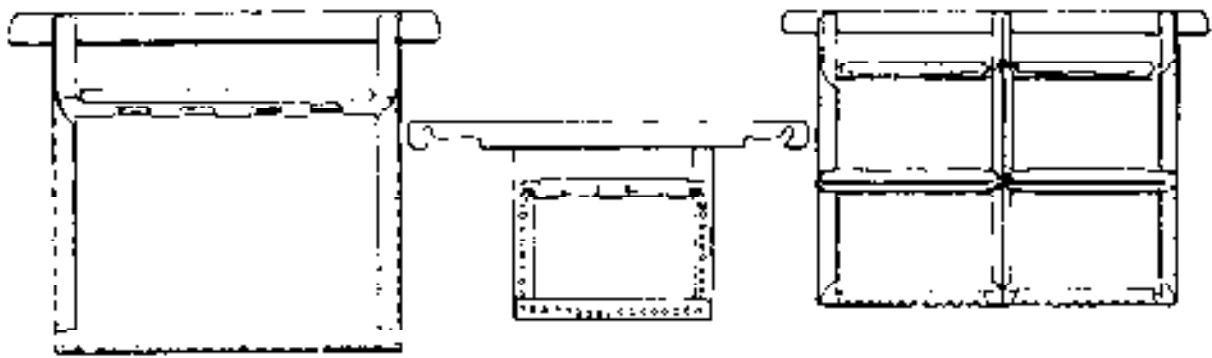


Figure 10-3.—Sheet film hangers.

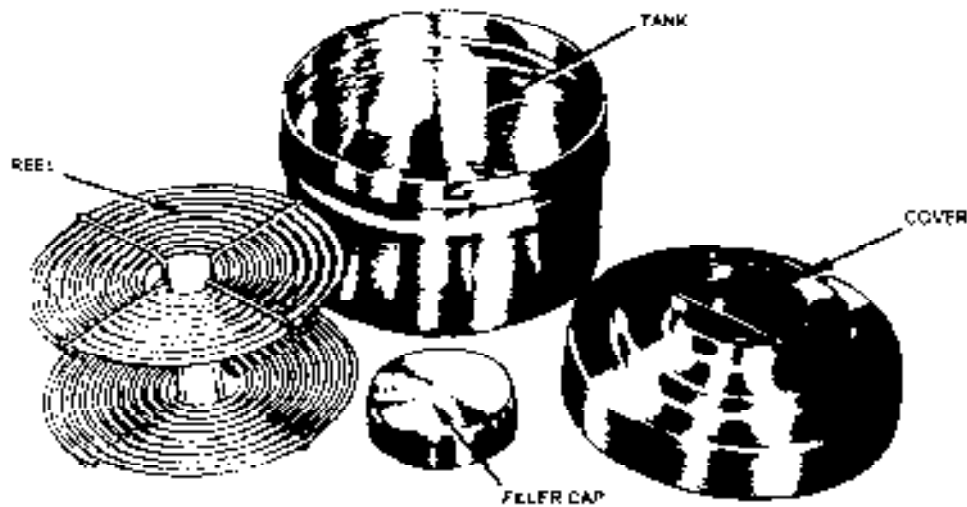


Figure 10-4.—Roll film processing tank and reel.

(fig. 10-3). They are constructed of perforated metal or plastic and channeled to receive and suspend film in solution. This allows the solution to circulate freely over the film surface. Sheet film hangers are used in tank developing and their use is described later in this chapter.

ROLL FILM TANKS AND REELS

Hand processing of roll film is usually done on reels in roll film tanks. The center-feed reel and tanks used most commonly in the Navy are made of stainless steel. The film is wound onto a spiral reel. The reel is then placed into a tank for processing (fig. 10-4).

TRAYS

Trays used for processing photographic film (roll or sheet) are the same as those used for processing photographic prints. They may be made of any material that is not affected by, or cause contamination of,

photographic solutions. Most trays used today are made of stainless steel or plastic.

SHEET FILM DEVELOPING TANKS

Tanks used for developing sheet film come in a variety of shapes and sizes. They are usually made of stainless steel.

To process sheet film in tanks, load the film into sheet film hangers and then place it into the developing tanks of solutions (fig. 10-5).

FILM WASHING EQUIPMENT

Film washing does not require special equipment. Sheet film can be washed in the same type of tank or tray that is used to process the film or in tanks designed for film washing.

When a tray is used, only one film at a time should be washed. When more than one piece of film is washed at a time, the films will probably rub together and be

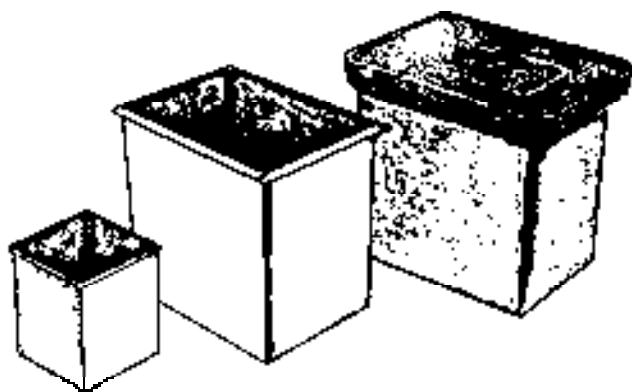


Figure 10-5.—Film developing tanks.

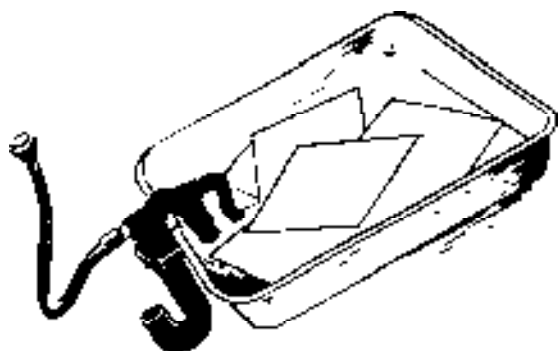


Figure 10-6.—Washing film in trays.

scratched. Only line copy types of negatives are usually washed in a tray.

The most effective washing method in a tray is when a siphon device is attached to the edge of the tray. The device siphons water from the bottom of the tray, while fresh water enters at the top (fig. 10-6). Because fixer is heavier than water, it sinks to the bottom of the tray.

The best way to wash hand-processed sheet film (especially more than one sheet at a time) is in a sheet-film washing tank. Film hangers hold individual negatives suspended separately in the tank. Fresh water flows into the bottom of the tank and runs out around the sides at or near the top of the tank (fig. 10-7). When you place the film hangers into the tank, ensure the negatives are separated, so sufficient fresh water reaches all areas of each negative.

WARNING

Aboard ship, hoses attached to potable water spigots can back siphon chemicals or wash water from the trays or sink into the drinking water supply. These hoses must have a backflow preventer installed in the plumbing system.

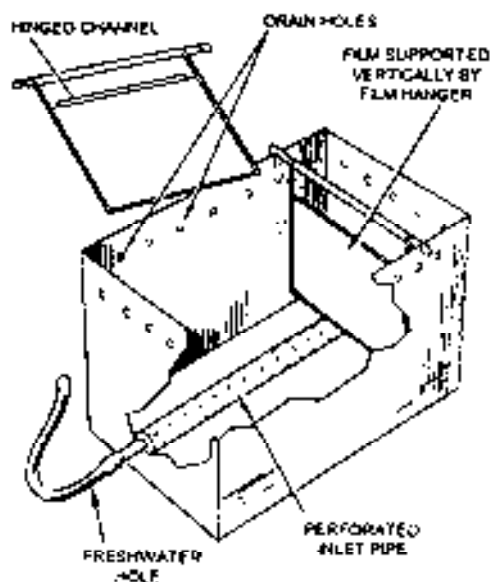


Figure 10-7.—Film washing tank



Figure 10-8.—Rapid roll-film washer. 237.126

A rapid roll-film washer is excellent for washing hand-processed roll film. It is a cylindrical tank, large enough to hold several spiral reels. The washers come in a variety of sizes that will wash from two 35mm reels to as many as six or eight 120 reels (fig. 10-8).

The rapid roll-film washer is constructed so the wash water enters the tank at the base and flows up

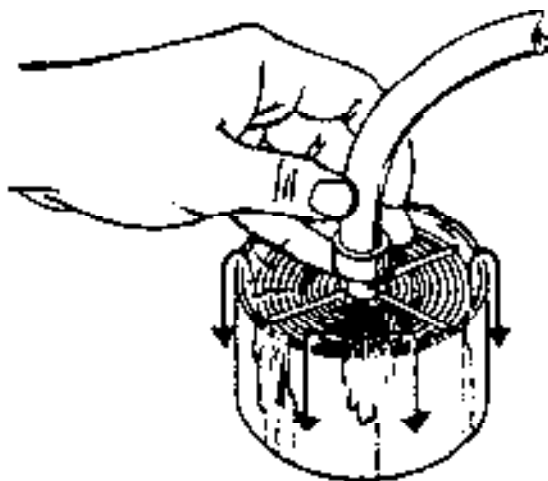


Figure 10-9.—Washing film in processing roll-film tank.

through the tank and around the film at a rapid rate. By discharging the water from the top of the tank, you can remove more hypo in a shorter time.

Roll film also can be washed in the roll-film tank in which it was processed. To wash roll film in a roll-film processing tank, simply push a small hose down into the center of the reel and have the faucet turned on, so the water overflows steadily from the tank (fig. 10-9).

TIMERS

Every darkroom should have a reliable timer. Ideally, the timer should have both a minute hand and a sweep second hand. The timer most commonly used in the Navy is a Gray Lab timer (fig. 10-10). Not only does this timer have a minute and sweep second hand but the numbers and hands are fluorescent so they can be seen in the dark. A Gray Lab timer also has an alarm (buzzer) that indicates when the time for processing is up.

PROCESSING METHODS

No matter how many rolls or sheets of film you develop, it helps when you carry out the processing in three distinct phases, beginning with preparation. First, your work area must be clean, and the equipment needed must be arranged so it is easy to locate in the dark. The second phase is processing. If you are not familiar with darkroom work, you should complete ALL the processing steps with dummy or practice film and water to substitute for processing solutions under white light and then practice a few times in the dark. The third phase is film drying.



Figure 10-10.—Gray Lab timer.

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To make the latent image visible and permanent, you must process the film in different chemical solutions. There are five steps in the black-and-white processing phase. The first step is development. In this step the film is placed in a developer that transforms the latent image into a visible black metallic silver image. In the second step the developing solvents are neutralized, and development is retarded or stopped by a rinse bath or acid stop bath, respectively. The third step involves placing the film into a fixing bath to remove the light sensitive, undeveloped silver halides. The fourth step is to wash the film to remove all the chemicals, and the last step is to dry the film. Each of these steps is explained further in this chapter, since there are certain controls that must be applied to each step.

Some of the processing steps may be carried out in white light, while others *must* be done under appropriate safelight conditions or in total darkness. The steps that must be done in darkness or under suitable safelight conditions begin when the film package, holder, or roll is opened and end when the film is removed from the fixer.

As discussed earlier, there are five steps in film processing. The steps and the lighting conditions under which they are carried out are as follows:

1. Development-dark or appropriate safelight
2. Rinse or stop bath-dark or appropriate safelight

3. Fix-dark or appropriate safelight
4. Wash-white light
5. Dry-white light

In addition to exposure, there are four factors in development that control image density, contrast, and, to a limited degree, the uniformity of individual densities in a negative. These four factors are the type of developer used, development time, temperature of the developer, and agitation as follows:

- **Type of developer.** One type of developer cannot cover all film exposure/processing situations. For example, film exposed under poor lighting conditions may require a vigorous developer to bring out as much image detail as possible, while film exposed under normal conditions requires a normal working developer. There are many different developers, each provides a different activity and quality of development. The actual choice of the developer to use depends on the following: the type of film, conditions under which it was exposed, type of negative required, developing time that is best for the method of development to be used, and the manufacturer's recommendation.

- **Time and temperature.** Many factors must be considered if you want to ensure correct development during film processing. Two of these factors are the length of time the film is allowed to develop and the temperature of the developer solution. Both factors can have a significant impact on the quality of the processed film.

As explained earlier, the activity of a developer increases as its temperature increases. Film development carried out for a given time at a given temperature produces both predictable and desired results—assuming, of course, that the film has been exposed properly. When film is developed for a given time at a given temperature, it is called "time and temperature development."

In the time and temperature method of film processing, as in any method of film processing, if the film is developed for too short a time or at too low a temperature, a weak, low-contrast image results. Underdevelopment can result in insufficient highlight density. On the other hand, if the negative is developed for too long a period or at too high a temperature, the result is a negative having too much density. The developer solution overdevelops the exposed areas and may even develop some of the unexposed silver halides.

For correct development, both time and temperature must be accurately controlled. Within limits, time can

be adjusted for a given temperature, or temperature can be adjusted for a given time.

There is a definite correlation between time and temperature. When it is impossible to maintain solution temperature at the desired level, time can be shortened or lengthened to compensate. As the temperature increases, developing time must be decreased to provide equivalent development. As the temperature decreases, development time must be increased.

The normal temperature for hand processing most black-and-white film is 68°F (T-Max film with T-Max developer is 75°F). There are several reasons for this standardization. At a temperature of 68°F, the gelatin swells sufficiently to allow adequate penetration of the developing solution without oversoftening to the point where it is easily damaged (which occurs at higher temperatures). Temperatures lower than 68°F slow development excessively. Only when time is of the utmost importance are accelerated temperatures used. In most instances when high temperatures are used, the film is treated in a hardening bath before processing, or the film is designed specifically for being processed at such temperatures. Since a rise of several degrees in temperature shortens development only a small amount, there is little to be gained by deviating from standard processing temperatures.

When you know the time and temperature relationship for a given film and developer combination, processing in total darkness becomes simple. You simply adjust solutions to the prescribed temperature and then process the film for the required time. Assuming proper exposure, time and temperature processing can produce a correctly developed negative without your having to see what is happening in the solution.

All solution temperatures (developer, rinse, fix, and wash) should be as close to each other as possible. When there is considerable difference in the temperature of the solutions, excessive graininess may result, or the emulsion may be subject to excessive expansion and contraction that causes it to wrinkle or crack. This effect is called *reticulation*. Since reticulation is not correctable, it causes the negative to be useless for printing.

The temperature of solutions may be adjusted by surrounding them with hot water, cold water, or ice. Never add water or ice directly to a solution because it dilutes the developer to an unknown degree. Ice may be placed in a container and suspended in the solution. An immersion heater may be used in the solution to raise its temperature.

• **Agitation.** If a film is placed in a developer and allowed to develop without movement, the chemical action soon slows down because the developing agent in contact with the surface of the emulsion becomes exhausted and bromide (a restrainer) is released as a by-product. When the film is agitated, however, fresh solution is continually brought to the surfaces of the film, and the rate of development remains constant. Therefore, agitation also has an important effect on the degree of development. An even more important effect of agitation is it prevents uneven development. If there is no agitation, the exhausted solution that became saturated with bromide from the emulsion may flow slowly across the film from the dense highlight areas and produce streaks. Constant agitation is usually recommended for the first 30 seconds of tank development and for the entire developing time when the film is being processed in a tray. After the initial 30-second agitation cycle, the film should be agitated for 5 seconds, once every minute during the remaining time.

The time, temperature, and amount of agitation required for a film/developer combination are recommended by each manufacturer of film or developer. These recommendations are in the instructions that accompany the film or developer. Another reference source is the *Photo-Lab-Index*.

There are three different methods of processing film by hand. These are as follows: the *tray*, the *sheet-film tank*, and the *roll-film tank*. Each method is discussed here with an example of the darkroom arrangement used.

TRAY PROCESSING

The tray method is used primarily for processing only a few sheets of film. With a lot of experience, you can process as many as 6 to 12 sheets of film in a tray at one time. You will find it easier to work with only a few sheets of film at a time, and repeat the process, than to start all the sheets at the same time and damage them.

The tray processing method described here has proven satisfactory under most conditions for processing one sheet of film at a time. You should use this method as described and develop the necessary skill using this procedure before you attempt to use variations.

The trays should be considerably larger than the film being processed; for example, 4x5 film should be processed in 8x10 trays, 8x10 film in 11x14 trays, and

11x14 film in 16x20 trays. Ideally, the trays should be arranged in a shallow sink that contains temperature-controlled circulating water. The trays should be arranged with the developer to your left as you face the trays. The stop bath goes next to the developer, followed by the fixer and the wash tray.

In all Navy imaging facilities, it is standard procedure when processing film (or prints) by hand to work from left to right.

Rinse the trays with fresh water as a precaution against contamination, and prepare the solutions. When the solutions are ready, place the exposed film holder to be unloaded on a clean, dry area of the workbench near the developer. Set the timer for the correct developing time, and place it in a convenient location near the processing solutions. Then, if you are processing panchromatic film, turn out all the lights. If you are processing monochromatic or orthochromatic film, you can use a suitable safelight.

Remove one sheet of film from the holder and submerge it quickly, emulsion-side down, into the developer. Then immediately turn it over (emulsion-side up) and slide it back under the surface of the developer quickly, and agitate it vigorously to eliminate possible air bubbles. The surface of the film must be wetted quickly and evenly; otherwise, developing marks may result. Start the timer just before the film is placed into the developer.

During tray development, the tray should be rocked continuously to provide constant agitation. Be careful that the tray rocking is not too fast and that it is varied at intervals; for example, first front to back, and then side to side to avoid patterns of uneven development caused by regular waves.

CAUTION

Do not allow your fingernails to touch the film emulsion at any time.

Tray development involves constant agitation, and development time is usually about 20 percent less than if the same film were being developed with intermittent agitation. When tray agitation is done very slowly, the agitation should be considered intermittent and the developing time adjusted accordingly.

When the timer rings, remove the film from the developer, drain it from one corner, and submerge it in the stop bath. Agitate the film in the stop bath for about 5 seconds; then transfer it to the fixer. You must agitate

the film vigorously in the stop bath and initially in the fixer because gases are released in these solutions and there is danger of air bubbles forming on the film surface. If you allow these air bells, or bubbles, to form, they may cause dark spots. This is due to the continued action of the developer beneath the bubbles. Agitate the film in the fixing bath for a few seconds and then the safelights or the white lights may be turned on. Continue agitating the film until it loses the cloudy or creamy appearance. Note the time required for this change to occur because it is just half the total required fixing time. Agitate the film several times during the second half of the fixing time. After the film clears, continuous agitation is not necessary.

After fixing is completed, transfer the negative to the wash water and continue to agitate it unless a regular film washing tank or tray is available. After washing is complete, the film should be treated in a wetting agent and dried.

As stated earlier, with experience you can process several sheets of line copy film at a time in a tray. When processing several sheets in a tray at once, there is an added step. This is a predevelopment rinse in clean water that should be at the same temperature as the rest of the processing solutions. The predevelopment rinse is located to the left of the developer. Its purpose is to prevent the films from sticking together in the developer.

The procedure for processing more than one sheet of line copy film at a time is the following:

1. When the solutions are ready, place a dry, dust-free paper or cardboard on the workbench near the predevelopment rinse. Place the exposed film holders near this clean working space.

2. Set the timer.

3. Turn out the lights.

4. Remove one film from its holder and place it, emulsion-side down, on the clean paper. Remove the second film and place it, emulsion-side down, on top of the first. Continue until all the film is placed in a loose pile on the space provided for them.

5. Pick up the film on top of the pile with your left hand (keep it dry until all films have been placed in the water), drop it, emulsion-side down, into the water, and immerse it quickly with your right hand. Pick the film up immediately, turn it over, emulsion-side up, and push it back under the solution. Place the wet film, emulsion-side up, at one end of the tray. Immerse the next film in the same manner. Stack it on top of the first

film, and continue with this procedure until all the films are stacked in a pile at one end of the tray. Your left hand should follow the last film into the tray to assist in the agitation of the films.

Wet film may be handled with wet fingers. However, be extremely careful to **KEEP WET FINGERS OFF DRY FILMS**. Slight pressure with the balls of the fingers is not harmful to a wet emulsion unless it has swollen excessively.

The films should be agitated or shifted constantly to prevent the individual sheets from sticking together. Agitation is accomplished by moving the first film from the bottom of the stack and placing it on top or by starting a new stack at the other end of the tray. Continue agitating the films from bottom to top until they become completely saturated with water-about 1 or 2 minutes is sufficient. After the emulsion is completely saturated, the danger of films sticking together is no longer a problem.

6. Remove the films, one at a time, from the predevelopment rinse and immerse them in the developer. Place the films in the developer, emulsion-side up; slide them under the surface of the solution quickly, and agitate them vigorously to eliminate possible air bells. Start the timer just before the first film is placed in the developer. Use your left hand to remove all films from the water, and be careful not to get the water contaminated with developer. Your left hand should follow the last film transferred from the water into the developer to help with the agitation.

It is important for you to locate the first sheet of film placed in the developer quickly. To do this, align the long dimension of all other films at a right angle to the first sheet placed in the developer.

The films are immersed, emulsion-side up, in the developer to reduce greater damage that would occur if the emulsion, already softened by presoaking, were allowed to come in contact with the bottom of the tray. Be careful not to dig or drag the corner or edge of a film into the emulsion surface of the film below it. Do not allow your fingernails to touch the emulsion at any time. Stacking films by aligning their edges against the sides of the tray helps to reduce scratches and abrasions.

7. Agitate the films constantly, not by rocking the tray, but by moving each film from the bottom of the stack and placing it carefully on top, and pressing it down gently to assure a flow of solution over its surface. Continue this procedure until the developing time is up.

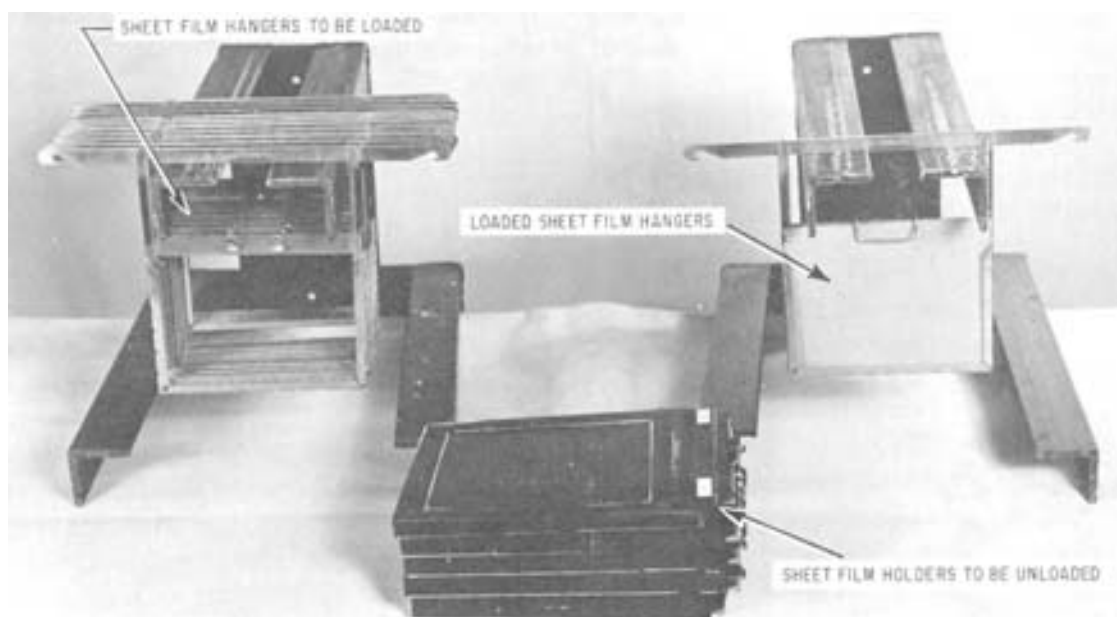


Figure 10-11.—Sheet film hangers arranged for tank processing.

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8. When the timer rings, remove all the films from the developer in the same order that they were placed in the developer, and submerge them in the stop bath. Your right hand should go into the stop bath with the first film and stay there to handle each film as it is transferred from the developer by your left hand. Use your left hand only for transferring the film to avoid contamination of the developer or spotting of the film. A few drops of developer will not affect the stop bath or the fixing bath, but a few drops of either of these solutions could ruin a developing solution.

9. After all the films have been shifted several times in the stop bath, they should be transferred individually to the fixing bath or hypo. Shift the films several times in the fixing bath, agitating them vigorously. Then safelights or the white lights may be turned on. Continue shifting the films until they lose the cloudy or creamy appearance. You must shift the films several times during the second half of the fixing time, but continuous agitation is not necessary.

10. After fixing is completed, transfer the negatives to the wash water and continue agitation unless a regular film washing tank or tray is used. The negatives also may be put in regular film hangers for washing.

11. Treat the film in a wetting agent and dry it.

TANK DEVELOPING SHEET FILM

Tank development is the recommended method for hand processing of orthochromatic and panchromatic sheet film. The solutions and the tanks are deep enough to cover the films in the vertical position completely. The films are supported individually in the tanks by the film hangers. Films supported in this way are much less subject to damage. The solutions last longer when used in tanks and can process more films than when they are used in trays.

Tank development for sheet film requires tanks to hold the solutions, and racks, reels, or hangers to support the films while in the solutions. The solutions used should have good-keeping qualities, and they should be the type that can be replenished by adding fresh solution or replenisher, so the volume in the tanks can be maintained at the proper working level.

The minimum number of tanks that can be used is three: one each for developer, stop, and fixing bath. However, when a predevelopment rinse is used, four tanks are needed.

The tanks are arranged in the processing sink submerged in enough water to maintain the solutions at the prescribed processing temperature. Again the process is arranged so you work from the left to right.

The film hangers are simply channeled frames suspended below a bar. The bar is long enough to reach across the tank and allow the frame to hang below the surface of the solutions. The frame has channel pieces on the bottom and both sides and a hinged channel across its top. Each hanger holds from one to four films. The hangers accommodate standard film sizes, such as 4x5, 8x10, and so forth. After the films are loaded into the hangers, they may be carried through the entire process without being touched by the hands.

The darkroom should be checked using the steps common to all film processing, as explained earlier in this chapter. After you check the solutions and their arrangement, check the temperature of the solutions, and check the safelights. Then arrange an adequate supply of clean, dry, empty film hangers on a rack, and an empty rack to hold the loaded film hangers (fig. 10-11). If the darkroom is not equipped with racks to hold the film hangers, clean, dry tanks can be used to hold both unloaded and loaded hangers. Set the timer, place the exposed film holders between the empty film hangers and the rack or tank that is used to hold the loaded hangers, and turn out the lights.

To load a sheet film hanger, remove one of the sheet films from its *holder*. Take a *hanger* in one hand and place the thumb at one end of the hinged channel. Bush the hinged channel up and back with the thumb until the film can be slid along the inside of the end channels to the bottom of the frame. **HANDLE THE FILM BY THE EDGES ONLY.** Make sure the film is seated properly in the three channels of the hanger. When the film is seated properly in the side and bottom channels, bring the top channel forward and down over its top edge (fig. 10-12). This encloses all four sides of the film in the channeled frame. The hanger should be given a slight shake to ensure that the film is in place. Set the loaded hanger on the rack or in the empty tank to hold it.

The film should be loaded onto the hangers with the emulsion side facing you. This prevents the top channel from scratching the emulsion as the film is slid into the frame. Load the other film to be developed in the same manner. However, do not load more hangers than can be handled conveniently in the tanks at one time.

When the hangers are loaded, lift all of them by their crossbars and lower them into the predevelopment water rinse, if one is being used. They should be lowered into the tank until the hanger crossbars rest on top of the tank. The predevelopment water rinse is optional when using the tank method of development, but the water rinse has the following advantages:

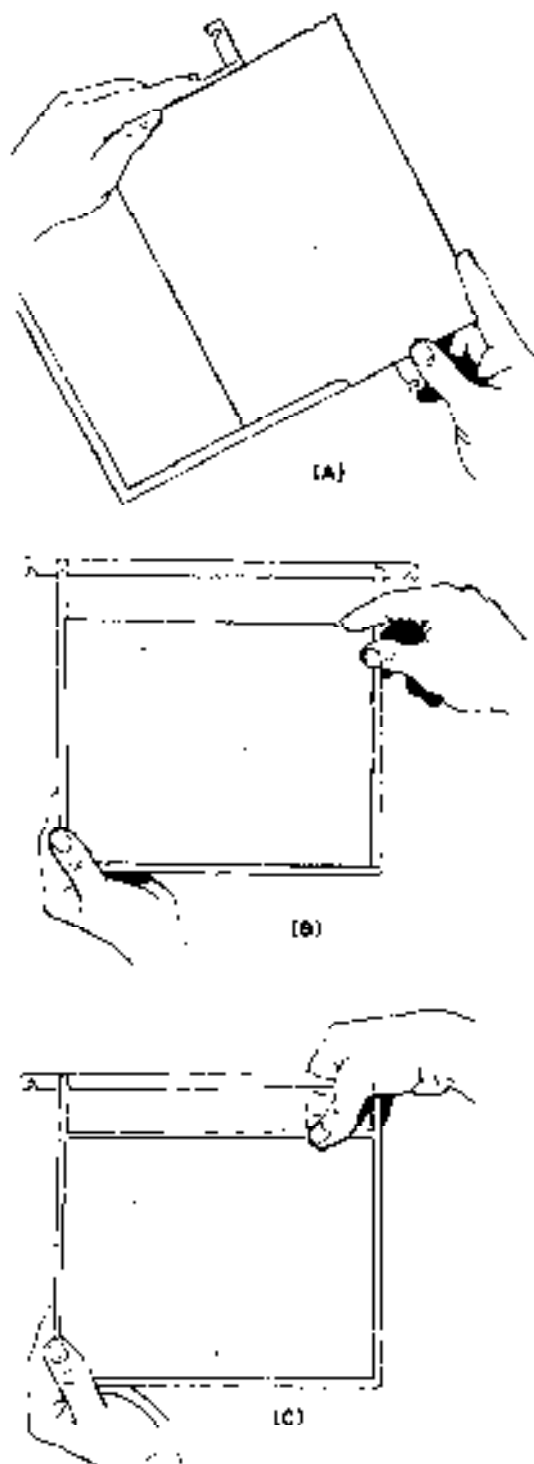


Figure 10-12.—Loading a sheet film holder.

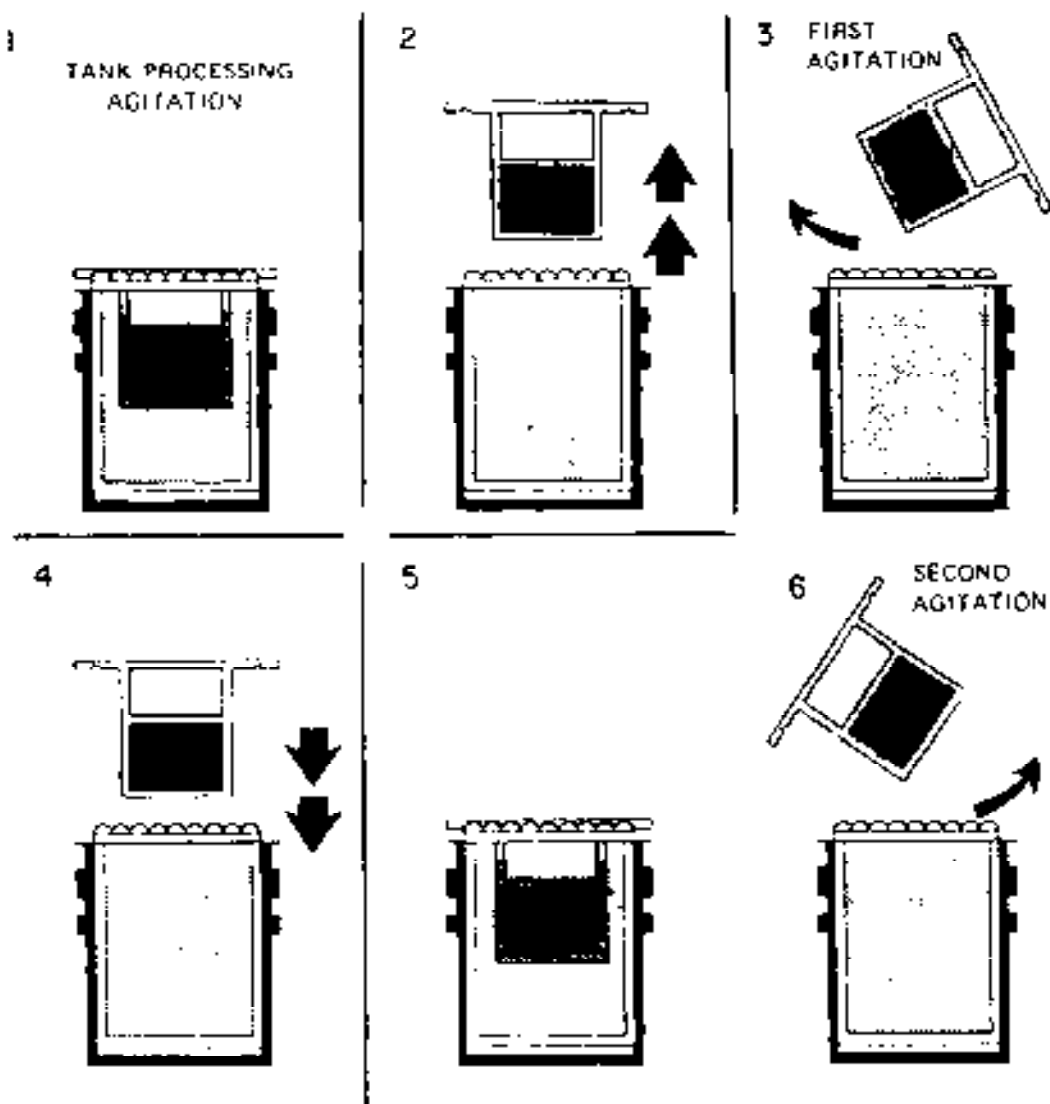


Figure 10-13.—Sheet film tank processing agitation.

- The air bubbles that usually occur when dry film is immersed in a solution can be removed without harmful effects in the predevelopment water rinse.

- When the water-softened emulsion is placed in the developer, the action of the solution begins uniformly over the entire emulsion. Thus uneven or streaky development is avoided.

- The predevelopment water rinse removes the antihalation backing dye that interferes with the action of some developers.

- The predevelopment water rinse brings the temperature of the film and the hangers to the processing temperature. Maintaining constant temperatures in all of the processing solutions is very important.

The predevelopment water rinse is given by immersing the loaded hangers in a tank of water and agitating them for about 2 minutes. The temperature of the water should be the same as that of the other processing solutions. The loaded hangers are then lifted out of the water, drained by one corner, and processed in the usual manner.

Immerse the hangers in the developer slowly and smoothly to avoid splashing or the formation of air bells. Air bubbles usually result when films are immersed rapidly, especially when a predevelopment water rinse was not used. All the hangers should be immersed simultaneously to assure uniform agitation and development.

Strike the hangers sharply against the sides of the tank several times to dislodge any air bubbles that may

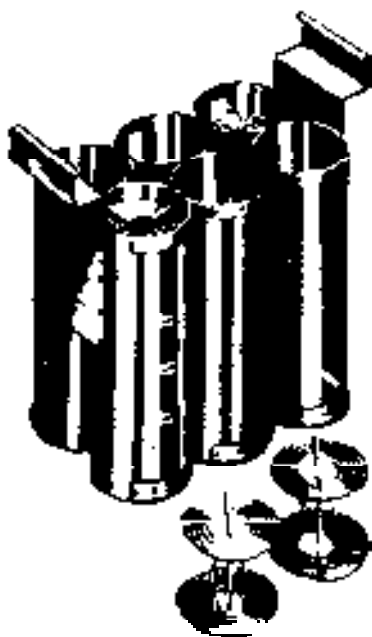


Figure 10-14.—Reel processing rack.

have formed. Start the timer and agitate the film for 1 minute. After the first minute of development, agitate for 5 seconds at 1-minute intervals.

The processing tank usually has enough space for several additional hangers. However, this space is needed for proper agitation of the film hangers. Agitation should be accomplished by lifting the hangers out of the tank draining them momentarily from a different corner each time, and replacing them in the solution (fig. 10-13). Hangers should not be agitated too vigorously from side to side. This forces the developer through the holes in the hangers at high speed, causing developing trails near the holes. The objective is to assure an even flow of fresh solution over the surfaces of the films regularly according to a fixed schedule.

About 10 seconds before completion of the developing time, lift each of the hangers out of the solution, let them drain for 10 seconds, then lower them into the stop bath. Agitate them several times in the stop bath, drain them, lower them into the fixing bath, and agitate them constantly for 2 or 3 minutes.

The fixing and the washing requirements are the same as described previously in this chapter. When washing is complete, place the film hangers and film into a wetting agent; then remove each sheet from its hanger and hang it up by one corner to dry.

When the film is dried in the hangers, there is a number of drying marks along the edges of the film, thus reducing the actual usable size of the negative image. It is better to suspend each film individually from a line

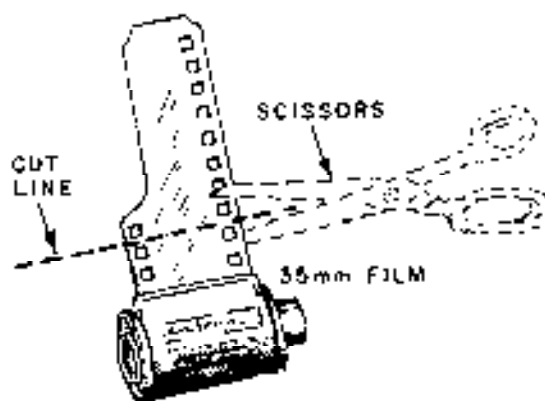


Figure 10-15.—Cutting leader tab film 35mm film.

with a film clip. Dry the hangers, *after washing them in hot water*, without film in them.

With suitable racks designed to hold reels, roll film can also be processed in tanks (fig. 10-14).

TANK DEVELOPING ROLL FILM

The most convenient and reliable way to hand process roll film is in a small roll-film tank. The construction of tanks and reels differ somewhat among the various manufacturers' models, resulting in differences in loading and use. Generally, the basic unit used in Navy imaging facilities consists of a stainless steel, center feed, spiraled reel to hold the film; a tank with a lighttight cover; and a filler cap. Each reel is constructed for a specific size roll of film; for example, 35mm, 120, and 220. The tank top permits pouring the chemicals in and out of the tank under white light conditions. The tanks come in sizes to hold from one 35mm reel to as many as eight 35mm reels or five 120 reels. Small roll-film tanks of all metal construction (tanks, lids, caps) should be numbered or marked in such a way that prevents mixing different tanks, lids, and caps.

The proper loading of a film reel *in total darkness* can be the most important steps and challenges in processing roll film.

When processing roll film with a paper backing, the paper tape sealing the exposed roll should not be broken until the lights have been turned out. Also, for 35mm film, the cassette should not be opened until the lights have been turned out. If a short length of film is left protruding from the 35mm cassette when the film is rewound, you do not have to open the cassette to remove the film. The leader or loading tab on 35mm film can be cut off square while in the light to ease loading of the spiral reel (fig. 10-15).

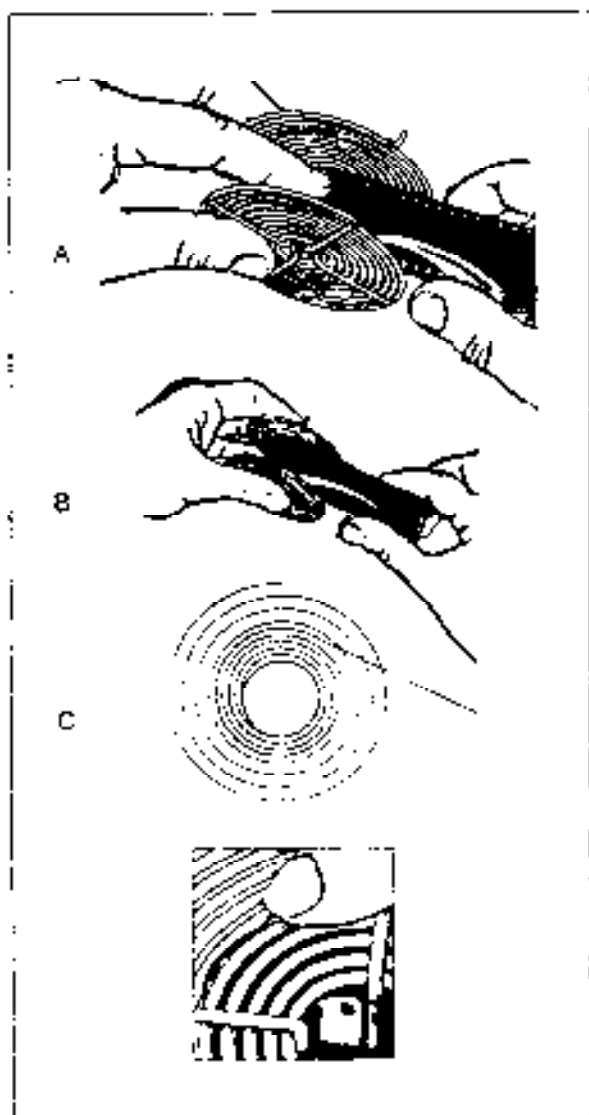


Figure 10-16.—Leading 35mm film on wire reel.

There are three ways of loading a center-feed spiral reel. You should practice each method (with a dummy roll), both in white light and in total darkness, and select the method that is most comfortable for you. Then perfect that method. Although the three methods are similar, there are differences that may make one method easier for you. However, before beginning one of these methods, make sure that both the reel and your hands are clean and dry.

- First method. Remove the film from the cassette (35mm) or separate it from the paper backing (120 or 220). The film must be handled only by the edges to prevent scratches and fingerprints. (When you work

with 35mm film, the tongue of the leader must be cut off to make a square end before loading the reel.)

If you are right-handed, the ends of the wire spiral must be positioned on the top and pointing to the right (fig. 10-16, view A). For left-handed people, the ends of the wire spiral reel when positioned at the top must point to the left.

Next, bow the film slightly concave to clear the edges of the spiral and clip or hold the film to the core (center) of the reel (fig. 10-16, view B). The film emulsion must face in or toward the reel center. The tension on the film should be firm enough to prevent the film from skipping the spiral grooves, but not so firm it overlaps or falls into the same groove twice.

Turn the reel, apply gentle pressure, and keep your thumb and forefinger on the film edges. This pressure produces a slight curl in the film and allows it to pass onto the edges of the reel. As you continue to turn the reel, the film straightens out and fits into the grooved spaces in the reel (fig. 10-16, view C). Apply enough tension to the film so it does not skip grooves. However, too much tension may cause the film to overlap in the same grooves of the reel.

- Second method. Prepare the film as before. Hold the reel to be loaded on a clean working surface in your left hand with the ends of the wire spiral at the top, pointing toward the right (fig. 10-17, view A). If you are left-handed, hold the reel in your right hand with the ends of the spiral wires at the top, pointing toward the left.

Hold the film by its edges in your right hand and bow it between your thumb and forefinger. With your left index finger or thumb, depress the grip clip and gently push the end of the film into the core of the reel (fig. 10-17, view B). When the reel does not have a grip clip, insert the film end about 1/4 to 1/2 inch into the reel core and hold it there with your left thumb and index finger (if right-handed). Remember, always load the reel with the film emulsion facing in, or toward, the reel core. Be sure the film is held straight at the reel center (fig. 10-17, view C).

Now turn the reel smoothly in a counterclockwise direction with your left hand, and guide the film into the spiral grooves with the thumb and forefinger of your right hand (fig. 10-17, view D).

- Third method. Slowly unwind the paper backing from the film until you feel the film with your finger. Do not completely unwind the paper backing from the film.

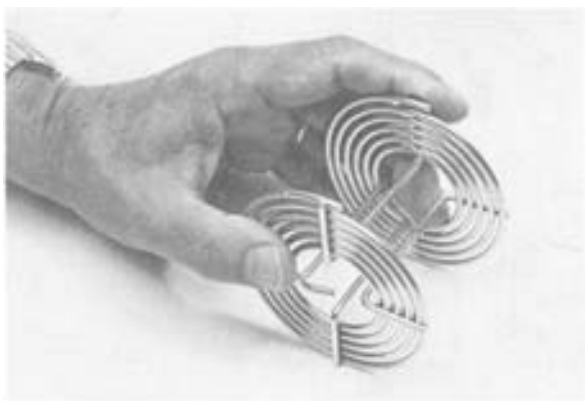


Figure 10-17.—Loading 120 film on reel.

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For 35mm film, if the film was not completely rewound into the cassette, cut the tongue off and leave the film in the cassette.

Hold the reel to be loaded in your left hand with the spiral wire ends at the top, pointing toward the right. Allow about 3 more inches of the paper backing to unroll. Bow the film and place it straight into the reel core. Smoothly and slowly turn the reel counterclockwise, guiding the film onto the reel. Allow the paper backing to unwind as the film is wound onto the reel.

When all but about 3 inches of the film is on the reel, you will feel the end of the film taped to the paper backing. With 35mm film in a cassette, the film stops unrolling from the cassette when the end is reached.

When you feel the tape or the end of the film is about 3 inches from the reel, carefully separate the film from the paper backing or cut the 35mm film right next to the cassette, being careful not to pull the film from the reel. Finish loading the reel.

The paper backing on 220 roll film does not run the full length of the film as does 120 film. The paper backing on 220 film serves as a leader and tailer that are taped to the ends of the film. Therefore, when using the third method described above, you must remove the paper tailer from the film before loading the reel.

Before processing film using a reel, you must practice loading it by using a roll of practice film in white light, then repeating the procedure in total darkness until you feel comfortable and do not damage the film. Only after you have the reel(s) loaded properly, should you think seriously about processing.

When a roll-film tank is used to process fewer rolls of film than the tank can hold, you must take up the extra space in the tank with enough empty reels to fill the tank. The empty reels go into the tank on top of the reels holding the film. When you are pouring solutions into the tank, completely cover ALL the reels in the tank.

When processing with a roll-film tank that has a lighttight cap, you can add or dump the chemicals without removing the cover. Only one tank is needed because the required solutions are poured out of and into the tank through the tank cover during processing. This can be done in white light. The chemicals should be arranged in the darkroom sink from left to right (developer, stop bath, etc.) and be

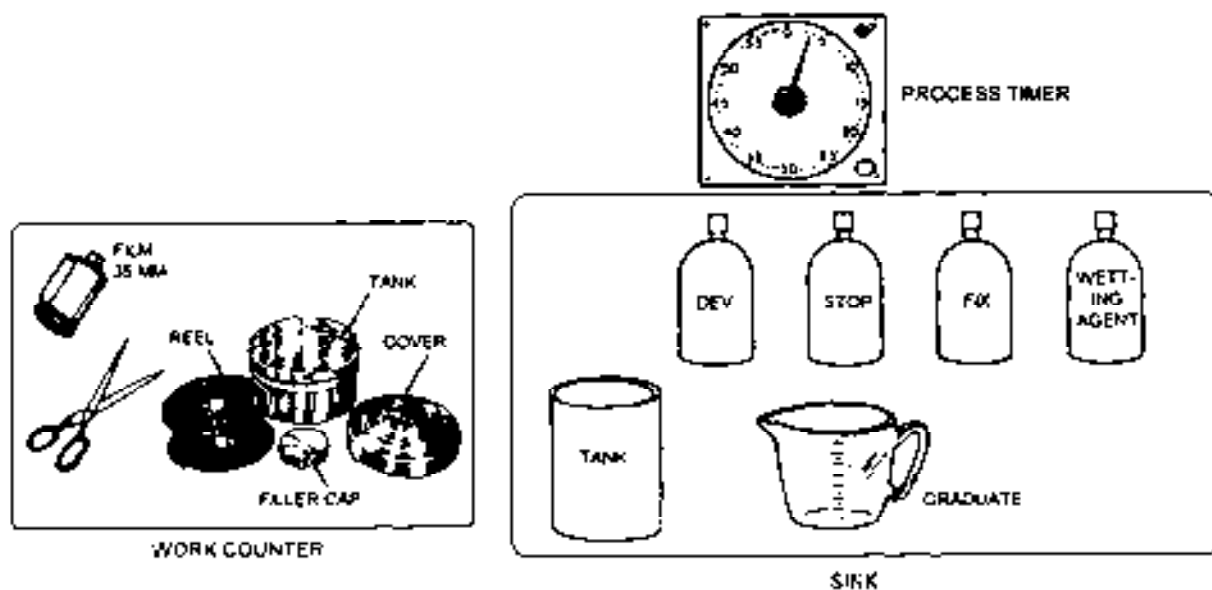


Figure 10-18.—Arrangement of materials for processing film.

brought to the correct processing temperature in a water bath (fig. 10-18).

A clean, dry area should be provided on the work counter for loading the film onto the reels. The following steps are used to process roll film in small tanks:

1. Load the reel or reels with the film to be processed.

2. Place the loaded reels into the tank. If the loaded reels do not come to the top of the tank, add empty reels to take up the space. Place the cover and cap on the tank. The lights may now be turned back on. Once the lights are on and before the film is fixed, be careful not to remove the tank cover or the film will be exposed to light and ruined.

3. Hold the tank in one hand and tilt it slightly; pour the developer directly from the graduate into the tank through the light trap pouring hole. Pour as fast as you can without spilling. As the developer nears the top of the tank, hold the tank level or set it in the sink. Fill the tank to just overflowing. This step should take about 10 to 20 seconds, depending on the tank size.

4. Once the tank is full, immediately start the timer, replace the cap, and strike the tank on the edge of the sink once or twice to dislodge any air bubbles. Now agitate the film by inverting the tank slowly end to end (fig. 10-19). The initial agitation should be 30 seconds. Place the tank in the sink on its bottom (cover up).

5. Once every minute, agitate the film for 5 seconds by slowly inverting the tank end to end. After

each agitation cycle, place the tank back in the sink. If you are holding the tank during the entire developing period, the heat from your hands may heat the developer and produce unpredictable results.

6. When only 10 seconds of developing time remain, remove the *cap* from the tank cover. Immediately start pouring the developer out of the tank through the light trap pouring hole. Dump the chemicals according to local instructions of the imaging facility. This step should take about 10 seconds to complete.

7. When the developer has been emptied from the tank, fill the tank to overflowing with stop bath. The stop bath must be poured into the tank through the light trap pouring hole in the tank cover. Replace the cover cap. Agitate the film in the stop bath for about 30 seconds using the end-for-end method.

8. When the stop bath portion of the process is complete, pour the stop bath through the light trap pouring hole in the tank cover.

9. With the tank cover still in place, pour fixer into the tank and replace the cap. Dislodge the air bubbles and set the timer to the required fixing time. Start the timer and agitate the film using the same agitation as the developer.

10. When the prescribed fixing time has elapsed, remove the tank cover and pour the fixer from the tank back into the bottle from which it came. Never pour the



Figure 10-19.—Agitation of a small tank.

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fixer into the sink. The fixer can be reused and then later saved for silver recovery.

11. The film can be washed either in the tank or in a roll-film washer. When the tank is used, insert a hose down through the center of the reels until it is about 1/2 inch from the bottom of the tank. Adjust the water (at the same temperature the film was processed) so a steady overflow is created. Wash the film for about 20 minutes. When you use a rapid roll-film washer, again, adjust the water temperature and place the reels containing the processed film into the washer. Adjust the rate of water flow until the reels start to turn. When the reels start to turn, adjust the rate of water flow until the reels stop turning. Set the timer and wash the film for about 5 minutes.

12. While the film is washing, rinse the processing tank, tank cover, and cap with clean water. Fill the tank with water (check the temperature) and add the wetting agent. After the film has been washed, place the film, still on the reels, into the wetting agent solution. Replace the tank cover and cap and agitate the film in the wetting solution very S-L-O-W-L-Y for 1 minute.

13. After 1 minute in the wetting solution, remove the loaded film reels from the tank. (Do not save the wetting solution.)

14. To dry the film, attach the end of the film to a film clip in the drying cabinet. Let the film unwind from the reel as you slowly lower the reel.

When the film is unwound, depress the grip clip (if the reel has one) or remove the film from the core of the reel. Squeegee the film and attach a second film clip to the lower end of the film. Close the drying cabinet door and dry the film.

Photographer's Data Sheets

Sometimes a photographer's data sheet will accompany film that enters your imaging facility to be processed. The photographer's data sheet will provide you with information on how the film was shot, lighting conditions, and specific processing instructions. When a photographer's data sheet accompanies the film or job order, you should process the materials specified by the form.

Cleaning Up

After processing, the darkroom and all equipment must be cleaned up immediately. Rinse thoroughly all processing equipment: tanks, reels, hangers, thermometers, funnels, and so forth, in clean, warm water. Place the clean equipment where it can dry before it is needed for the next processing run. Always keep the processing room shipshape.

REVERSAL PROCESSING

Normal processing of black-and-white film produces a negative; from this negative, a positive is made. However, by using the *reversal process*, you can produce a positive image directly on the black-and-white film.

In the reversal process, a negative image is first obtained by developing the original latent image in a developer that contains a silver halide solvent. This developer dissolves some of the excess silver halides. After leaving the developer, the *negative* image is dissolved away in a bleach bath. The silver halides remaining are chemically “exposed” (fogged) and developed by a second developer that provides the positive image.

Not all black-and-white films reverse well. Films that reverse well are Kodak Direct Positive Panchromatic Film 5246 (35mm), T-max 100 Direct Positive Film, and Kodak Technical Pan Films (35mm). Instructions for reversal processing of these films can be found in the *Photo-Lab-Index*.

COLOR PROCESSING

Color adds realism to photographs. At one time color was difficult to work with. It required special cameras and specialized films that could be processed only by the manufacturer of the film. Now, color materials have been improved and are used extensively in the Navy. They are far more popular than black and white.

As discussed in chapter 2, color films have at least three emulsion layers. Primary colors affect one emulsion layer only, while complementary colors affect two emulsion layers; for example, the color cyan affects the blue and green sensitive layers. White light affects all three emulsion layers. Black has no effect on any layer. The type of process used depends on whether the film is a negative type of film or a reversal (slide) film. The most common processes used in the Navy are Kodak Flexicolor for color negatives and Kodak Process E-6 for color reversal films. The Eastman Kodak Company continually strives to improve their processes by making them more environmentally safe. Always consult the *Photo-Lab-Index* for the most current information concerning film and paper processes.

COLOR NEGATIVE PROCESSING

In negative color film, the dye couplers produced are complimentary to the primary colors of light; therefore, a blue light records as yellow, a green light records as magenta, and a red light records as cyan. All colors within a scene are recorded through varying combinations of these yellow, magenta, and cyan dyes. The color negative is a halfway stage to a color print.

The cyan and magenta dye image layers formed by color processing absorb some light wavelengths that should be transmitted. In negative color film, these absorbed wavelengths of light cause a color cast when printed. To prevent this color shift, the manufacturer has given the green and red sensitive emulsion layers a yellowish and pinkish tint, respectively, during manufacturing. These tints are what form the overall orange mask that you see in finished color negatives. Some color film used for aerial photography does not have this orange mask. This allows for a direct interpretation of the negative image. An orange-masking filter is added when these films are printed.

The Kodak Flexicolor process is used for processing color negative films and some monochrome film, such as Ilford XP2. There are four chemical steps and two wash cycles in the Flexicolor process. They are

as follows: color developer, bleach, wash, fix, wash, and stabilizer.

Color Developer

The first step in color negative processing is color development. A color developer in color processes works nearly the same as a black-and-white developer. The exposed silver is developed by a developing agent and converted to metallic silver and by-products are released. As the color developer is working at developing the silver, it becomes oxidized and reacts with nearby dye couplers. Dye couplers are built into the emulsion around all of the metallic silver sites. The primary function of a color developer is to develop the exposed silver halide crystals to metallic silver and then form dye around the metallic silver, using the oxidized color developing agent.

Temperature of the color developer is the most critical of all the processing steps. The temperature of the color developer must be $100^{\circ}\text{F} \pm 0.25^{\circ}\text{F}$ ($37.8^{\circ}\text{C} \pm 0.15^{\circ}\text{C}$). All other wet steps in the process can be within the range of 75°F to 105°F (24°C to 41°C); however, it is best to maintain all solutions at constant temperatures.

Bleach

Bleach is found in all color processes. The purpose of the bleach is to take the metallic silver still in the color film (or paper) and convert it to a form that can be fixed. In color products, all of the silver must be removed. Only the color dyes form the image. The bleach chemically converts the silver metal back to a soluble silver halide.

Fixer

The function of fixer is the same in color processes as it is in black-and-white processes. A fixer converts the silver halide to a water soluble form. Most fixers use thiosulfate as the fixing agent in an acidic solution. When fixing is incomplete, unwanted silver remains in the image. This causes a loss in contrast, added density, and an unwanted color cast.

Stabilizer

The final wet step in color negative film processing is the stabilizer. The main purpose of this solution is to provide a wetting agent to prevent spotting of the film and to prevent unused magenta dye couplers from attacking the newly formed magenta dye.

Unlike black-and-white film processing, color negative film cannot be “push processed” successfully; therefore, you must choose a film with an appropriate film speed for the lighting conditions in which you photograph your subject.

COLOR REVERSAL FILM PROCESSING

Color transparency film forms dyes according to a reversed silver positive; for example, a yellow dye image forms in the top emulsion that corresponds to an absence of blue in the original scene. This yellow dye subtracts blue light. A blue image is formed by magenta dye (minus green) and cyan dye (minus red), thus leaving blue. In color transparency film, the dyes subtractively produce a correct color positive image of the scene photographed.

The Kodak E-6 Process is used in the Navy for processing color reversal film. There are seven chemical steps and two wash cycles in the Kodak E-6 Process. They are as follows: first developer, wash, reversal bath, color developer, prebleach, bleach, fixer, wash, and final rinse.

The first chemical step is the first developer. The first developer is a black-and-white developer that converts the exposed latent image in each emulsion layer to a metallic silver. Like black-and-white negative processing, after the film leaves the first developer, there are undeveloped areas where the silver halides are unaffected by camera exposure. It is these undeveloped areas that the final color positive images are formed in reversal film.

After the first developer, the film is chemically fogged or “re-exposed” in the reversal bath. The reversal bath exposes the silver halides that were not developed in the first developer. This re-exposure is what forms the positive image. After 1 minute in the reversal bath, the normal room lights can be turned on.

After fogging, the film is developed in a color developer. The color developer works the same way in color reversal processing as it does in color negative processing. It changes the fogged silver halides to black metallic silver and at the same time, cyan, magenta, and yellow dye couplers are formed by the exhausted developer.

At this stage the film looks completely black because the formed dyes are shielded by the developed silver. The film is then placed in a prebleach. The prebleach prepares the film for the bleach and also stabilizes the dye layers.

The metallic silver is removed by the bleach and fixer processes. The bleach and fixer work the same way as they do for color negative processing. After the silver is removed, only the dyes remain, forming the image.

The film is then washed to rinse away any remaining chemistry and soluble silver. The last chemical step in the E-6 process is the final rinse. Final rinse provides a wetting agent to aid in uniform drying.

It is possible to “push process” (underexpose and overdevelop) or “pull process” (overexpose and underdevelop) most color reversal film; however, some sacrifice in quality results in “push processing.” Less detail in the shadow areas (weaker blacks), less exposure latitude, and noticeably increased grain occur when color reversal film is “push processed.” When the film speed is altered, only the first developer time is changed. All other chemical steps remain the same. You should not exceed two f/stops when you intend on “push” or “pull” processing.

MACHINE PROCESSING

Today most film processing is performed by machine, especially in larger imaging facilities. Machine processing has many advantages compared to hand processing. Machines can process high-volume production more efficiently and more consistently compared to hand processing. When machines are used, the variables involved in processing can be controlled more easily. Time, temperature, and agitation can be kept constant if the machine is properly maintained and operated properly. With fully automatic processing machines, all you must do is feed the film or paper into the machine and retrieve the finished product.

When there are advantages, there are also disadvantages to machine processing. Machines require maintenance, can jam, occupy precious shipboard space, and may require special plumbing, ventilation, or power requirements. The need for proper maintenance is most critical. Poor equipment maintenance is probably the major cause of machine processing problems. Therefore, it is very important for scheduled preventive maintenance to be performed properly on all imaging equipment, especially automatic processors. The best images captured by a camera are not of any use if they are not processed correctly and without defects. You must be qualified completely in the Planned Maintenance System (PMS) to become a valuable member of an imaging facility.

In a high-volume production facility, the advantages of automation far outweigh the disadvantages. There are



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Figure 10-20.—Image Maker processor.

numerous automatic processors available on the market today. Two types of machine processors are commonly used in Navy imaging facilities. They are the rotary drum and the roller transport type of processors.

ROTARY DRUM PROCESSOR

The semiautomatic processor most commonly used in Navy imaging facilities is the Image Maker, manufactured by the King Concept Corporation (fig. 10-20). When this type of processor is used, film and paper are processed in a lighttight canister. Before being processed, the material must first be loaded on stainless steel reels for roll film or in a plastic basket for sheet film or paper. Depending on the setup of the processor, the holding tanks are either filled with chemicals manually, or they may be filled automatically. The solutions are then automatically added to and dumped from the processing drum. The time, temperature, and solution steps are all controlled by a computer. After the material is processed, it is then removed from the drum, squeegeed, and dried.

The advantages of a rotary drum processor is it is of relatively low cost, small in size, and can run many different processes through the same machine. The major disadvantage is that the chemicals are dumped

instead of replenished which is not environmentally sound and can be costly.

ROLLER TRANSPORT PROCESSOR

Automatic processors commonly use roller transport systems (fig. 10-21). When you are using these machines, the material being processed moves at a constant speed by friction. The materials are guided through the processing solutions by a series of rollers and rack assemblies. On many processors, a leader tab must be attached to the beginning of the roll to aid in pulling the film through the machine.

The size of the solution tanks and the length of the path through the solution determine how long the material must remain in each solution (processing time). On some automatic processors, the finished, dried, processed material leaves the processor and is then automatically cut and sorted.

Roller transport processors contain two major sections: the wet section and the dryer section. The wet section contains the developer, fixer, and wash tanks. The film is then transported through a squeegee assembly and enters the dryer.

Many different types of processors are used throughout the Navy. Each type has specific installation,

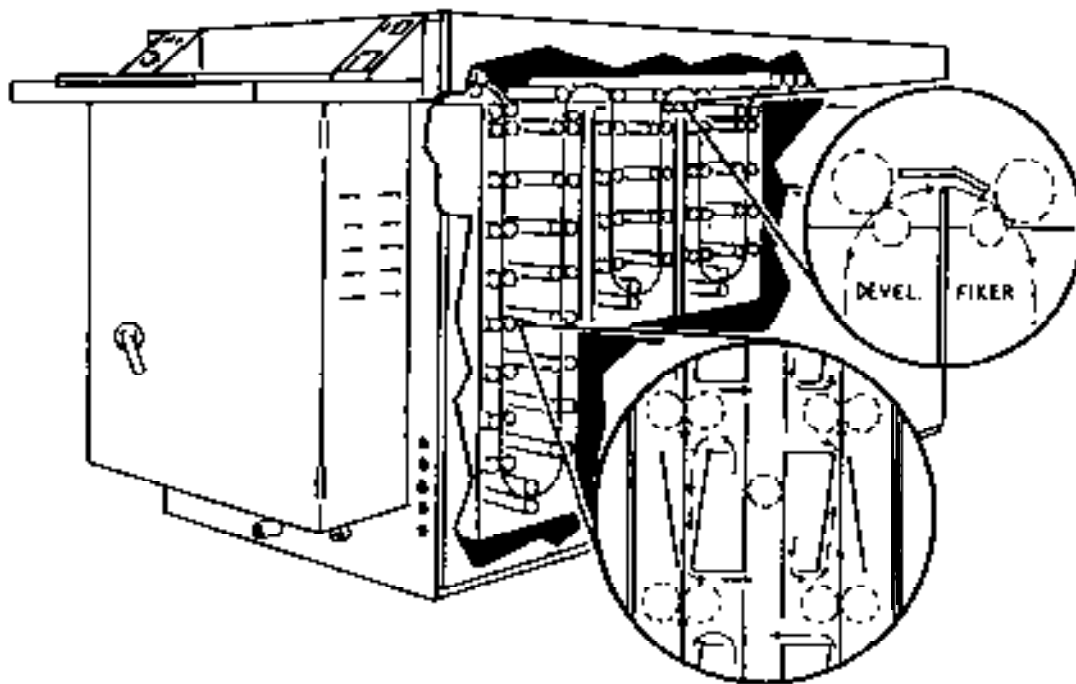


Figure 10-21.—Roller transport processor.

operation, and maintenance instructions supplied with it. Therefore, in this section only general information that applies basically to any machine processor is discussed.

TRANSPORT SPEED

Most black-and-white automatic film processors have a variable speed operation. Unlike hand processing where developing time is measured in minutes and seconds, machine processing developing times are measured in feet-per-minute (fpm). Both methods measure the length of time the material is affected by the developer and other solutions. Most color processors have a set machine speed that can only be adjusted slightly because color materials must be processed to specific parameters so processing cannot be manipulated.

The time the solutions are allowed to act on the film or paper is a result of the speed that the machine moves the sensitized material and the length of time the material is immersed in a particular tank. Most machines have an fpm indicator that shows the set speed of the processor. The temperatures of solutions and the specific number of feet in each section of the machine are usually constant factors. It is the rate the paper or film travels that determines the total processing time; for example, if the speed is set to 10 fpm and the total roller

path in the developing tank is 30 feet, a certain point on the material being developed takes 3 minutes ($30 \div 10$).

Regardless of the machine speed, film or paper cannot be processed faster than the total required solution times. For example, you are processing film that requires a processing and drying time of 10 minutes and 20 seconds. When the machine is processing this film, it takes 10 minutes and 20 seconds before the first foot of film leaves the dryer. However, the total time to process the entire roll is related to the speed of the machine and the total length of the material. For example, if the machine speed is 10 fpm and the roll is 10 feet long, the film takes 10 minutes, 20 seconds, plus 1 minute ($10 \div 10$). With a 200-foot roll, access time is 10 minutes, plus 20 seconds, plus 20 minutes ($200 \div 10$), or a total of 30 minutes, 20 seconds. It is important for you to know the access time of the processor. When the material being processed does not exit the machine in the required time, a machine malfunction or jam is evident.

WATER TEMPERATURE AND FLOW RATE

Wash water is an important processing consideration. Not only is the water temperature important but also the flow rate of the water. Two factors that must be considered are as follows: sufficient flow to ensure

complete washing of the material and to control or eliminate waste.

If the wash-water temperature is allowed to drop to 65°F (18°C) or below, emulsion staining may result. As the temperature decreases, less emulsion swelling occurs, reducing the effective penetration of fresh water supplied to the emulsion. When the emulsion does not swell, the chemical-laden water does not get out through the emulsion surface. These retained chemicals can cause stains.

The wash water flow rate is another important factor to consider. This rate must be high enough to wash the material, but no more. When insufficient water flow is supplied to the machine, crystallized chemicals may be seen on the material, and additional staining can result. You must not adjust the water flow rate higher than is needed. A few extra gallons-per-minute flow rate may not seem important; however, over time this effect can be extremely costly, particularly aboard ship.

SOLUTION TEMPERATURE

In machine processing, the temperature may vary, depending on the machine and the kind of processing being performed. High-speed processing machines operate at higher solution temperatures. Temperature control is critical and must be maintained to produce correct results. Although this may be considered a variable factor, the temperature is controlled automatically by processing machines. In some machines, the solution tanks are immersed in a temperature-controlled water jacket. By controlling the water temperature within the water jacket, you can control the temperature of the solutions inside the tanks. In other machines, the solution temperature is directly controlled by separate heaters or heat exchange control units in the recirculation system. A temperature probe in the solution tank monitors and controls the temperature control unit.

SOLUTION LEVELS

The solution levels of a processor must be checked before processing material. If the solution level is too low, stains, improper tracking, and roller marks may affect the film or paper. When the machines are shut down for a period of time, some evaporation occurs. Since only the water from the solution evaporates, you must top off the solution tanks with water before processing material. There is a certain amount of carry-over of solution from one tank to another within the machine. Usually, chemical carry-over is minimized

with roller squeegees. When the replenishment rate of the processor is set properly, this carry-over is compensated by supplying fresh chemistry to the solution tanks.

REPLENISHMENT

Most processing machines use relatively large quantities of solutions to carry out the process properly. However, even considering the large quantities involved, certain chemical components within a given solution are used up at varying rates. In addition, there are certain reactions that form by-products that build up in the tank of the processor; for example, bromide (a restrainer) gradually builds up in the developing solution. Also, there is a certain amount of carry-over of solutions from one tank to another. This causes a continuous change in solution strength and solution purity. The replenisher solution replaces the used chemicals, dilutes the excess chemicals or by-products that have built up, and replaces the solution lost by carry-over and evaporation.

The replenishment system used in machine processing is called the *bleed* method. When the bleed system is used, a calculated amount of replenisher solution is added and forces some of the used solution out through an overflow drain in the solution tank. You must check the established replenishment rates as well as the replenisher holding tanks before and during processing. Inconsistent results occur when the process is not replenished correctly.

DRYER TEMPERATURE

After the material is processed and washed, it continues through the machine into the drying cabinet where moisture is removed. The drying cabinet is more than a heated compartment for the processed material. In a majority of machines, both the temperature and the humidity of the cabinet are carefully controlled. Too little drying causes the emulsion to be tacky, whereas too much drying may produce excessive curl and brittleness. Brittleness, once it occurs, cannot be eliminated; so it must be prevented. Both the temperature and the relative humidity must be adjusted for the speed of the machine and the type of material being dried.

Under ideal conditions, the drying cycle should yield a stable 50 percent relative air humidity. To lower the relative humidity of air, you must heat the air; this accelerates the evaporation of moisture. The rate of evaporation and the relative humidity are directly

proportional to the temperature. When the temperature is too low, evaporation is slowed down. When it is too high, the emulsion may be damaged.

Roller transport processors provide very consistent processing results and can be converted easily to a new process. The disadvantages of roller transport processors are: they can leave scratches and scuffs from dirty rollers touching the film, they require a high amount of maintenance due to the large number of moving parts, and oxidation can be a problem due to the churning action of the rollers in the chemistry.

QUALITY PROCESSING

The processing required to produce a quality product of any particular film varies with different developer and film combinations, time and temperature of the process, agitation, the film exposure, and the skill of the darkroom worker. A good, high-quality image is one that is free from all processing faults, including scratches and dirt, and so forth.

When processing black-and-white film, your goal is to produce a “normal” negative that is as fault-free as possible. Normal is a rather vague term; however, a normal negative is one that yields a pleasing print or reproduction of the original scene when printed without a printing filter or with a No. 2 printing filter.

When film is exposed and processed properly, it is a normal negative. However, when a negative varies from normal, you should be able to determine what conditions caused the deviation.

A negative has several *basic* characteristics to consider when evaluating quality. These basic characteristics are as follows:

- General negative density or opacity to light.
- Image highlights or areas of greatest density.
- The shadows or areas of least density.
- Contrast or the differences between highlight and shadow densities.
- Tonal gradation or the range of grays between the highlights and the shadows.
- Graininess or the appearance of silver grains in a negative that have clumped together. The size of the clumps determines the degree of graininess in the processed material.

All the basic characteristics of a negative are affected to some extent by a combination of exposure

and development. By studying these characteristics, you can usually determine the cause of an error or poor quality in a negative.

DENSITY

Density determines how much of the incident light falling upon a negative passes through the image. When a small amount of silver is present in the negative, the image appears thin (transparent), and it has low density. When there is a large amount of silver present, only a small amount of light passes through the image, and the negative is said to have high density.

A low density, thin negative can be caused by underexposure or underdevelopment or by a combination of the two. A heavy or dense negative is the result of either overexposure or overdevelopment or a combination of the two.

HIGHLIGHTS

The highlights, or dark areas, of a negative for most purposes should not lack detail. When detail is lacking because the highlights are too dark, the highlights are too dense or blocked up. Excessive highlight density is caused by overexposure and/or overdevelopment. When both the highlights and the shadow areas are too thin and lack detail, the negative is probably underexposed. Thin highlights are caused by underexposure and/or underdevelopment.

This may seem like a repetition of the previous discussion on density. However, a negative could and may have *overall* good density except in the highlight areas. This situation is a result of exposure latitude that is not great enough for the scene brightness range.

SHADOWS

The shadows, or the more clear areas of the negative, also should contain image detail. If these areas are so thin and weak that they are transparent or nearly so, the shadow areas are said to be lacking in detail. Loss of shadow detail is caused normally by underexposure.

The need for detail in both the highlights and the shadows for photographs of most subjects cannot be stressed too strongly. One is as important as the other in the production of good photographs.

CONTRAST

Contrast is the difference in density between the highlights and the shadows in a negative. When this

difference is great, the negative is said to be contrasty. When the density difference is small, the negative is said to be flat or lacking in contrast.

For a negative to have normal contrast, the density differences between the highlight and shadow areas of the negative must be proportional to the reflective brightness range of the subject photographed

A contrasty negative usually is the result of overdevelopment but also may be caused by a high scene lighting ratio (a contrasty original scene). A flat negative, on the other hand, may be caused, primarily, by underdevelopment or a low-contrast original scene.

TONAL GRADATION

Photographers often concentrate on the density and detail of highlights and shadows when they should actually be considering the most important or middle tones of the negative. Middle tones are the various tones of gray between the highlights and the shadows; that is, the densities that are not highlights or shadows are termed middle tones or intermediate tones. The middle tones vary with the type of film and the subject contrast. A negative should have a range of middle tone densities that correspond proportionally to the middle reflective brightness of the subject. A panchromatic negative that does not have proportionate midtones is contrasty or flat.

GRAININESS

Because photographic images made from film are made up of fine silver grains, the images may appear “grainy” or exhibit graininess (fig. 10-22).

All negatives show graininess to some extent. The most important factors affecting negative graininess are as follows:

- The composition of the emulsion or the inherent graininess of the emulsion. That is to say, the size of the grains used to produce the emulsion.
- The type of developer used. When fine grain is desired, a fine-grain developer with the appropriate film should be used.
- The extent of development. Overdevelopment is a major cause of excessive graininess.
- Exposure or negative density. Overexposure is another key contributor to graininess. As negative density increases, so does graininess.



Figure 10-22.—Grain structures in emulsions.

- Image sharpness. The sharper the film image, the greater the image detail and the less apparent the graininess.

EFFECTS OF EXPOSURE AND DEVELOPMENT VARIATIONS

The nine negatives reproduced in figure 10-23 compare the effects of exposure and development variations. From the left, they show the effects of development; from the top, they show the effects of exposure. The center negative has been given both correct exposure and normal development and is a “normal” negative that will print without a filter or with a No. 2 filter.

Negatives 1, 4, and 7 have been underdeveloped, while 3, 6 and 9 have been overdeveloped.

The negatives across the top-1, 2, and 3-are underexposed and lack detail in the shadow areas. Increasing development (No. 3) had no appreciable effect on the lack of shadow detail. Little can be done to improve negative quality when exposure is insufficient. Underexposure is identified by lack of shadow detail.

The negatives across the center-4, 5, and 6-were given correct exposure and all have sufficient shadow detail. However, No. 4 was underdeveloped and is flat or lacks adequate contrast. Negative No. 5 received normal development, has good shadow detail, and good contrast. It is a “normal” negative. Negative No. 6, although having received correct exposure, was overdeveloped. This resulted in excessive highlight density with a loss of highlight detail and excessive contrast. The highlights in both 6 and 9 are too dense.

Negatives 3, 6, and 9 are all overdeveloped. The correctly exposed negative, No. 6, is so dense that almost no detail is visible in the highlights. The highlights of the overexposed and overdeveloped negative, No. 9, are completely blocked up.

When a correctly exposed film is given normal development as in negative No. 5, the negative has

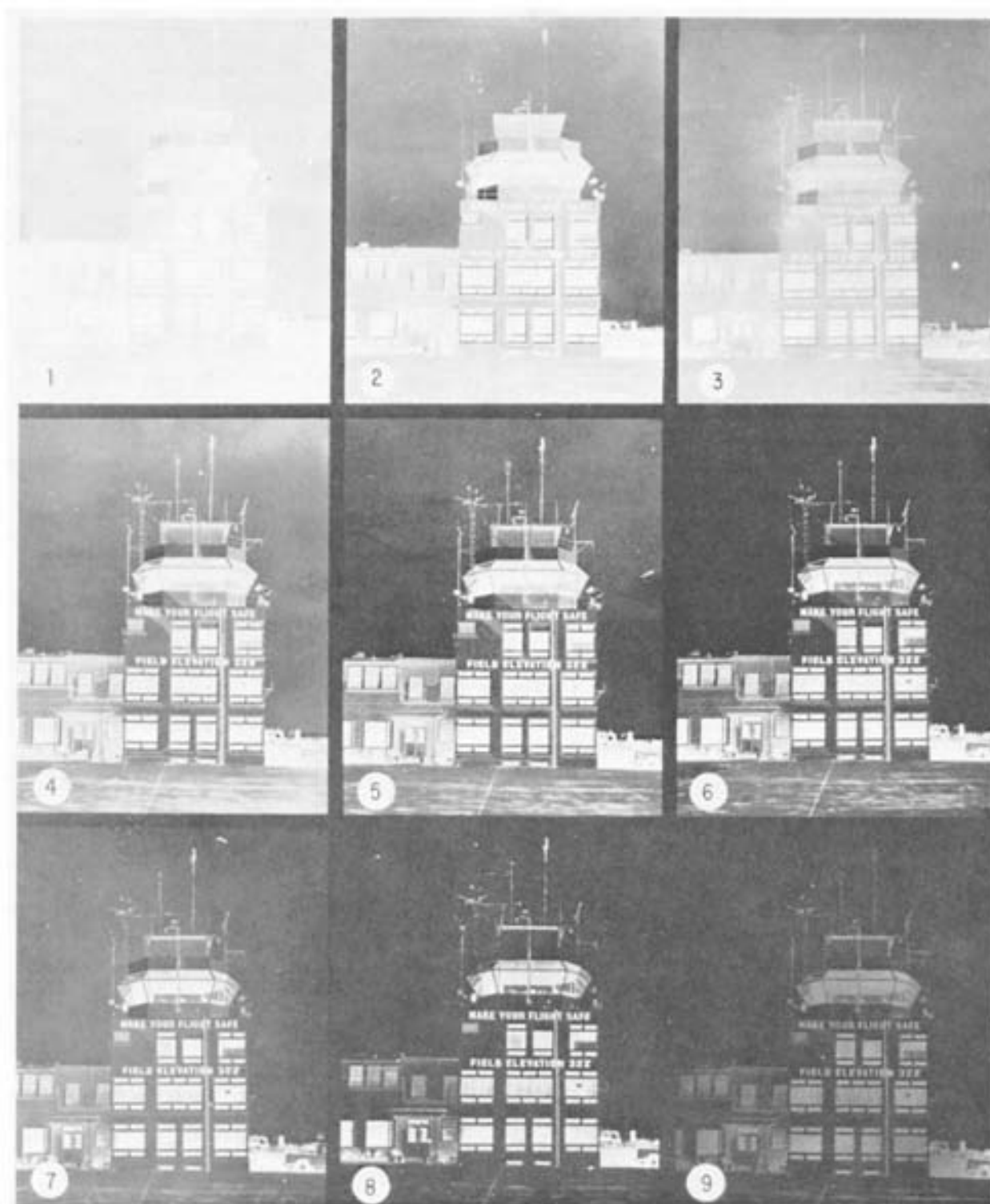


Figure 10-23.—Exposure and processing affects.

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clearly defined detail in all parts of the image from the strongest highlights to the weakest shadows. The contrast is satisfactory. It may not reproduce the contrast of the original scene exactly, but it has sufficient contrast to produce a pleasing reproduction.

When the film is overexposed and normally developed, as in No. 8, the highlights in the image show a loss of detail. Giving the overexposed film less than

normal development may save some highlight detail, but it also reduces the contrast. When the overexposed film is overdeveloped, as No. 9 was, all highlight detail is destroyed and the contrast is also reduced.

Table 10-1 is a listing of defects that commonly occur in film processing. The appearance, the cause, and the remedy for each of the defects listed are also provided.

Table 10-1.—Negative Defects: Their Appearance, Cause, and Remedy

Defect	Appearance	Cause	Remedy
Abrasion marks or streaks.	Fine black lines, usually resembling pencil scratches and running in the same direction.	Friction on emulsion caused by improper handling or storage. Dirt, or grime, in camera or magazine.	Great care should be taken in storage of film. Boxes containing film should be stored on end, so no pressure is exerted on the surface of the emulsion. Care, also, should be taken not to rub or drag sensitized material over a rough surface. Be sure camera back or magazine is clean and free from dirt, or grime.
Air bubbles.	An air bubble occurring during development shows as a small, transparent spot. Sometimes minute dark streaks lead from the spot. When the negative is rocked in a tray, streaks project from each side of the spot in the direction the tray was rocked. If the tray is rocked in two directions, streaks form a cross with a transparent spot in the center. In tank development, dark streaks usually form at the lower edge of the transparent spot. In the fixing bath they show as small, round, dark spots.	Transparent spots occurring in the developer are caused by bubbles of air on the surface of the emulsion. These prevent the developer from coming into contact with the emulsion. Darkened streaks are the result of excess oxidation of the developer, caused by air in a bubble. Dark spots that occur in the fixing bath are caused by a pocket of air holding the fixer away from the emulsion and allowing a slight continuation of development.	Immerse film carefully and thoroughly in developing and fixing solutions. Move film during development and fixation to break up and prevent air bells. Water always contains some air and when there is a rise in temperature, air is expelled and gathers in the form of small bubbles on the inside of the tank and also on the surface of the film during preliminary stages of development.

Table 10-1.—Negative Defects: Their Appearance, Cause, and Remedy-Continued

Defect	Appearance	Cause	Remedy
Blisters.	They resemble the familiar ones that are caused by slight burns on human skin.	Liquid or gas formed between the emulsion and film support when the solution has become too warm and has loosened the gelatin from its support. Also, produced by developer and fixer being too strongly concentrated. Changing film from one bath to the next may cause the formation of gas between the emulsion and support. Frequently caused by taking the film from an alkali solution and placing it into a strong acid. Another common cause is allowing water from a faucet to flow directly on the emulsion.	Blisters can be avoided by eliminating their causes.
Brown spots.	Small brown- or sepia-colored areas or spots on the negative.	Produced by oxidized developer or by fine particles of chemicals settling on the film before development. May also occur during washing, from rust, and other impurities in the water.	Avoid exhausted or oxidized developer. Keep processing room clean and free from dry chemicals. Filter the wash water.
Crystalline surface.	Surface of the negative emulsion has a crystalline appearance, resembling frost on a windowpane.	Insufficient washing after fixing. Hypo remains in the film and crystallizes.	Increase the final wash time.
Dark lines.	These lines are divided into two distinct classes. The first class, those that run from dark areas to more transparent areas of the negative, and the second class, those that run from the more transparent areas to the darker areas. In both cases, lines are wider, not as clean cut, and not nearly as parallel as abrasion marks.	The first class is caused by insufficient agitation of the negative in tank development. Cause of the second class is thought to be of an electrolytic origin.	For the first class, more frequent agitation during development. The remedy for this class aggravates the defect in the second class. Only known remedy is to remove all film hangers from the tank four or five times during the developing period, holding the hangers in a bunch, and allowing the corners of the hangers to rest on the edge of the developing tank for 10 to 15 seconds.

Table 10-1.—Negative Defects Their Appearance, Cause, and Remedy-Continued

Defect	Appearance	Cause	Remedy
Fading tendency.	Sepia- or yellow-colored stains or areas in the negative.	Incomplete fixation or insufficient washing causes fading. Remnants of the fixing bath left in the emulsion continues its action, and in time, this defect appears.	Properly fix and wash negatives.
Fingermarks.	Imprint of fingers shows up on negative.	Impressing wet or greasy fingers on the emulsion of film before or during development and fixation. If mark is merely an outline of the finger, it was caused by water or grease on the finger; if dark, it was caused by developer; if transparent or light, it was caused by fixer.	Keep hands clean and dry when handling film. Sometimes natural oil on the fingertips causes grease marks. When fingers become wet with water or solutions, wash and dry thoroughly before attempting to handle film.
Fog (Aerial).	A slight veiling of the negative or parts of the negative.	Negative exposed to air during development. Occurs most frequently in freshly mixed developers.	
Fog (Dichroic).	Usually a fog of little density, consisting of finely divided particles of silver. When viewed by transmitted light, it is pinkish; when viewed by reflected light, it appears reddish green.	Hypo or excessive amount of sulfite in the developer.	Removed by treating the negative in a weak solution of potassium permanganate. Further prevention through use of clean tanks for developer and fixer.
Frilling.	Edges of the gelatin become detached from the base. Detached edge of emulsion may either break off or fold over.	Careless handling; using solutions that are too warm; insufficient hardening of emulsion due to insufficient fixation; exhausted fixing bath or one containing insufficient amount of hardener; or excessive washing. Frilling is usually caused by a combination of careless handling and any other mistake that will render the emulsion or film soft.	Handle film carefully and sparingly; use working solutions that are mixed correctly and are at the proper temperature. Wash film sufficiently, but never excessively.

Table 10-1.—Negative Defects Their Appearance, Cause, and Remedy—Continued

Defect	Appearance	Cause	Remedy
Air bubbles.	Minute pimples or blisters.	Develop by transferring the negative from strongly concentrated developer to strongly acid fixing bath without thoroughly rinsing after removing it from the developer and before immersing it in the fixing bath. In warm weather, air bubbles may appear even when using solution of normal strength, if rinsing between development and fixation has been insufficient.	Use an acid stop bath.
Pitmarks.	Fine holes or pits in emulsion.	Excessive alum in fixing bath; sulfurous precipitation from fixing bath when negatives are fixed in a tray; and film being dried too rapidly.	Proper fixing and drying.
Pinholes.	Minute transparent spots.	Dust on film before exposure.	Proper handling of film. Clean camera back or film holders before use.
Reticulation.	Leatherlike graininess or wrinkling of the emulsion.	Too great of a difference in the temperature of baths or between final wash water and the air in which the negative is dried. Gelatin may become badly swollen due to the temperature of a solution or wash water, and upon shrinking, contracts irregularly due to the metallic silver incorporated in the emulsion. Excessive softening of the emulsion followed by a strong hardening bath, or an alkaline treatment followed by strong acid.	Keep all solutions at the same temperature. Reticulation effect may sometimes be removed by placing the negative in a 10-percent solution of formaldehyde for a few minutes and then drying it rapidly with heat. Use ample ventilation when drying negatives treated in formaldehyde.

Table 10-1.-Negative Defects: Their Appearance, Cause, and Remedy-Continued

Defect	Appearance	Cause	Remedy
Streaks.	Streaks and patches. In the case of spots, may be dark, white, or transparent.	May be due to uneven development, caused by insufficient agitation. May also be due to developer splashed on the film before development, a dirty tank, fixer tray or tank used for developing, or a light fog. If the edges of the film are clear, trouble is in the camera; if the edges are fogged, it is due to a light leak in the film magazine or processing tank. Certain types of resinous woods and varnishes cause dark patches. White or transparent patches may be due to obstructions in the camera that prevented light from acting on the film; an oil or grease that prevented action of the developer; hypo on film before development. Drying marks in the form of teardrops or white patches are caused by splashes of water on a dry negative or by leaving spots of water on the film before drying, especially if the film is dried in warm air.	Trace the cause of the streaks. In many cases, they can be avoided in the operation and maintenance of equipment. When drying negatives, be sure to use wetting agent or stabilizer.

PROCESS MONITORING

To consistently produce the highest quality photographic products possible and to prevent chemical processing defects, you must monitor the photographic processes. From a hand-processing system to a sophisticated, computerized processing system, process monitoring is necessary to achieve high quality on a consistent basis. When it is performed routinely, process monitoring can detect minor problems before a major casualty to your imagery results as well as aid in the proper replenishment of your processing system.

The area of quality control and process monitoring can be very complex. Some Navy Photographer's Mates earn an NEC and specialize in the field of quality control for photographic processes. It is not the intention of this training manual to provide you with the information necessary to become a specialist in photographic quality

control; however, you must learn the appropriate steps to monitor the process.

The production of high-quality photographic products requires control over all the factors that affect light-sensitive materials. Film exposure and processing are the most important of these factors. Negatives or positives that have not been uniformly and correctly exposed and processed may provide unusable results. By monitoring the process and providing high-quality products, you can save time and operating costs by reducing waste and retakes.

Any monitoring system for the photographic process requires a reference or standard, and comparison of daily production to this standard. Visual comparison of the reference to the standard is very subjective and limited in accuracy because of personal opinion. A more accurate method is to measure your production against the standard. Two means of making



Courtesy of EG&G, Inc.
302.288X

Figure 10-24.—EG&G sensitometer.

these measurements are through sensitometry and densitometry. When sensitometry and densitometry are used, variations from the standard and the corrections recommended are expressed in numbers, not in terms of personal opinion.

SENSITOMETRY

Sensitometry is the science of determining the photographic characteristics of light-sensitive materials. In sensitometry, special test or control strips are prepared by accurately exposing the material with varying amounts of light. These test strips are then processed.

A *sensitometer* is an instrument used to produce the special test strips called sensitometric strips. A sensitometer is used to produce these sensitometric strips because it provides consistent and repeatable exposures of a known quantity and quality of light. The sensitometer is used to expose a strip of film with varying amounts of known exposure on the same strip of film. Since the sensitometer provides repeatable exposures each time, any changes in density indicates a change in processing. In Navy photography, the sensitometer is used to expose black-and-white materials only. There are several uses for sensitometric

strips; but in this training manual, we are only concerned with monitoring a process. Here the sensitometric strips are used as control strips. Control strips are made and processed under the controlled conditions of time, temperature, and agitation. This is true for both black-and-white and color materials. Black-and-white control strips are usually made in the photo lab, while color control strips are obtained by the manufacturer of each material.

Ideally, a sensitometer should be designed so you can accomplish the following objectives:

1. Predetermine the total amount of exposure.
2. Determine the difference in exposures given to various areas.
3. Control the color quality of the light.
4. Consistently reproduce or duplicate the same lighting conditions.
5. Provide a wide range of exposures.

The sensitometer used most commonly in the Navy today is the Egerton, Germeshausen, and Grier (EG&G) sensitometer (fig. 10-24). This sensitometer uses a

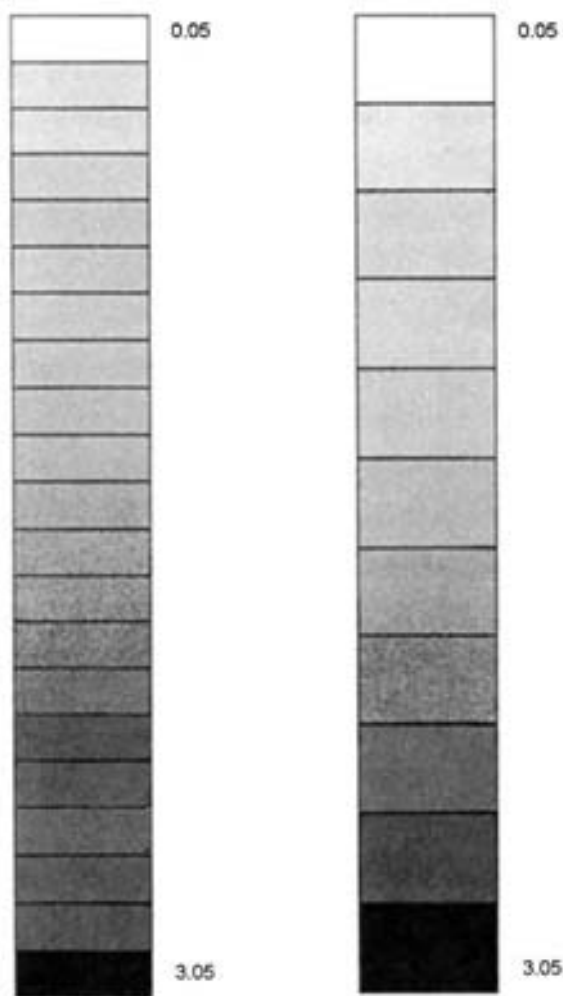


Figure 10-25.—Step tablets.

daylight balanced xenon flashtube. It can also produce exposure times from 1/100 to 1/10,000 second.

Step Tablets

A sensitometer is set up to make only one exposure. In order to provide a range of exposures, a step tablet is placed between the light source and the light-sensitive material. The step tablet is a strip of neutral-density filters in equal increments, ranging from 0.05 to 3.05. This range provides a 10 f/stop range. The most common step tablets are as follows (fig. 10-25):

1. 21-step tablet-1/2 f/stop between each increment.
2. 11-step tablet-1 full f/stop between each increment.



Courtesy of X-Rite, Inc.
302.339X

Figure 10-26.—Densitometer with both transmission and reflection capabilities.

Control Strips

A sensitometric control strip should be processed as a minimum-at the beginning of a production day (or shift), before any production is processed, and before shutdown. You should process a control strip just before an important mission, or a special-interest film is processed.

To expose and process a control strip, you should take the following steps:

1. Take the film (in a lighttight container) and place it next to the sensitometer.
2. Turn on the sensitometer and allow it to warm up for a minimum of 15 seconds.
3. Turn off the room lights.
4. Place the film emulsion-side down on the sensitometer and lower the platen to make your exposure.
5. When hand processing or using a rotary tube type of processor, load the control strip on the reel. When machine processing, replace the film in a lighttight container. Turn on the room lights and turn off the sensitometer.
6. When a roller transport processor is used, check the speed, temperatures, and the proper operation of all systems.
7. Stick the film into the processor so the lightly exposed end of the film enters the machine first. When hand processing or using a rotary tube type of processor, process normally.



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Figure 10-27.—Control strips read from center of each step with emulsion facing up.

DENSITOMETRY

A densitometer is an instrument used for measuring and reading the density of film and paper directly. Film is read on a transmission densitometer, and paper is read on a reflection densitometer. Most densitometers supplied by the Navy today have both transmission and reflection reading capabilities on the same meter (fig. 10-26).

A densitometer uses a photoelectric cell to measure the light transmitted through film or reflected from paper electronically. Before a densitometer can be used, it must be checked and calibrated against a reference standard. To use the meter, you must place the material to be measured, emulsion-side up, in the light beam between the source and the photocell. The density reading is then read directly from the meter.

There are several sets of filters incorporated in the head of the densitometer. When you are reading black-and-white materials, the yellow filter must be in place. When color materials are read, there are two different sets of filters that are used. They are Status A and Status M filters. Status A filters are used to read color transparencies and prints. Status M is used to read color negative film that has an orange mask

Only certain steps of the control strip are read. The steps that you are required to read are established by the manufacturer of the material or are established by the quality control technician within your imaging facility. When you are reading the steps on your control strip, be sure that the emulsion side is facing up and take the reading from the center area of each step (fig. 10-27).

PROCESS CONTROL CHARTS

A process control chart provides a visual representation of a process. Control strips that are processed and read on a densitometer are then plotted on a control chart. The points plotted on the graph indicate what has occurred in the process at the time the control strip was processed. Through the use of control charts, a determination can be made whether the process is operating normally. As stated before, only selected steps of a control strip are monitored. For black-and-white film, the minimum steps monitored are as follows: base plus fog (B + F) or gross fog, high density, low density, speed point, and contrast.

For each step monitored on a control chart, there are three lines. The center line represents the mean (\bar{X}) (pronounced "bar X"), or average, a top line that represents the upper control limit (UCL), and a bottom line that represents the lower control limit (LCL).

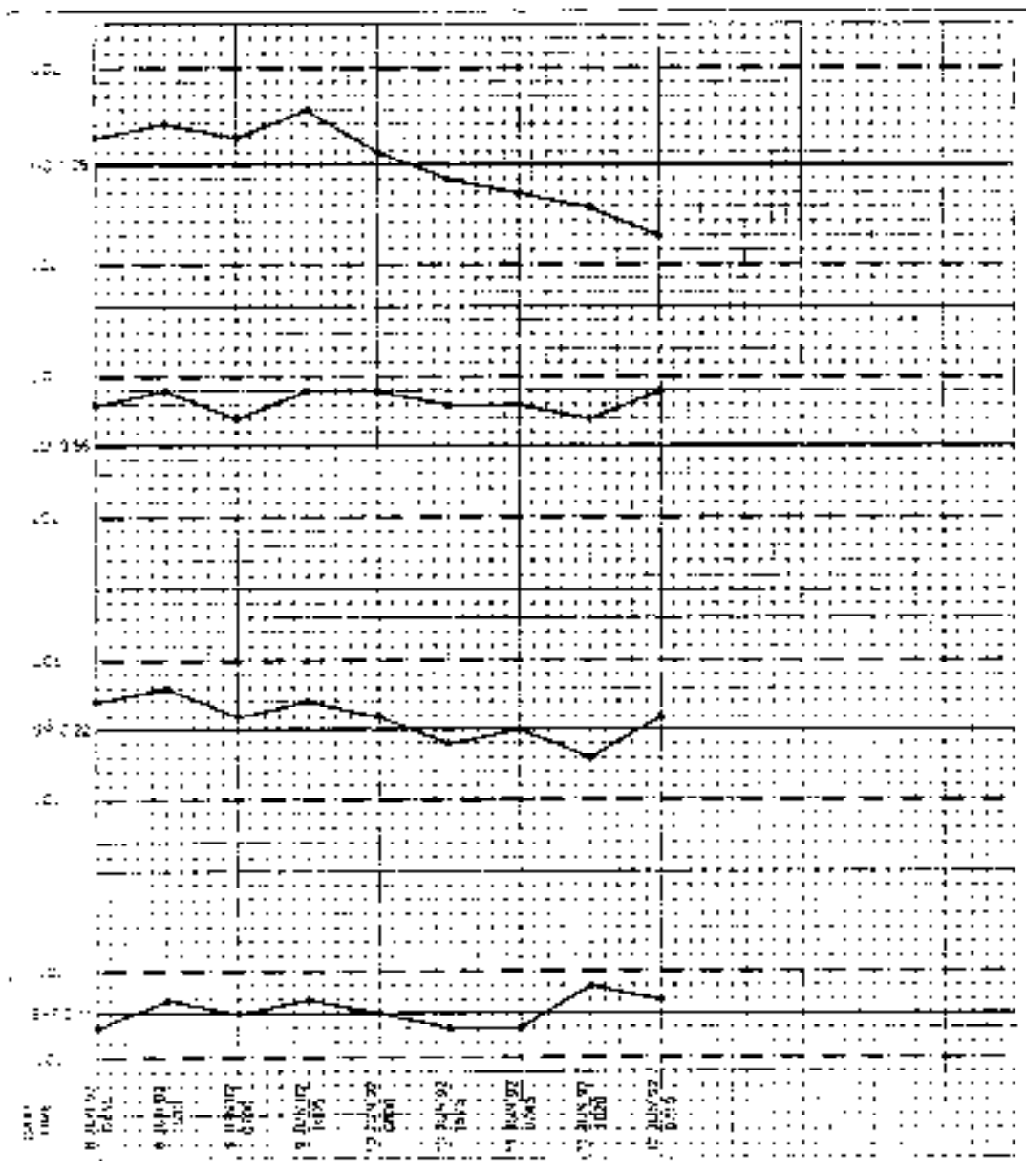


Figure 10-28.—Process control chart.

Refer to figure 10-28. For example purposes only, the following steps are monitored and plotted on a control chart below. The steps being monitored are as follows:

- High density (HD) is step 17 and reads 1.20.
- ◆ Low density (LD) is step 6 and reads 0.60.
- ◆ Speed point (SP) is step 4 and reads 0.23.
- B+F is 0.12.

When plotting a control strip, you should always annotate the date and the time the control strip was processed. When all points plot within the upper and lower control limits, the film can be processed. When any point plots outside the upper control limit (UCL) or lower control limit (LCL), the process is out of control. You should notify your supervisor before processing any material through that particular process.

CHAPTER 11

BLACK-AND-WHITE PRINTING

In photography, printing is the term used to describe the process of making positive images from negatives (and in some instances, from film positives). The most familiar example is the print made on a paper base. A photographic print is made by passing light through the negative onto a piece of paper coated with a light-sensitive emulsion, very similar to film.

The two primary methods of making photographic prints are **contact printing** and **projection printing**. The principal difference in the two methods is the method of exposing the paper. In contact printing, the paper is physically in contact with the negative; while in projection printing, the paper is separated from the negative, and the image of the negative is projected onto the paper by a lens. Because projection printing is usually used to produce an enlarged image, it is generally referred to as enlarging. Contact printing produces positive images that are the same size as the negative images. Enlarging usually produces positive images that are larger than the negative image; however, because optics are used in projection printing, the image formed on the paper can also be made smaller or the same size as the negative image.

The quality of the photograph can be varied during printing through the choice of printing material, exposure, and processing. In printing, some negative defects may be compensated for, thereby eliminating the reproduction of the defect in the print.

A well-planned, black-and-white or print room should have at least the following material and equipment arranged properly so the flow of work moves easily from one stage to another:

- A contact and/or projection printer (enlarger)
- A sink large enough to accommodate the largest trays used in the print room
- Safelights
- A set of print trays
- A graduate
- A thermometer
- Print tongs

- A wall clock with a second hand
- Hand towels

Photographic printing papers are predominantly blue and green sensitive and may be processed under the appropriate safelight conditions. Consult the data sheet packaged with the paper you are using or the *Photo-Lab-Index* for the recommended safelight.

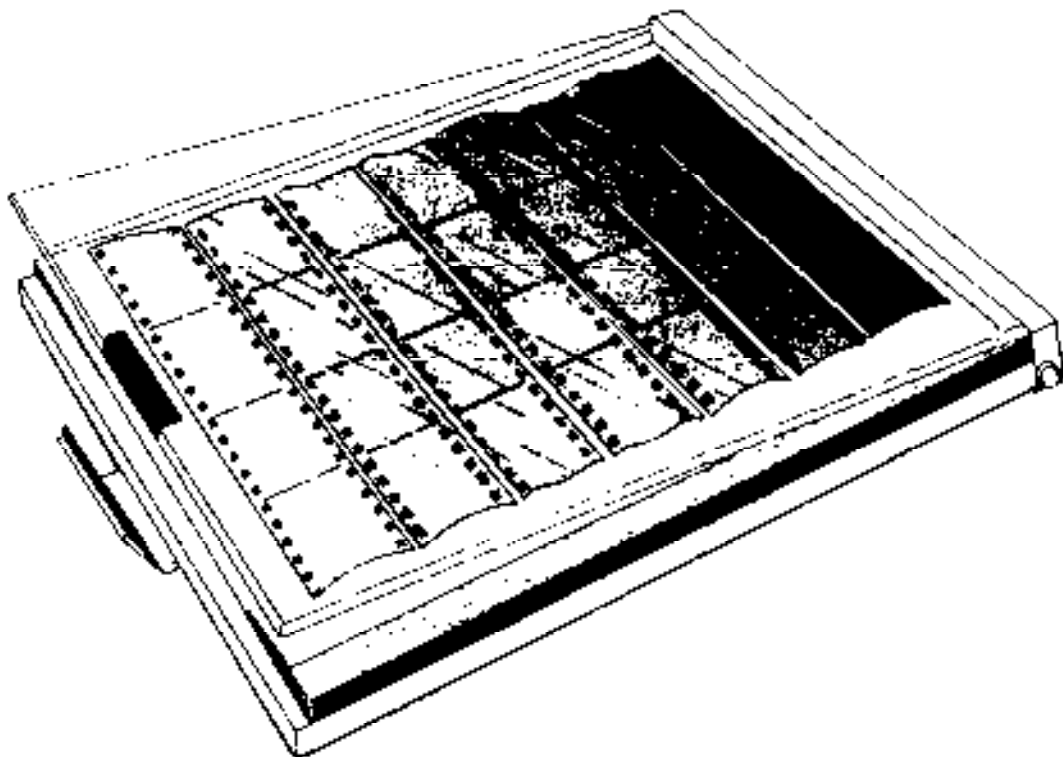
A minimum of three trays are needed for hand processing prints. The trays should be arranged in the sink from left to right—one each for developer, stop bath, and fixing bath. The ideal setup has five trays—one each for developer, stop bath, first fixer, second fixer, and a water rinse. This setup saves chemicals and results in better fixing of prints.

The chemistry used to develop and fix prints is similar to and serves the same purposes as film processing. When processing conditions are controlled carefully, the processing specifications recommended by manufacturers for their printing papers can be used to provide excellent and consistent results.

The print developer used most commonly in Navy imaging facilities is the Ilford Multigrade developer. The recommended tray processing developing times vary with the type of paper and developer being used. With the developer at 68°F, resin-coated paper development is complete in about 2 minutes. The image appears in about 30 seconds. Because developer is incorporated in the paper, the useful capacity of 1 gallon of Ilford Multigrade developer (diluted 1:9) is about 400 8x10 prints, or equivalent.

Any standard stop bath serves sufficiently. A stop bath may be used at all times, but it is necessary when processing a large number of prints; furthermore, the use of a stop bath after development prolongs the life of the fixing bath. If no acid is available for a stop bath, a water rinse should be used after the developer.

A standard fixing bath should be used to fix the prints. Consult the *Photo-Lab-Index* for the various prepared chemicals available for fixing prints. Follow the manufacturer's instructions when fixing prints because there are adverse effects in over-fixation as well as underfixation. Overfixation tends to produce thinning



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Figure 11-1.—Proof printer.

or bleaching of the photographic image. Underfixation causes the image to darken with time.

WARNING

Never dump fixer down the drain. Dispose of all chemicals according to the local instructions of your imaging facility.

In this chapter, the procedures and techniques for producing black-and-white positive paper prints from black-and-white negatives are discussed. Keep in mind that the procedures and techniques provided are the basics for printing color negatives and positives to produce color prints as well as making duplicate black-and-white film positives.

CONTACT PRINTING

A contact print is produced when you expose a sheet of photographic printing paper through a negative with the paper emulsion and the emulsion side of the negative in contact with each other. Light is directed through the negative which controls the amount of light transmitted to the paper. The dense areas of the negative pass less

light than do the more clear or less dense areas. The image densities formed (after development) in the emulsion of the paper make a positive print that represents the tonal values of the original subject. Since the paper is in direct contact with the negative, the print produced is exactly the same image size as the negative.

When you are making a print from a negative by this method, only a 1:1 ratio is obtainable, but contact printing is generally a more rapid means of making prints than enlarging.

The quality of contact prints usually surpasses that of enlargements because there is no scattering of the image-forming light; however, with the ever-increasing use of small film format sizes and since only same-size prints can be made by contacting, enlarging has, for the most part, replaced contact printing in the Navy except for making proof prints.

CONTACT PRINTERS

Contact printing is the quickest, simplest, and most economical method of producing photographic prints. For making proof prints and small volume printing, all a “contact printer” needs is a sheet of glass, a light

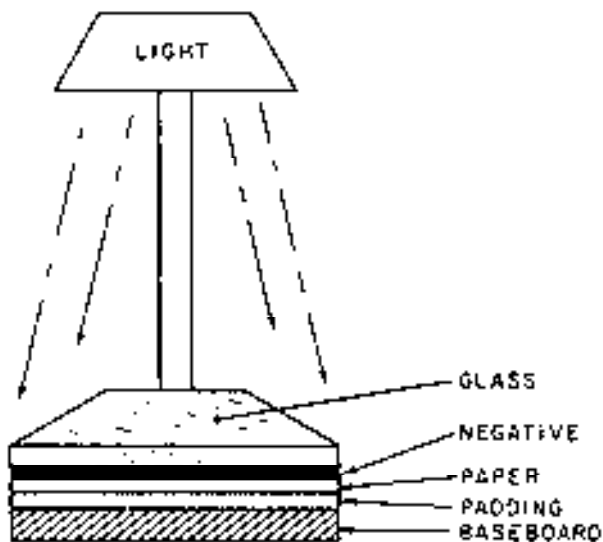


Figure 11-2.—Contact printing arrangement.

source, and some sort of padding. For large volume and fine printing control, a specially designed and constructed contact printer is used

Glass and Pad

For you to make contact proof sheets and an occasional contact print job, only a glass and a supporting pad are necessary. “Contact printers,” consisting of a sheet of glass hinged to a metal frame and a pad assembly, are generally known as proof printers (fig. 11-1). When such a device is not available or is not large enough for the negatives to be contact printed, a piece of 1/4-inch plate glass and soft padding (such as a rubber typewriter pad) can be used. Quarter-inch plate glass is heavy enough to keep the negatives and paper flat and in contact during exposure. The glass must be free of flaws, scratches, bubbles, and dirt. For color contact printing, the glass should be water white or crystal grade; otherwise, filtration is required to overcome the color tint of the glass. The edges of the glass should be beveled and the corners slightly rounded or taped. This is a safety measure to prevent cuts when the glass is being handled.

The pad should be at least as large as the glass. The pad provides a cushioned surface to press the paper and negative together under pressure from the glass.

To use either the proof printer or the glass and pad to make contact prints, you should place the printing paper emulsion side up on the pad material. The negatives are then placed emulsion side down on the paper and the glass is positioned on top. Then turn on



303.47

Figure 11-3.—Using an enlarger as a light source for contact printing.

the exposing light (fig. 11-2). This, of course, is done in the darkroom under suitable safelight illumination.

Adequate pressure must be kept on the negative and print paper so their entire surfaces are in contact during the exposure. Any separation between the negative and the paper results in an unsharp point in the image.

The light source may be any controlled lamp for printing with a proof printer or glass and pad. An overhanging light bulb or a safelight, with the filter removed, connected to a timer is a convenient arrangement. In most Navy imaging facility print rooms, an enlarger is used as the light source (fig. 11-3).

Contact Printer

For large volume contact printing, a contact printer is more convenient. A contact printer is basically a box with exposing lights, safelights, and viewing lights inside with a glass top. It has a hinged pressure cover to hold the negative and paper in contact during exposure. Switches on the printer control the lights in the printer or the printer may have a built-in timer. Also, the contact printer may be connected to an external timer.

Contact printers are all built around the same basic idea. However, consult the manufacturer’s instructions

that accompany the contact printer for specific operating instructions.

A useful feature on contact printers is an adjustable masking device. This device is attached to the printer so it fits snugly over the printing glass. The mask consists of thin metal leaves used to “frame” the negative. These blades make it possible for the prints to have white borders or margins. To produce prints with white borders when using printers that are not equipped with a masking device, you can use hand-cut masks from thin, black paper.

The basic steps necessary for you to produce a print when using a contact printer are as follows:

- Place the negative emulsion side up on the printing glass.
- Place the paper emulsion side down over the negative.
- Bring the platen or pressure cover down into the printing position.
- Turn the printing light(s) on for the required exposure time.
- Release the platen, and process the paper.

When you are viewing the negative under a white light, it has a shiny side and a dull side. The shiny side is the film base; the dull side is the emulsion side. A similar examination of photographic paper under a safelight shows that the paper has a shiny side and a dull side. In this case, the shiny side is the emulsion side; the dull side is the paper support. Photographic paper normally has a slight curl toward the emulsion side, although this is not true in all cases.

To make contact prints, you must place the dull side of the negative in contact with the shiny side of the paper; that is, they must be emulsion to emulsion. If the negative base is in contact with the paper emulsion, the photograph will be reversed. In some cases, such a reversal in the print is not easily seen, but it becomes strikingly clear when there are letters or numbers in the picture.

CONTACT PRINTING PROCEDURE

Check the lamp to be sure it is operating properly. Rinse the trays with fresh water, and prepare the developing, stop bath, and fixing solutions. The trays should be larger than the prints to be produced, and one of the largest or deepest trays available should be used for the fixing bath.



303.48
Figure 11-4.—Black tape used as paper stops.

When the solutions are ready, rinse and dry your hands. A supply of printing paper should be available and conveniently located near the printer. Place an empty paper box or paper safe near the printer if the prints are not to be processed after each is exposed. Hold the paper in the paper box or paper safe until the paper is ready to be processed. If the paper is not stored in a paper box or paper safe, it will eventually fog even under safelight conditions.

Masking the Negative

When contact prints require white borders, some type of mask is needed to prevent the printing light from exposing the edges of the printing paper. When the printer is not equipped with a masking device, make a mask to fit the negative. (Usually proof prints do not require masking.) The material used for masks should be opaque and not much thicker than typing paper. When the masking material is too thick it causes a distinct blurring along the edges of the print image.

Some type of guideline or paper stop is useful when placed at one end and one side of the mask opening. The paper stop forms a square-corner guide for alignment of the printing paper. The paper guide helps you to place the paper evenly and parallel with the opening in the mask, and it helps keep the borders even on the print (fig. 11-4). The corner guide or stops can be quite thick without causing poor contact between the negative and the printing paper during exposure. Some printers are equipped with metal strips, so you can mask the negatives by setting the strips to frame the negative.

The negative and printing glass must be cleaned before you place the negative on the printer. Place the negative emulsion-side up on the printing glass and arrange them under the mask until the desired composition is obtained. When you must make more than one print from the same negative, tape the negative (at the corners only) to the printing glass. If the negative is completely taped down, air can be trapped between it and the glass. When the platen or pressure cover is moved into the printing position, the air does not escape. This results in an unsharp print. When you use a hand-cut mask, tape the mask to the glass along one edge before positioning the negative.

Printing Filter Selection

The first requirement for you to make a good print is a clean negative. The negative must then be examined to determine the contrast (flat, normal, or contrasty) and the approximate exposure time required to produce a quality print. As a beginning darkroom worker, you may not be able to make these determinations accurately; however, in a short time and with a little experience, you should overcome any trouble.

In analyzing a negative to determine the most suitable printing filter, be careful not to confuse contrast with density. When in doubt, make test prints. If the test print is contrasty, you should make another test print with a lower numbered filter to lower the contrast. If the original test print lacks contrast, change to a filter with a higher number to increase the contrast. This is a good time to review the information on printing filters and printing papers in chapters 2 and 3.

Test Print

The printing exposure is the operation most likely to cause trouble for an inexperienced darkroom technician. Unlike most films that can tolerate some overexposure and underexposure and still yield usable photographs, printing papers must be exposed correctly to produce good prints.

Experience and familiarity with printing equipment does help; but for a beginner, the correct exposure for prints from most negatives is best determined by making test prints.

The factors that affect exposure are as follows:

- The intensity of the printing lights
- The distance between the printing lights and the printing glass

- The sensitivity of the printing paper
- The density of the negative

The first three factors are standardized and, therefore, eliminated as variables by using the contact printer and by printing with the same type of paper. The only remaining variable is negative density. You can determine negative density by making a few test exposures. The exposure time for a negative of average density may be about 1 to 3 seconds. When the negative is large, avoid the expensive and wasteful temptation of using a whole sheet of paper; instead, use a strip about 2 inches wide and as long as the negative for the test exposure. For example, an 8x10 sheet of paper can be cut into three or four small strips.

After you have determined the filter and the test-exposure time, set the timer accordingly. Place the paper test strip over the negative in the printing position. Place the test strip on the negative so the test exposure includes some highlights, midtones, and shadow areas. Hold the paper in position with one hand and lower the platen. As soon as the platen grips the edge of the paper, move your hand away. When the platen is fully lowered, turn on the printing lights for the test-exposure time.

When the test strip has been exposed, develop it for the recommended time. If the image is too dark, the exposure was too long. If the image is too light, the exposure was too short.

It is difficult for even an experienced photographer to judge the contrast of an under- or overexposed print that has been under or overexposed. Before attempting to judge the contrast of a print, you must change the exposure until the proper density is reached. A normally exposed print develops gradually, but steadily—shadows first, then midtones, and finally highlights. The image should appear in about 30 seconds, providing the developer is at the proper strength and temperature. If the image develops very quickly with a general mottling, it is overexposed and the next test should be given less exposure. An overexposed print develops in a very short time, and the common temptation is to “pull” (remove) it from the developer. This prevents the image from getting too dark, but results in a flat, muddy, uneven, tone image. On the other hand, when the recommended development does not produce a print of the proper density after 2 minutes, the print is underexposed. After you have successfully exposed and processed a few prints, you will rapidly gain enough experience to estimate, closely, the density of negatives for contact printing exposures.



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Figure 11-5.—A processed test strip used to determine exposure.

When a change in exposure time does not produce a print of good contrast, a different printing filter is needed. When a properly exposed and developed test print lacks clean highlights and shadows, try a higher number of printing filter. When the print is mainly black and white with few middle tones, use a lower number filter. Once you have produced a satisfactory test print, you can make the production prints from that negative.

If you use a printing frame (glass and pad or proof printer) to make contact prints, the most convenient and economical way to determine exposure and correct contrast is to expose the test strip in progressive steps of say 2, 4, 6, and 8 seconds. You do this by holding an opaque card on top of the glass and covering three quarters of the paper and exposing one quarter of the paper for 2 seconds. Then move the card to cover one half of the paper and give it an additional exposure of 2 seconds. Move the card so it covers one quarter of the paper and give it another 2 seconds of exposure. Finally, remove the card and give the entire sheet one last exposure of 2 seconds. This shows a distinct progression of exposures of 2, 4, 6, and 8 seconds (fig. 11-5). Develop the test strip normally. To determine the correct exposure, you must examine the test print under white light.

When the correct exposure appears to be between two steps, the required exposure can usually be estimated with some accuracy; however, additional test prints may be needed.

After the exposure time and contrast for one negative have been determined by tests, other negatives of similar density and contrast can be given the same filtration and exposure as a starting point. At first, negatives with widely differing contrast and density require test prints. With experience, you can judge most negatives without resorting to test prints.

Exposing and Processing Prints

When a test print develops in the recommended time, rinse it in the stop bath, immerse it in the fixing bath for about 30 seconds, rinse it in fresh water, and inspect it carefully under white light. When the density and contrast of the image look correct under white light, make your first “straight print.”

Place the sheet of printing paper, emulsion-side down, over the negative in the printing position by aligning the edges of the paper with the paper stops on the mask (if a mask is used). With one hand, hold the paper in the printing position with one hand to keep it

from slipping out of place when the platen first presses against the edge of the paper, and start the printing cycle as described previously. After the printing cycle is completed, remove the paper for processing. Any number of duplicate prints can be made by repeating the printing cycle.

Drop the print, emulsion-side down, into the developer. Immerse it immediately with a quick sliding motion while pushing the print under the surface of the solution. Grasp one edge of the print, lift it up, and turn it over. Replace the print emulsion up on the surface of the solution. Push the print under the surface again and leave it under during the remaining time in the developing tray. The print must be immersed rapidly and evenly to prevent air bubbles from forming on the emulsion surface. Be sure that all the emulsion gets wet with the developer in the shortest time. Agitate the print constantly for the remaining developing time.

Each type of printing paper has its own working characteristic. The main difference in each type is the length of time required for the image to develop in a given type and strength of developer. A correct print is one that develops to the proper density and contrast in the recommended time. A print should be exposed so it reaches the proper density and contrast only with full development; otherwise, the tone and appearance of the print will be below acceptable standards. If the exposure is insufficient, the image does not develop to the desired density even with longer developing time. It appears pale and lacking in brilliance. Also, stains may occur when development is carried out too long. Paper developers work more rapidly than those used for films; consequently, print immersion must be quick and even, and agitation should be constant.

When the print is fully developed, lift it out of the developer, drain it momentarily, and place it in the stop bath. After about 5 seconds in the stop bath, lift the print, drain it briefly, and place it in the fixing bath. Agitate it in the fixing bath for a few seconds and examine it for defects that might cause it to be discarded. When the inspection is completed, place it emulsion-side down in the fixer and complete the fixing process. Follow the manufacturer's instructions as to the required fixing time. Fixing for Ilford Multigrade paper is complete after about 30 seconds in fresh fixer.

Some papers have a tendency to float in the fixing bath, especially if the bath is mixed a little stronger than usual. When prints float in the fixer, they should be handled constantly or turned facedown to prevent the emulsion from being exposed to the air. The parts of a

print exposed to the air during fixing may become stained

Prints that float facedown should not create problems except for the chance that air bubbles can be trapped under the prints. Air bubbles under a print produce stains and must be prevented. By immersing the prints edgewise and facedown, you eliminate air bubbles.

CAUTION

Never attempt to work backwards through the sink-line process. A few drops of fixer on your hands or from a print will contaminate the developer.

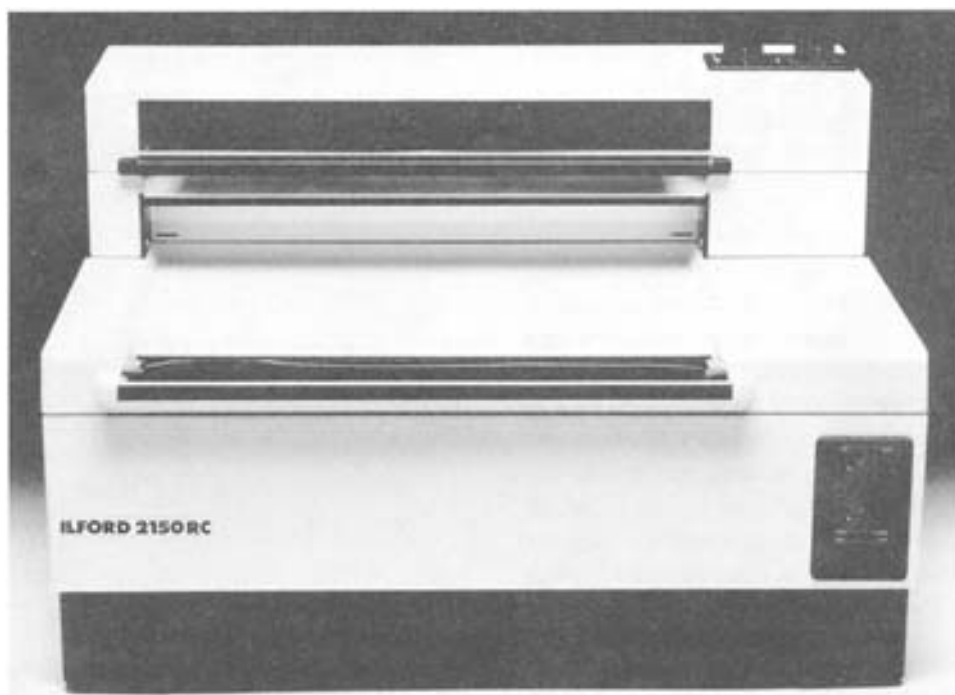
Group Print Development

Several prints can be processed at one time, provided they are separated and agitated sufficiently during the process. Each entire print must be wetted uniformly by the solutions so all parts of each print are processed uniformly.

When you are processing several prints at one time, immerse them in the developer separately at regular intervals and, at the end of the proper developing time, remove the prints in the same order and at the same regular intervals. To prevent the prints from sticking together, you should let each one be completely immersed before the next print is put in the developer. Agitation should be done by rotating the prints in the solution. To do this, take each print, in turn, from the bottom of the tray and place it on top of the other prints.

As the prints reach full development, transfer them one by one to the stop bath. Treat them for 10 to 20 seconds; then place them in the fixer and agitate each print to make sure none of them stick together.

After the prints are fixed, they must be washed and dried. The RC or polyethylene coating on paper prevents absorption; therefore, they require a short wash time. Wash prints for 2 minutes in a good supply of running water to ensure they are completely free of chemicals. The water temperature should not be lower than 41°F (5°C). Prints may be dried in a print dryer designed for polyethylene or RC papers not to exceed 190°F (68°C). Adjust the print dryer to the minimum temperature required to dry the paper sufficiently. If the print dryer is too hot, the polyethylene coating on the paper will melt. When a paper dryer is not available, remove the excess water and dry the prints naturally at room



*Courtesy of Ilford Photo
302.307X*

Figure 11-6.—Ilford 2150 black-and-white paper processor.

temperature. The prints should be dry in 10 to 15 minutes.

In the Navy today, most imaging facilities process prints through automatic processors (fig. 11-6). It is important for you to know how to process black-and-white prints in trays, because not all of the small facilities have automatic machines. Like all machines, automatic processors breakdown and require maintenance periodically.

When processing photographic prints through an automatic processor, you feed the unprocessed print into the machine; and within seconds, it exits the processor washed and dried. Your hands never get wet, and you can process a large number of prints rapidly. The two most common black-and-white print processors used in the Navy are manufactured by Ilford and Kodak.

When contact printing an entire roll of negatives that are not consistent in exposure, it is necessary for you to make more than one proof sheet from the same set of negatives. Each sheet of paper should be exposed to print some of the negatives correctly on that roll. The result is a composite proof sheet where all the frames are readable. After all, a proof sheet is a tool to select the best frames for enlargement and delivery to the requester. The proof sheets can be stapled together for

filing. This is why, as a photographer, you should strive to expose each and every photograph correctly. Amateur snapshooters can shoot film with wildly varying exposures; professional photographers cannot. A good print shows detail in both the highlights and the shadows.

Cleanliness is essential to produce good prints consistently. Keep a supply of clean towels handy, and wash and dry your hands before handling paper and negatives. Clean, dry fingers should touch only the extreme edges of the emulsion side of these papers. When developer is on your hands, dark fingerprints show on the print. Fixer produces white fingerprints. These fingerprints develop and show clearly on the finished prints. You should use two print tongs—one for the developer and one for the stop and fixing baths.

It is not economical to use minimum quantities of developer. Small quantities oxidize (turn brown) very quickly. Oxidized solutions cannot produce clean, brilliant, pleasing photographs.

PROJECTION PRINTING

Projection printing is the process of making positive prints by projecting the negative image onto photosensitive paper. The projected image may be

enlarged the same size as the negative image or reduced in size. When the print images are larger than the negative images, the process is called enlarging. When the print images are smaller than the negative images, the process is called reducing. Because projection printing is usually used to make positive prints with images larger than the negative, projection printers are referred to as enlargers. The term enlarging generally refers to all forms of projection printing.

Projection printing differs from contact printing because the negative is separated from the paper, and the image is projected by a lens onto the sensitized material. The negative is placed between an enclosed light source and a lens. The lens receives the light that passed through the negative and projects the image onto the paper. Changing the distance between the lens and the paper controls the size of the image. The image is focused on the paper by adjusting the distance between the negative and the lens. You can enlarge or reduce the size of the projected image by changing and adjusting these distances.

Enlarging is a very adaptable and versatile process, because considerable image and exposure control can be used. The main advantage of enlarging over contact printing is large prints can be made, but there are several other important advantages. The advantages of projection printing are as follows:

- Cropping or selecting the main area of interest in a negative can be enlarged to any suitable size. This provides an opportunity for you to eliminate unwanted and distracting elements from around the point of interest of the picture.
- Dodging or burning in. This allows you to apply local exposure control to bring out more detail in the highlight and shadow areas.
- Local fogging with a small external light, such as a penlight, to darken selected areas; for example, by darkening the background of a portrait, you direct the viewer's attention to the face.
- Special effects can be performed, such as changing the appearance of the image by use of diffusers or patterns between the lens and paper.
- Image distortion correction or introduction can be done by tilting the enlarger easel. (An easel is the device used to hold the paper during exposure.)

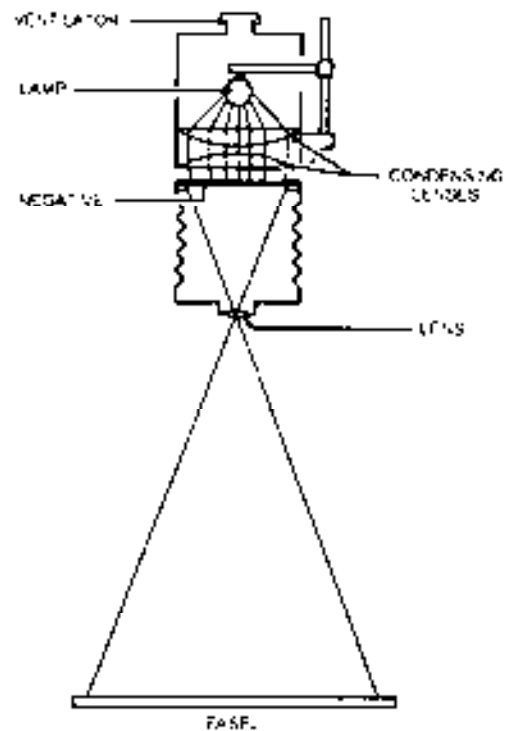


Figure 11-7.—Basic enlarger.

ENLARGERS

In general, all enlargers are similar in design and operation. They have an enclosed light source, some method of providing an even distribution of light over the negative, a negative carrier, a lens, a means of adjusting the lens-to-negative and lens-to-paper distances (fig. 11-7). The degree to which the image is enlarged can be referred to in terms of diameters; for example, a two diameter or 2X enlargement is twice the length and twice the width of the negative image, or four times the area. A three diameter or 3X enlargement is three times the length and width of the negative image, or nine times the area.

Most enlargers have a tungsten lamp as a light source. The lamp is enclosed in a lighttight housing that is ventilated to prevent excessive lamp heat from damaging the negative. Some enlargers have blowers to circulate air and cool the inside of the lamp housing.

The negative carrier used in an enlarger may be either a dustless type or a glass sandwich type. The dustless type of carrier is made of two metal plates with an opening in the center large enough to hold the negative. The negative is placed between these plates and held in position by its edges. This type of carrier is good for negatives 4x5 or smaller, since these negatives are stiff enough to remain flat. The glass sandwich type

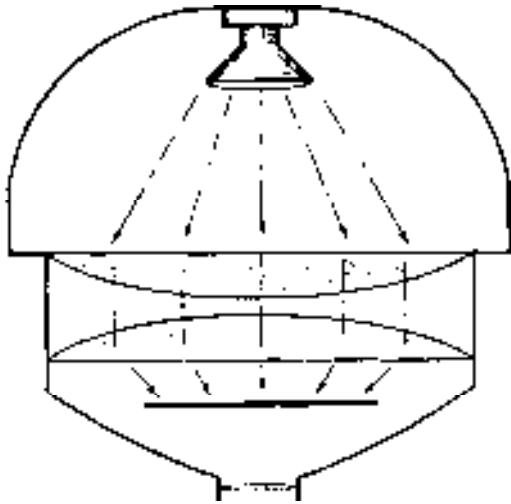


Figure 11-8.—Condenser enlarger.

of carrier is a holder where the negative is placed between two sheets of glass. This type of holder is used for larger negatives since they have a tendency to sag in the center when they are not supported by glass.

The lens used in an enlarger should have an angle of field large enough to cover the negative being printed. A lens with a focal length approximately equal to the diagonal of the largest negative to be printed provides sufficient angle of field.

The bellows of an enlarger should be capable of extending at least twice the focal length of the lens. This amount of bellows extension is necessary for making 1:1 reproductions. Although it is possible to make reductions to any desired size, the bellows on most enlargers cannot be extended far enough to make reductions smaller than 1:1. Smaller reductions can be made by using a longer focal-length lens, but a better method is to use a reducing attachment. A reducing attachment consists of a section of supplementary bellows fitted with a longer focal-length lens.

The systems used to distribute the light evenly over the negative divide enlargers into three general types—condenser, diffusion, and condenser-diffusion enlargers.

CONDENSER ENLARGERS

A condenser enlarger has a set of condensing lenses between the light source and the negative. The condensing lenses concentrate or focus the light from a light bulb and direct the light rays straight through the negative to the lens (fig. 11-8).

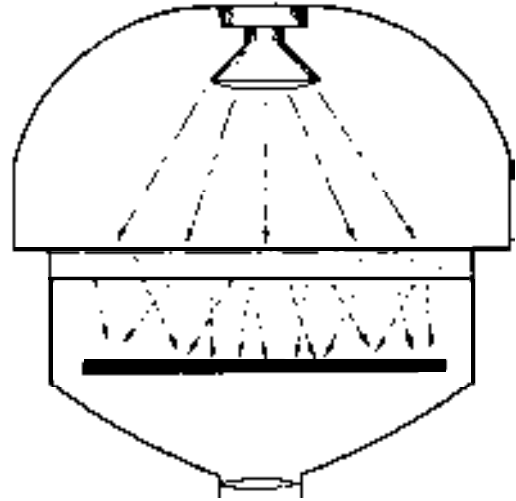


Figure 11-9.—Diffusion enlarger.

The condenser lenses are a pair of planoconvex lenses mounted as a unit with their convex surfaces face to face. A condenser enlarger produces a sharp, brilliant image and produces higher contrast and detail than diffusion enlargers. Negative defects and scratches are more apparent in the print when made on a condenser enlarger.

The characteristics of a condenser enlarger are as follows:

- It produces maximum tone separation.
- It is suitable for making prints to a high degree of enlargement, because of its optical characteristics.
- It produces a higher image contrast with a given negative than printing with a diffusion enlarger.
- It is not recommended for negatives that have been retouched, because the edges and ridges of the retouched areas may print as dark lines.
- It may be used to emphasize negative defects and silver grain structure.

DIFFUSION ENLARGERS

A diffusion enlarger has a diffusion screen (usually ground or optical glass) between the light source and the negative. Light from the lamp, as well as the light reflected from the reflector of the lamp housing, falls on the diffuser that scatters the light. After the light passes through the diffuser, it travels in many directions when it falls upon the negative (fig. 11-9).

When a diffusion enlarger is used, negative defects are not recorded as clearly in the print, compared to condenser enlargers. There is an apparent overall “softening” of the image sharpness and a reduction in image contrast.

Most of your negatives can be enlarged equally well with either a condenser or diffusion enlarger; however, for certain work the choice of enlarger may be an important factor.

The characteristics of a diffusion enlarger are as follows:

- It should be used for printing negatives that have been retouched.
- ◆ It subdues negative defects and grain.
- ◆ It has less image contrast than that produced with a condenser enlarger.
- ◆ It is not suitable for making large prints due to the softness of the image produced.

Diffusion enlargers should be considered for use in portraiture and when the negatives have been retouched.

CONDENSER-DIFFUSION ENLARGERS

A condenser-diffusion enlarger or semidiffusion enlarger is a compromise between the two extremes of condenser and diffusion. A condenser-diffusion enlarger uses a diffusion (frosted) bulb and condensers, or a diffusion bulb with either a diffusing glass over the condensers, or else one of the condensers itself acts as the diffuser.

A condenser-diffusion enlarger has the advantages of a diffusion enlarger to reduce the effects of negative defects, silver grain structure and dust, and it also uses the condenser system for speed and uniformity of light.

The enlargers in general use by most Navy imaging facilities are the condenser-diffusion type. They use frosted or diffusion bulbs with or without a diffusion screen placed above the condensers.

ENLARGER LENSES

As with a camera, the lens of the enlarger is the heart and should be high quality and reasonably fast. It is senseless to buy high-quality lenses for the camera, then nullify the quality they provide with an inferior enlarging lens; however, a quality camera lens is not suitable for enlarging. Even a moderately good

Table 11-1.—Enlarging Lens Focal Lengths for Various Negative Sizes

Negative size	Lens focal length
35mm	50mm
120 (2 1/4 x 2 1/4) (6x6cm)	75mm
120 (2 1/4 x 2 3/4) (6x7cm)	105mm
4 x 5 inch	135-150mm

enlarging lens is better for enlarging than most camera lenses.

The focal length you use with an enlarger should be based on the size of the negative to be enlarged. (See table 11-1.) Generally speaking, the focal length of the enlarging lens for a given negative size should be the same as a normal-focal-length lens used by the camera for the negative.

While it is not necessary for the lens to cover the full area of the negative, the longer the lens focal length, the less magnification at a given lens-to-paper distance; therefore, you must have several lenses of various focal lengths available for your enlargers when you want to make large prints from small portions of your negatives.

Because an enlarger produces an image from a flat field (the negative) onto a flat field (the paper), depth of field is not a factor, except when distortion control (discussed later) is used. An enlarger lens can usually be used at large f/stops; however, when an enlarger lens is used at its maximum aperture, there may be some falloff of light at the edges of the circle of illumination. Therefore, an enlarger lens is usually stopped down one or two f/stops from wide open. Like a camera lens, when an enlarger lens is used at very small apertures, there is a loss of image definition due to diffraction.

ENLARGING PROCEDURE

The darkroom design, the equipment, and the arrangement for enlarging are basically the same as for contact printing. The safelights should be appropriate for the type of paper being printed. The size of the prints may require larger trays and greater amounts of solution, but they should be set up in the same way as for contact printing.

To produce good enlargements, you need good negatives, a clean enlarger, clean printing filters, correct exposure and development, and careful processing and finishing. Although most negatives can be printed by projection, there are a few desirable characteristics. A

good negative has normal density and contrast. It must be sharp and free from such defects as scratches, abrasions, dust, lint, and fingerprints.

ENLARGER AND EASEL ADJUSTMENTS

Insert the negative in the negative carrier so the emulsion side is down when placed in the enlarger. In other words, the base of the negative (the shiny side) should be up or facing the lamp when inserted into the enlarger. Clean the negative and be sure there is no dust on it. You can use the light from the enlarger to check for dust. Blow off any dust with a bulb syringe or low-pressure air. Then, use a camel-hair brush to brush or lift off any remaining dust. Replace the negative carrier containing the negative into the enlarger; ensure it is seated properly.

Set the paper guide or masking device on the easel to form the border width needed or use a preset easel. As an aid for composing and focusing the image accurately, place a sheet of white paper in the easel-the base side of the paper is used for a focusing sheet-then turn out all white lights.

Turn the enlarger lamp on, open the lens to its maximum aperture, and move the easel around until the desired portion of the image is in the picture area. Raise or lower the enlarger head on the upright standard or column and focus the image. Shift the easel as needed, and continue these adjustments until the image is enlarged (or reduced) to the desired size, focused sharply, and composed on the easel correctly.

The size of projection prints is limited by the optical system used and the working space available. A scene may be printed in sections on several sheets of paper and spliced together. Likewise, the enlarger can be turned 180 degrees and projected on the floor. If you use this baseboard method, be sure to counterweight the enlarger by placing a heavy weight on the baseboard to prevent the enlarger from tipping over.

The picture is easier to compose with the scene right-side up. When it is upside down from your point of view, the negative carrier should be rotated or removed and the negative repositioned. The image appears right-side up on the easel when it is positioned upside down in the negative carrier.

You should adjust the easel until the best composition is obtained. When composing the image, try to correct errors of image composition in the negative. The way the scene is composed on the negative may be a controlling factor in the final composition.

Straighten the horizon, and when possible, prevent it from cutting the print image in half. When the horizon is not to be included in the print, make sure vertical objects are parallel to the sides of the print. When the space around the point of interest of the picture is distracting, you can change the composition of the picture through cropping. You can do this by increasing or decreasing the magnification of the image and by readjusting the easel.

After the image is correctly composed and focused, the lens aperture should be stopped down so your basic exposure time is about 10 seconds. An exposure time of 10 seconds allows you to accomplish a normal amount of dodging and is fast enough to be practical for quantity production. The exact amount the lens should be stopped down depends on the density of the negative and the magnification of the image. This can be difficult to determine without experience. If you are new to printing, you should start by stopping down the lens to about $f/5.6$ or $f/8$ for a normal negative.

MAKING A TEST PRINT

There are many factors that affect exposure times in the enlarging process. Some of these factors are as follows:

- The light source and illumination system of the enlarger
 - ◆ The f /stop of the lens
 - ◆ The density of the negative
 - ◆ The degree of enlargement
 - ◆ The speed of the paper
- The density and color of the contrast printing filter

The best way for you to determine the correct enlarging exposure is by making a test strip. Although the test strip is the most reliable way to determine exposure, you do not need a test strip for every enlargement. It is, however, a wise practice whenever you are in doubt as to the exact exposure required.

A test strip for enlarging is made the same way as for contact printing. When making the enlargement test strip, you must try to select the proper printing filter based on negative contrast.

Once the printing filter has been determined, set the enlarger for producing the desired size prints. Set the lens f /stop at $f/5.6$ or $f/8$, for example. Next, examine

the projected image on the focusing paper in the easel and estimate the amount of exposure time you think the print requires. From experience, you estimate the correct exposure time to be about 15 seconds. Because your estimate may be incorrect, a logical procedure is to expose a test strip in four sections.

To make the actual test strip, you must do the following:

1. Place one test strip on the easel in a position to sample the highlights, midtones, and shadows.

2. Cover three quarters of the strip with opaque paper or cardboard and expose the uncovered section for 5 seconds.

3. Move the cardboard to cover one half of the strip and give another 5 seconds of exposure.

4. Again move the cardboard-this time to expose three quarters of the strip-and provide 5 seconds of exposure.

5. Now uncover the entire strip and expose it for another 5 seconds. This produces a strip with exposures of 5, 10, 15, and 20 seconds.

6. Process the test strip the same as contact prints.

7. Examine the processed test strip under white light and select the segment representing the exposure that gave the best results. If a time between two sections gives the best result, make another test at the estimated time. When you have selected the exposure, you are ready to make a full-size print-if the contrast is correct. If not, change filters and make another test strip.

The primary purpose for a test print is to determine the correct exposure, but it can also help you determine the correct contrast or printing filter to use. When the test print is too contrasty or too flat, make another test print with a higher or lower number of contrast printing filter.

When printing, contrast (the difference in tonal value between the highlights and shadows) is as important for you to determine as is the correct exposure. Almost all Navy imaging facilities use variable contrast printing papers. To control contrast with this type of paper, you must use variable contrast printing filters.

Unlike film, increasing the development time of paper does not increase the contrast significantly. In fact, when paper development is carried out much beyond the recommended time, contrast can actually decrease due to fogging. Likewise, short development times should not be used in an attempt to get lower contrast. The result

Table 11-2.-Multigrade Filter Selection Guide

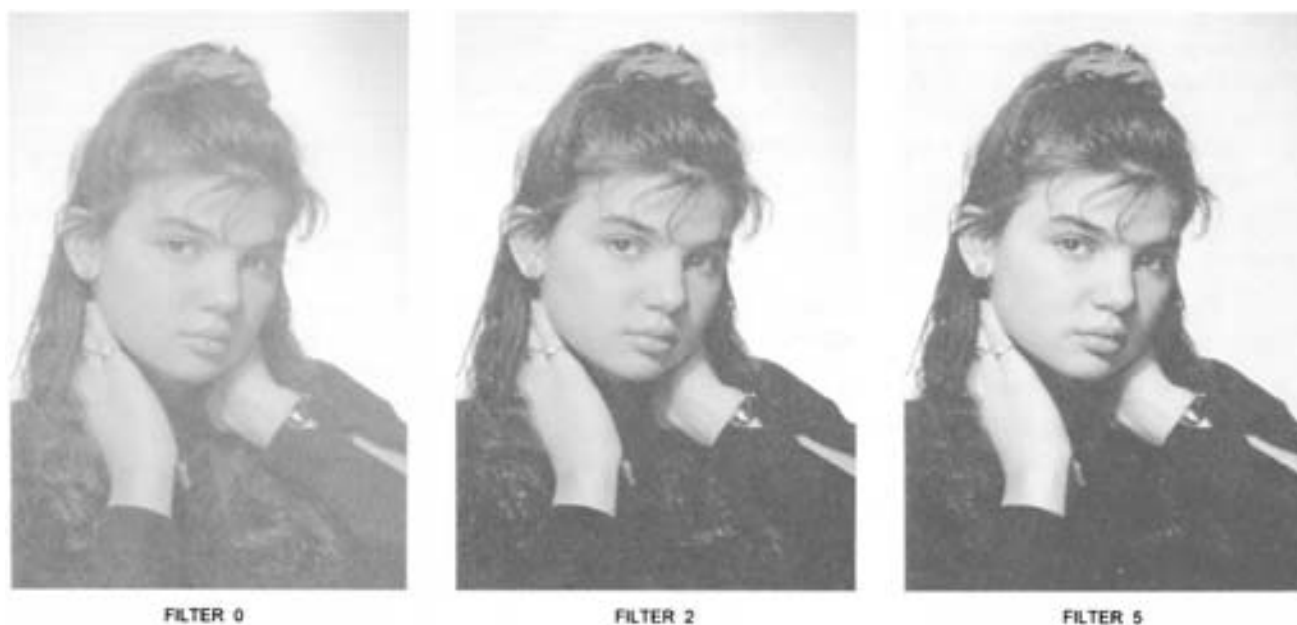
Filter Number	Use
00	Normal prints from very contrasty negatives. Produces very flat prints from normal or low-contrast negatives.
2	Normal prints from normal negatives, flat prints from low-contrast negatives, and contrasty prints from contrasty negatives.
4	Normal prints from low-contrast negatives, and contrasty prints from normal or high-contrast negatives.
5	Normal prints from very low-contrast negatives, and very contrasty prints from normal negatives.

of short paper development times is usually a print that is not fully developed, and the print has poor tone quality and a “muddy” appearance.

Variable contrast printing filters are the only practical way of altering print contrast with variable contrast papers. Variable contrast papers have orthochromatic sensitivity. The blue light-sensitive part of the emulsion controls high contrast, and the green light-sensitive part controls low contrast. By using the proper variable contrast filter between the light source and the paper, you can control the contrast. Variable contrast filters range from yellow (low contrast) through deep magenta (high contrast).

When making test strips to determine correct exposure, you also need to determine the contrast. You do this by examining the shadow area of the test strip that has the correct highlight exposure. When the shadow area of this test is too light, the test does not have enough contrast. When the test does not have enough contrast, a higher number filter is required. When the shadow area is too dark, the test has too much contrast and a lower number filter is required.

Table 11-2 is based on using Ilford Multigrade filters and Ilford Multigrade papers. Ilford Multigrade filters are available in the following 12 grades: 00, 0,



PHC Carl Hinkle
302.308

Figure 11-10.—Comparison of a number 0, 2, and 5 contrast printing filter.

1/2, 1, 1 1/2, 2, 2 1/2, 3, 3 1/2, 4, 4 1/2, and 5. Use this table as a guide to help you determine the correct filter. The principles, also, apply to the use of filters not shown in the table, such as 0, 1, 1 1/2, 2 1/2, 3, 3 1/2, or 4 1/2.

Figure 11-10 shows the difference in contrast obtained from one negative using different contrast printing filters.

When using variable contrast paper and filters, you must remember the following:

- The filters should be clean and in good condition (not scratched, etc.). Like all filters, they fade and must be replaced.
- The density of filters changes with the different numbers. Filter numbers 0 - 3 1/2 require a one f/stop increase of exposure compared to the exposure when no filter is used. Filter numbers 4 - 5 require a one f/stop increase compared to the exposure when a 1 - 3 1/2 filter is used, or a two f/stop increase of exposure compared to the exposure when no filter is used. For example, when you make a test print with an exposure of f/8 at 10 seconds with a No. 3 contrast printing filter, and then make another test print with a No. 4 contrast printing filter, your new exposure will be f/5.6 at 10 seconds.
- It is possible to control local contrast by changing filters. For example, one possibility is for you to print an overall exposure with a No. 2 filter while holding

back or dodging the sky and then burning in the sky with a No. 1 filter. When printing with more than one filter, you should work from a full test print to determine the best approach.

- Study the manufacturer's directions so you can use their filter and paper combination to best advantage.

Many of us are guilty of throwing away the manufacturer's directions that come with photographic materials. By maintaining them in a reference book, you have a tremendous source of information available that can save time and materials.

Having determined the correct exposure and contrast, you are now ready to produce the production prints. Until you become proficient in printing, make test prints for each negative you print.

By adjusting the lens f/stop, you may use longer or shorter exposure times than the test exposure time determined previously, providing they do not become excessive in either direction. Very short exposures are not practical. Very long exposures subject the negative to excessive heat from the printing lamp and also waste time. Five seconds is the minimum amount of exposure time that you should use. Twenty seconds is about the longest exposure time required for normal negatives. A standard procedure is to change the exposure by varying the f/stop of the lens to bring the exposure time within practical limits.

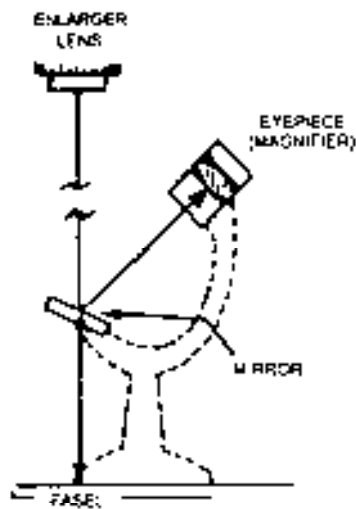


Figure 11-11.—Grain focuser.

GRAIN FOCUSER

Focusing the negative image on the enlarging paper can be difficult when the negatives are dense or have no sharply defined lines that you can see in the projected image.

Focusing is easier and more consistent when you use a magnifier or grain focuser. A grain focuser magnifies the negative grain structure by 10X to 25X. This magnification allows you to focus the actual grain structure of the image. A grain focuser provides you with the sharpest focus you can get from a given negative.

The projected image of the negative is reflected by the mirror of the grain focuser to the eyepiece. The distance from the mirror to the eyepiece is equal to the distance from the mirror to the easel (fig. 11-11); therefore, when you see a sharp image of the grain structure in the magnifier, the image projected on the easel is equally sharp. The area of the negative visible in the magnifier is extremely small. You are not actually looking at details of the image but at the grain structure of the negative that actually produces the image.

To use the grain focuser, you should enlarge and compose the picture normally on an easel. Place the grain focuser on the easel with a sheet of focusing paper in it, so a central portion of the projected image reflects from the mirror into the eyepiece of the grain focuser. Examine the grain structure through the eyepiece and adjust the fine focus until the grain structure is in absolutely sharp focus.

CREATIVE CONTROLS IN PRINTING

Because of the many ways you can control the final appearance of the photograph, enlarging is a creative procedure. You can use printing exposure to make your prints lighter or darker, and the contrast can be altered by your choice of printing filters. You, also, have other creative controls available, such as cropping (composition), dodging, printing, or burning in, vignetting, diffusing, correcting image distortion, and so on.

You should devote as much attention and care to printing as to making the original negative; otherwise, you do an injustice to your skill and reputation as a photographer.

COMPOSITION AND CROPPING

Printing only a part of the entire image recorded on a negative is called “cropping.” Cropping is the procedure in printing used to improve the composition of the photograph. Most photographs are intended to present an idea or provide the viewer with some type of information. The better the composition of the finished picture, the better it communicates the intended message.

Photographic composition should be controlled or established with the camera when the picture is taken; however, the majority of photographs can be improved during the printing process by cropping. You can use cropping to eliminate distracting or unwanted scene elements, to straighten a tilted horizon, to alter the center of interest, or to strengthen leading lines.

Since personal opinions differ, there are no hard-and-fast rules for cropping; however, the following are rules of thumb that may help you produce pictures that are pleasing to most people:

- Crop out any elements at the edges of the picture area that may draw attention from the intended center of interest.
- The center of interest should not normally be located in the physical center of the print. The center of interest should be somewhat to the left or right and a little below or above the physical center of the picture. The exact location for the center of interest depends on the subject and the format of the print.
- Horizontal, vertical, and diagonal lines should not divide the photograph into equal parts. The horizon in a photograph should be absolutely horizontal. The vertical lines of buildings, with one exception, should



303.57

Figure 11-12.—Cropping arms can be used to determine cropping.

be vertical. The one exception is the vertical lines of buildings that naturally appear to converge. In this case, the central vertical line, either real or imaginary, should be rendered as vertical.

- People or animals shown in profile or near profile within a photograph should appear to be looking into the picture, not out of it; for example, the subject should have more picture area in front than behind.

- Unless you are producing micro- or macro-photography, the printed images should not normally be larger than the actual size of the subject.

- The image area of a picture should appear to have a solid support. This effect can sometimes be achieved by printing the lower part of the picture darker than the upper part

- In a landscape or seascape picture, print the foreground somewhat darker than the middle distance, and print the middle distance darker than the far distance. Then gradually increase the density of the sky from the horizon upward. This creates a feeling or illusion of depth.

A contact print (proof print) of the full negative to be printed is helpful in determining the most effective cropping for the picture.

Have available a set of cropping arms such as the ones shown in figure 11-12. Cropping arms can be cut from pieces of cardboard. Be sure the arms have true right angles. You should use the following procedure to crop or mark the proof print:



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Figure 11-13.—Marking the print to be cropped.

1. Place the cropping arms over the proof print and move them about until you have the desired cropping, composition, and picture proportion or format.

2. With the cropping arms held in place on the proof, mark the print with a grease pencil (or other suitable marker) to outline the desired area or composition of the picture (fig. 11-13). You should use the marked proof print as a guide for setting up the enlarger and easel.

3. With the negative in the enlarger and the printing lamp turned on, adjust the enlarger for the desired image size and cropping. Use the proof print as a visual guide.

4. Adjust the adjustable masks on the easel to the correct format and desired cropping. The adjustable masking device on the easel should be adjusted so at least a 1/4-inch white border is left on all four sides of the finished print. Excess border can be cut off the print after it is processed.

There may be occasions when you may want to produce prints with borders larger than 1/4 inch or with borders of various widths, such as 1/2 inch at the top and sides and 1 1/2 inches at the bottom, or you may want prints without borders or with black borders. To make a print without borders, cut the borders off after the print is processed or use a borderless type of easel.

5. Adjust the picture composition by moving the easel, by changing the border masks, or by changing the picture enlargement or any combination of these until

the projected image is the same as the cropped area in the proof print.

LOCAL PRINT CONTROL

No matter how good your camera work, somewhere in the negative there will probably be areas that do not print correctly. A “straight” enlargement from a negative is seldom the best possible print. When everything has been done to match the negative with the proper printing filter and still the print is unsatisfactory, you may resort to manipulating the light while exposing the paper. This manipulation may be dodging to prevent part of the image from getting too dark or it may be burning-in to produce detail from a part of the negative that is too dense. Local print control can be used to compensate for uneven lighting of the scene photographed or to provide more prominence to a selected part of the picture.

Dodging

As discussed before in contact printing, you may often find it necessary to dodge or hold back some parts of images to produce the best print. When projection printing, hold the dodging material in the beam of light, so its location and coverage can be seen and controlled during the printing exposure. The dodging tool is placed between the lens and the printing paper so it prevents light from falling on the area being dodged. The shadow area the dodging tool creates may be small or large. The coverage depends on the size of the tool and the distance from the printing paper where the dodging tool is held. Dodging is generally necessary for only part of the total exposure time. The tool being used must be moved constantly to prevent a sharp line between the area being dodged and other parts of the image.

Accurate dodging may be done with your hands or various shaped tools. Your hands, when used as dodging tools, can cast a variety of different sizes and shapes of shadows to hold back unwanted light from the print. Some photographers prefer to use dodging tools, such as a stiff wire with various sizes and shapes of black cardboard or crumpled cellophane attached (fig. 11-14). Another dodging tool is a loop of a thin, stiff wire bent to the desired size and shape. The loop is then covered with black masking tape. Even a plain piece of cardboard can make an effective dodging tool.

Because light is held back from an area during dodging, the dodged area receives less exposure than the surrounding image area. Thus the dodged area of the



Figure 11-14.—Dodging tool.

processed print is lighter than it would have been had dodging not been used.

Dodging can be used for creative and corrective effects. It is used to hold back shadow areas, thereby preventing these areas from printing too dark and losing detail; for example, part of a person’s face may be too much in shadow because of the hat he or she is wearing, while the rest of the face is brightly lighted. You can dodge or hold back some of the light from the shadow area of the face image; this keeps the shadow from printing dark, and a more pleasing and detailed photograph is produced.

The amount of time you should dodge can vary widely, depending on the subject, the negative, and the overall exposure time. Even an experienced printer may have to produce several test prints to determine the correct amount of dodging.

Remember, to prevent any distinct outline of the dodging tool from reproducing in the print, you must keep the dodging tool in constant motion during the exposure. Use a circular, sideways, or shaking movements to accomplish this.

Burning-in

Burning-in makes an area within a print darker than it would be otherwise. A burning-in tool is usually a piece of cardboard with a hole in the center that is



PH1 Anthony Contos
303.63.2

Figure 11-15.—Vignetted head-and-shoulders portrait.

smaller but approximately the same shape as the area to be burned in. Your hands can be shaped to form a hole to allow light to pass.

A burning-in tool is positioned between the enlarger lens and the printing paper, so light passes through the hole and exposes only that part of the paper you want to

print darker. The rest of the image is blocked by either the tool or your hand.

For burning in, the usual procedure is to give the printing paper the overall required exposure during which time any required dodging is performed. Then re-expose the area to be darkened.



PHC Carl Hinkle
302.309

Figure 11-16.—Head-and-shoulders portrait using diffusing techniques.

Some areas of a negative that may require burning in are the dense areas that would otherwise reproduce as pure white with little or no detail or very light gray in the print; for example, a bright sky, a white uniform, a white cake, or highlights on a face.

Like dodging, to prevent an outline of the tool from reproducing, you should keep the tool in constant motion during the burning-in exposure.

Vignetting

In printing, vignetting is a technique that causes the image to fade gradually into the background toward the corners of the print. A vignette effect is produced by projecting the desired negative image area through a large hole cut in a piece of cardboard or by dodging the central image area during part of the exposure time. When the background is to be printed light, the entire exposure should be made through the vignetting card. When the edges of the hole are serrated, the outline of the vignette will be soft and diffused. In most cases, a soft, diffused vignette produces the most pleasing result.

Head-and-shoulders portraits are usually the most suitable for vignetting, although vignetting may be applied to other subjects (fig. 11-15). A photograph with a light background provides the most pleasing vignette results. For a head-and-shoulders portrait, the vignetting

card should have an egg-shaped hole cut in it. The subject in a vignette should be a little smaller than it is in a straight nonvignetted print. Leave plenty of space around the image. Balance the head-and-shoulders image on the paper by leaving more blank paper below the image than above it. The blank paper at the sides should be about equal, but less than at the top. As with dodging and burning in, the vignetting card must be kept moving during the exposure.

Diffusing

Photographs can be diffused so sharp lines of the image are softened, subdued, or blurred slightly in the reproduction. Diffusion can be used to produce a hazy effect, such as the effect seen on a warm lake in early morning. In printing portrait negatives, diffusion can be used to subdue the reproduction of facial blemishes or wrinkles. The effects of harsh portrait lighting or retouching also may be softened with diffusion (fig. 11-16).

The best diffused enlargements are made using a glass diffusing disk placed under the lens of the enlarger. Other suitable diffusing materials are transparent cellophane, either smooth or wrinkled, or a piece of panty hose, or similar fabric. Dark gray or black is preferable.

The amount of diffusing with a given material is controlled by the distance of the material from the lens of the enlarger and the density of the diffusing material. Diffusing tends to lower image contrast; therefore, you may need to use a higher contrast printing filter than normally required for a given negative. The exposure through the diffusing material should be about one third of the total required exposure time.

To use dodging, burning-in, vignetting, and diffusing effectively, you should make one full-straight (uncorrected) print, using the basic exposure determined with your test strips. Study this print and determine the location(s) you are going to dodge, burn in, and so forth. The application of these techniques may appear time-consuming, but you will make professional-quality prints that are rich in detail and mood.

MINIMIZING GRAININESS

As you know, most black-and-white photographic images on film emulsions are made of fine grains of silver. Because of this silver grain structure, enlargements, especially large ones, may appear “grainy.” The graininess of a print is a direct result of the graininess of the negative and the degree of enlargement. The graininess of a print, however, may be modified to a limited extent during the printing stage by the following techniques:

- The diffusion enlarger should be used where negative graininess is serious and objectionable in the print.
- The appearance of graininess in the print can be reduced by using a rough, surface paper instead of a smooth, glossy paper.
- A diffuser used between the enlarger lens and the printing paper helps subdue the appearance of grain. Crumpled cellophane, fine mesh screen, or a piece of nylon stocking can be used as a diffuser.
- The enlarger can be set to project an image that is slightly out of focus.

The permissible graininess in a print depends very much on the viewing conditions. For a large display print to be viewed from a relatively great distance, more graininess can be tolerated as compared to a smaller print held in a person's hand for viewing.

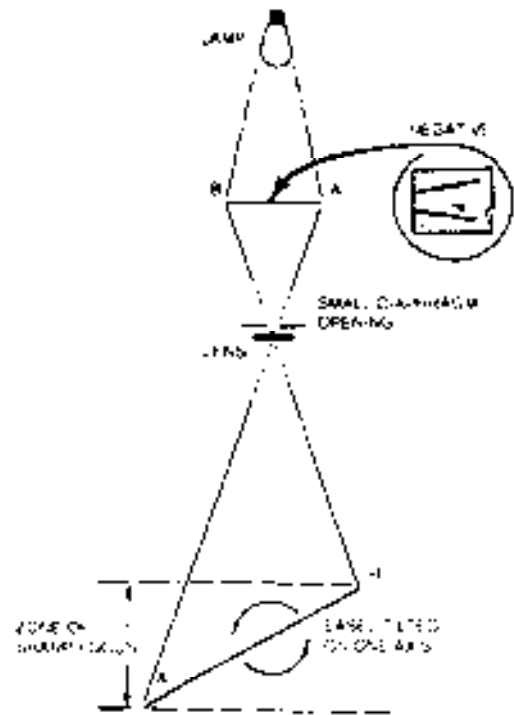


Figure 11-17.—Distortion corrected by tilting the easel.

DISTORTION CONTROL

When you tilt the camera upward to make a picture of a tall building, the vertical lines converge and the building walls seem to be at the point of collapsing. A view camera is equipped with movements that allow the film to be parallel, or nearly so, with the subject, in spite of the viewpoint; however, most of the negatives you print probably are not made with a view camera. Many negatives show an undesirable, noticeable convergence of lines. Changes in these images can be made by tilting the head on some enlargers or by tilting the easel and paper to correct image distortion (fig. 11-17).

Most enlargers have an easel separate from the enlarger. Because the easel is separate, it can be tilted by blocking it up on one end. A small diaphragm opening (high f/stop) must be used to increase the depth of focus to include both the part of the easel nearest the lens and the part of the easel farthest from the lens. Within the limits of what you can keep in focus, you can correct some or all of the distortion. With some enlargers, you can tilt the negative carrier by propping up one side with one or more coins.

One big disadvantage of tilting the easel is that an extremely small diaphragm opening must be used for depth of sharp focus. The use of a small diaphragm opening makes focusing and composition difficult. This makes it necessary to use long exposure times.

PROCESSING DEFECTS

The prints you produce will not be perfect every time. Table 11-3 shows some of the most common defects found in black-and-white prints. Use this table to identify and correct print defects.

Table 11-1-Print Defects

Defect	Appearance	Cause	Prevention
Abrasion marks or streaks.	Surface of paper abraded or scratched; results in fine dark lines on the surface of the print, especially with glossy paper.	Friction or rubbing on the surface of the paper.	Store paper boxes on their edges; handle carefully; make sure that processing solutions are free from grit or undissolved particles. Inspect and clean rollers of processing machine.
Bad definition in parts of print.	Parts of print poorly defined, blurred, as if out of focus, though negative is sharp.	Buckling of paper in the contact printer, thereby blurring these parts.	Check contact pad in printer. Pressure springs should be firm and strong.
Bad definition over entire print.	Completely blurred print from sharp negative.	In contact prints, because of printing from the wrong side of the negative. In enlargements, careless focusing or, more often, vibration of the enlarger, especially at high magnification.	In contact printing, the paper emulsion must always be in contact with the emulsion of the negative. Enlargers should be braced firmly and protected from vibration
Round white (light) spots on print.	Round white or light spots in picture area.	Air bells prevent developer from working on parts of paper.	Proper agitation of print in developer.
Round dark spots on prints.	Round or circular-shaped dark spots.	Air bells on surface of print in fixing bath allows developer to continue to work	Use a stop bath between developer and fixer. Agitate thoroughly in fixing bath.
Round discolored spots appearing some time after drying.	Round discolored spots in picture area of print.	Air bells in washing prevent removal of hypo in these areas	Thorough washing with constant agitation.
Small, well-defined brown spots.	Brown spots on front or back of print.	Particles of rust in wash water from rusty wash tanks or water pipes and/or particles of chemical dust.	Where quantities of rust are present, use a water filter in the line.

Table 11-3.–Print Defects–Continued

Defect	Appearance	Cause	Prevention
Tone of image unsatisfactory.	Greenish or muddy tone.	Overexposed then underdeveloped	Correctly exposed and developed.
Excessive contrast.	Contrasty print.	Wrong printing filter used.	Use a lower number filter.
Lacks contrast.	Flat print.	Wrong printing filter used.	Use a higher number filter
Fading	Fading or tarnishing.	Incomplecte fixing and/or washing.	Give adequate fixation and washing

CHAPTER 12

COLOR PRINTING

The mechanics of color printing are similar to black-and-white printing. Once you have mastered the techniques of black-and-white printing, you will have a solid foundation to build your knowledge and skills in color printing. The most difficult task in color printing is distinguishing between various and sometimes subtle colors and selecting filters to produce a color balanced print. That is not as difficult as it may sound. Through time and practice, you will make excellent color prints; however, before color printing is discussed, the principles of color photography and how they apply to color printing will be reviewed.

PRINCIPLES OF COLOR PHOTOGRAPHY

Most people see in color and expect their photographs to be in color. Because of customer demands and the cost benefits involved, color photography has nearly replaced black-and-white photography in Navy imaging facilities. Few amateur photographers understand the complexity of color reproduction in color photography. Most of these amateurs take their unprocessed film to a drug store or a 1-hour photo finisher. As a Navy Photographer's Mate, you are a professional. To produce professional quality color photographs, you must have a basic understanding of the color process.

COLOR IS LIGHT

The color you see is simply light. Where there is no light, there is no color. When you "see" a colored object, what you are actually seeing is the light reflected or emitted from that object; therefore, the light alone is what you see and not the actual object.

The color of light people are most familiar with is white. Actually, white light is made up of all the colors, although they are impossible to see directly. When you see white light reflected from a sheet of white paper, you are actually seeing an equal mixture of red, green, and blue light being reflected in equal amounts. You must realize and understand this fact before you print color.

Usually white is thought of as no color; however, it is more accurate to think of it as all colors. When one of the colors is absent, the color is not white light, but a different color-green, for example. When magenta (a bluish red color) is absent, the resulting color is green. When cyan (a greenish blue color) is absent, the color is red, and so forth.

As you read this chapter and when you color print, you may find it helpful to think of a color as white with something missing; that is,

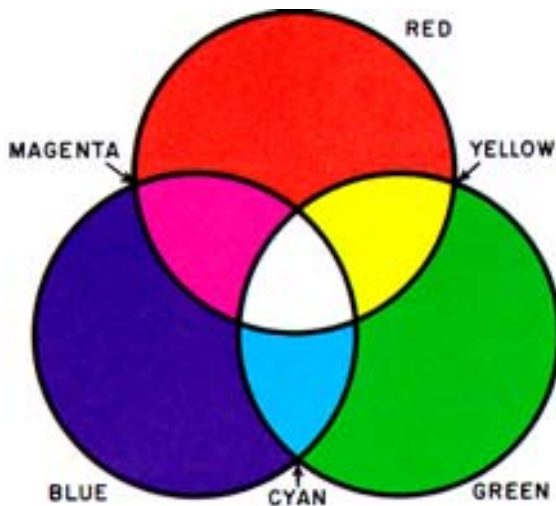
- blue is minus yellow;
- ◆ green is minus magenta;
- ◆ red is minus cyan;
- ◆ yellow is minus blue;
- ◆ magenta is minus green; and
- ◆ cyan is minus red.

Also keep in mind that

- ◆ all color is light; and
- ◆ white is all colors.

LIGHT PRIMARIES

White light is a mixture of all the colors of light; however, only three primary colors are actually needed to make white light. These three primary colors are red, green, and blue. Not only do these three light primaries produce white light, but they produce any and all other colors; for example, imagine a blue, a green, and a red spotlight shining on a white screen so the spotlight circles partly overlap. There are three places where two of the light primaries overlap and one place where all three light primaries overlap. In the areas where two primaries overlap, a distinctly new color is created



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Figure 12-1.—Mixed beams of the three primary colors of light.

(fig. 12-1). When you overlap red and green, yellow is created; green and blue, cyan is created; blue and red, magenta is created. In the area where all three light primaries overlap, you, of course, have white.

In the actual production of color prints, you should remember that

- yellow is greenish red;
- cyan is greenish blue; and
- ◆ magenta is bluish red.

The above information should help you remember the colors of light that make up yellow, cyan, and magenta, which are the light secondaries. Light secondaries are the colors produced when two light primaries are mixed.

Additive Primaries

Now that you have an understanding of light primaries, they will be called the additive primaries. The name *additive primaries* indicates that certain colors of light can be added together to create distinctly new colors.

As explained in chapter 2, color films and papers have three separate emulsion layers that are sensitive to red, green, and blue light. Because the emulsions are sensitive to the additive primaries, they can record all colors. In the three emulsion layers, three separate, superimposed images are formed and when viewed together, they give a full range of colors.

The color formation, however, is not direct; for example, in a color print, a cyan image is formed in the top or red sensitive emulsion layer, a magenta image in the middle or green sensitive layer, and a yellow image in the bottom or blue sensitive layer. These three colors or dyes—cyan, magenta, and yellow—are what produce the colors we see when we view a color print. These colors—cyan, magenta, and yellow—are called the **subtractive primaries**.

Subtractive Primaries

Keep in mind that the **additive primaries**—red, green, and blue—are the basic starting colors from which all other colors of light can be created. When you are working with light, the additive primaries produce all the other colors; however, they will not do this as dyes or pigments; for example, blue and green dyes cannot be mixed to produce cyan, though blue and green light can.

For dyes and pigments, another set of primaries are needed. This other set of primaries happens to be yellow, cyan, and magenta. Dye couplers are what form the colors within a color print (or film). The dye primaries—cyan, magenta, and yellow—can be used separately or superimposed (mixed), one image over the other, to produce other colors; that is,

- ◆ cyan + magenta = blue;
- ◆ magenta + yellow = red; and
- ◆ yellow + cyan = green.

The colorant primaries—cyan, magenta, and yellow—are called the subtractive primaries because they subtract certain colors from the light falling on them.

Anything that is colored is subtracting something from white light; that is, an object appears a certain color because it is subtracting or absorbing a certain other color or colors from the light falling upon it; for example, an object that appears

- red subtracts green and blue (cyan) light;
- ◆ green subtracts red and blue (magenta) light;
- blue subtracts green and red (yellow) light;
- ◆ magenta subtracts green light;
- cyan subtracts red light; and
- yellow subtracts blue light.

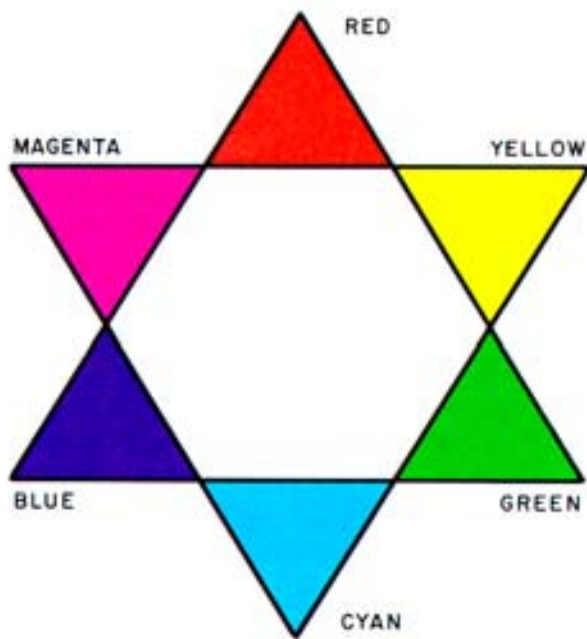


Figure 12-2.—Color star.

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This whole concept of color by subtraction may seem confusing at first, but if you accept this concept, it will suddenly become very clear. Color printing is built around color by subtraction.

COLOR STAR

To help understand color theory, draw a color star and use it through the color process (fig. 12-2). With a color star, both additive and subtractive color effects can be illustrated.

The color star shows how colors can be mixed. Any two primaries (colors) on opposing points of a given triangle, when mixed, will produce the color between them; for example,

- green and red = yellow;
- yellow and cyan = green; and
- green and blue = cyan.

Just as important, the color star shows the colors that will neutralize each other. These colors are called complementary colors and are located across from each other; that is

- yellow is complementary to blue;
- magenta is complementary to green; and
- cyan is complementary to red.

Thus yellow neutralizes blue, blue neutralizes yellow, red neutralizes cyan, cyan neutralizes red, and so forth.

When colors are neutralized, the results are grays or blacks. That is called neutral density. The neutral density may be either full or partial, depending on the relative strengths and amounts of the neutralizing colors; for example, equal amounts of blue and yellow produce neutral density. A weak blue and a strong yellow yields a grayish yellow.

The information on the color star can be applied directly to color printing and color filtration. The filters used in color printing subtract colors from the light source of the enlarger before it reaches the color printing paper; for example, to subtract green from the light, you use a magenta filter, or to subtract blue, you use a yellow filter or vice versa.

In color printing, filters are always used to subtract a particular color. You can determine which filter subtracts a given color from the light source of the enlarger by finding its opposite or complementary color on the color star. For example, you want to subtract green from the light. First, find green on the color star. Next, locate the complementary color of green by looking across from it. You have located the color, magenta; therefore, to remove green from the light source, you must add magenta filtration in the enlarger.

The basic overview of the principles of color photography applies directly to color printing. If you need additional review of light and color principles, refer to chapter 1 of this training manual. The remainder of this chapter should help you get a better understanding of color printing and provide the information you need to make good, professional quality color prints.

COLOR ENLARGERS AND PRINTERS

Other than the basic exposure factors of intensity and time, there are other factors to consider in printing equipment. Some of these considerations are as follows:

- Quality of the lens
- Color temperature of the light source used for printing
- Corrective filters
- Accuracy of the enlarger timer
- Stability of the power (voltage) supply

- Ease of operation in total darkness

A good quality enlarger is required to produce high-quality color prints. Color enlargers used in Navy imaging facilities are diffusion type of enlargers. Like all image-forming equipment, the lens is an integral part of the enlarging system. The lens used in a color enlarger must be free of chromatic aberration; that is, it must be a color-corrected lens.

COLOR TEMPERATURE

The color temperature of light used to expose the color material must match the spectral sensitivity of the color material. This is true when making the original camera exposure, and it is also true when you are printing color materials. In color printing equipment, color temperature is usually regulated by adding filters to balance the light source and by regulating the voltage source supplying the lamp.

Corrective Filters

In color printing, three emulsion layers in the printing material must be correctly exposed from the three color images in the negative. The exposure of these three layers is manipulated by both exposure time and the color quality of the exposing light reaching the paper. The color or quality of light is altered by placing color filters in the light beam of the enlarger. You can use color printing (CP), color compensating (CC), or dichroic filters. CP and dichroic filters are placed between the light source and the negative. Generally, dichroic filters have replaced CP filters. Dichroic filters more accurately control the light, and unlike gelatin filters, do not fade over time. CC filters are placed between the lens and the light-sensitive paper.

The filters that control the exposing light are called the filter pack. The basic filter pack differs among each characteristic of color negative film; that is, film size, manufacturer, film type, and film speed. For example, the basic filter pack for 35mm Kodak Vericolor III differs from the basic filter pack of 120 Kodak Vericolor III. The basic filter pack for 35mm Scotchcolor differs from the basic filter pack of 35mm Fuji color. The basic filter pack for Kodacolor Gold differs from Kodak Vericolor III. The basic filter pack for Kodacolor 100 differs from the basic filter pack of Kodacolor 400.

In addition to CP, CC, and dichroic filters, a CP2B or equivalent filter is usually built into the enlarger to absorb ultraviolet radiation emitted by the light source.

Voltage Regulation

Fluctuations in line voltage are more common than most people realize. Power fluctuations affect both the intensity and color quality of a light source. As little as a 5-volt variation in the normal operating range (100-125volts) can change the output of a lamp by about 15 percent. This change in voltage results in a change in the color quality of the light source. This variation is about the equivalent of a CC10 filter.

To prevent voltage fluctuations, you must connect the enlarger to a voltage regulator. Most voltage regulators provide a constant voltage between 95 to 120 volts.

Two main types of color enlargers are in common use by the Navy. The two color enlargers differ in the way they control the exposing light. They are the subtractive and additive printers.

SUBTRACTIVE PRINTERS

The subtractive type of color enlarger uses a dial-in dichroic filtration system. This type of color enlarger has three filtration controls that move yellow, cyan, and magenta filters into the path of the exposing light. Segments of the dichroic filters are moved in and out of the exposing light beam on calibrated cams. This type of filtration system provides accurate and repeatable filter pack combinations.

Most color enlargers use a tungsten-halogen light source. These light sources produce a great amount of heat. When a tungsten-halogen light source is used, the color printer must have forced-air cooling fans in addition to the heat-absorbing glass. An ultraviolet absorber, such as a Kodak Wratten Filter No. 2B (CP2B), must always be included in the light beam, preferably above the negative. The most common type of subtractive printer used in the Navy is the Chromega D dichroic enlarger.

NOTE: Never touch a tungsten-halogen bulb. Handle it only by the edges or reflector cone. Oil from your fingers can heat up and create a hot spot on the light bulb, causing it to burn out. If you touch the bulb, clean it with a soft cloth and isopropyl alcohol. Allow the bulb to dry thoroughly before energizing.

ADDITIVE PRINTERS

The additive type of color enlarger uses the additive or primary colors of light (red, green, and blue) to expose color printing paper. This type of enlarger uses



PH2 Myer III
302.260

Figure 12-3.—Bessler Model 45A color enlarger.

filters either above the negative (CP filters) or below the lens (CC filters) to control the color quality of the exposing light.

Bessler color enlargers (fig. 12-3) are used in many Navy imaging facilities. The Bessler Model 45A uses pulsed-xenon tubes to expose the color printing paper. The xenon tubes are mounted at the top of the head of the enlarger above red, green, and blue filters. The amount of red, green, and blue light is controlled by the number of flashes through each color filter. By adjusting the number or length of time that the filtered-light sources flash, you can correct the color balance of the print. The color head of the enlarger is normally programmed to a color analyzer that is used to provide acceptable color prints.

PRINTING COLOR NEGATIVES

For many years color printing was difficult to achieve; however, through technical advances in

light-sensitive materials, chemicals, and printing equipment, color printing is as flexible and practical as black-and-white printing. The primary interest to you, as a Navy Photographer's Mate, is to produce color prints with an acceptable color reproduction of the original scene.

Good color prints are not difficult to make. Anyone who has normal color vision and can apply the principles of color theory can quickly learn to make good color prints.

NEGATIVE TO POSITIVE PROCESS

Like all negative materials, the images recorded on color negative films are completely reversed from the original scene as follows:

- Darker hues are recorded as lighter hues;
- Red is recorded as cyan;
- Green is recorded as magenta; and
- Blue is recorded as yellow.

To record the image as it appeared in the original scene, you must print the color negative onto a second tripack material—the color printing paper. If you need to refresh your memory on the characteristics of color printing paper, refer to chapter 2.

The theory of color printing is simple when you think through the stages of color reproduction. Since the colors reproduced in the color negative are complementary to the original subject colors, a red car is cyan in the negative. Cyan is a combination of blue and green; therefore, the two emulsion layers in the paper that are sensitive to blue and green are affected when the negative is printed. Then during print processing, yellow dye forms in the exposed portion of the blue sensitive layer of the paper, and magenta dye forms in the exposed portion of the green sensitive layer of the paper. Yellow and magenta in combination produce red; therefore, the red car is reproduced in its original color. All the other colors form in the same way.

CUSTOM COLOR PRINTING

In black-and-white printing, the controlling variables are primarily density and contrast. In color printing, the variables include density and the color of individual objects in the scene as well as the overall color balance of the print. The mood of a color print can be changed by altering the color balance. A winter landscape may be printed on the blue side to intensify

the feeling of coldness. Portraits, on the other hand, are usually warm with glowing flesh tones, reflecting health and happiness. Because of tightly controlled and standardized processing of color negatives, contrast is not a major variable in color printing. There are several color papers manufactured that provide higher than normal contrast. Generally, these high contrast papers are used for illustrative purposes and not normal pictorial photography. Consult the *Photo-Lab-Index* for more information on color papers.

It is unlikely that you will produce an acceptable color print on your first attempt. When you are considering the density and color balance of a test print, think in terms of the three dye layers and their individual exposures. When the paper is exposed through the color negative, the cyan, magenta, and yellow dye images control the amounts of red, green, and blue light that reach the emulsion layers of the paper. Increasing the exposure of the emulsion layers of the paper increases the dye density of that layer and vice versa.

It is helpful to think how the color quality of light affects the paper. Remember that the color negative and the color paper produce negative images. The more red light the paper receives, the more cyan dye produced. The more green light the paper receives, the more magenta dye is produced in the green sensitive layer. The more blue light the paper receives, the more yellow dyes created in the paper.

Color paper is balanced in manufacturing so a combination of magenta and yellow filters in the printer light source color balances a print from properly exposed negatives. Because of the variations in the color temperature of light sources (both picture taking and printer), processing, and light-sensitive emulsions, the required combination of filters can change from negative to negative. You must evaluate the test print in terms of density and color balance and determine which filter combination and exposure time accurately represents the original scene.

MAKING COLOR PRINTS

The procedures for setting up the enlarger and composing and cropping the image in color printing are basically the same as black-and-white printing. The major difference is that custom color printing on an enlarger must be carried out in complete darkness.

THE COLOR NEGATIVE

When making your first test print, you should use a negative that is properly exposed; it should also contain

some neutral areas (ideally, a gray card). The subject matter of the negative should be typical of the printing job or of those negatives that will be printed in the future.

The negative must be free from dust and placed in the enlarger, with the emulsion side down toward the lens (base side up). The base side is facing you when you can read the manufacturer's lettering on the edges of the film. You must be sure that no stray light escapes from around the edges of the negative. Masks of black paper or black masking tape in the negative carrier prevent stray light from fogging the paper.

ENLARGER SETUP

Setting up the enlarger and cropping the image on the easel is basically the same in color printing as in black and white; however, when possible, remove the filter pack and compose and focus under white light. By removing the filter pack, you can project a brighter image on the easel, making composing and focusing easier.

Since enlarging equipment varies considerably, it is difficult to specify exact exposure times and filtration for a properly exposed print. You should start with a basic filter pack that has already been established in your imaging facility, or consult the data sheet packaged with the color printing paper or use the *Photo-Lab-Index* as a reference to arrive at a starting exposure time and filter pack

JUDGING TEST PRINTS

When making color prints, you must always obtain the proper print density before you evaluate the color balance. Several ways are used to judge test prints. Before test prints are viewed, however, there are some lighting factors to be considered.

Viewing Conditions

The color quality of the viewing light source strongly influences the apparent color balance of the print. Ideally, the light in the evaluation area should be the same color quality and intensity as the light under which the final print is to be viewed. From a practical standpoint, some average conditions are used.

Several factors are important in specifying light sources for viewing color prints. These are intensity, color temperature, and color rendering index. The intensity of the light source influences the amount of detail that can be seen in a print. For good viewing, a light source should provide an illuminance of 1400 lux

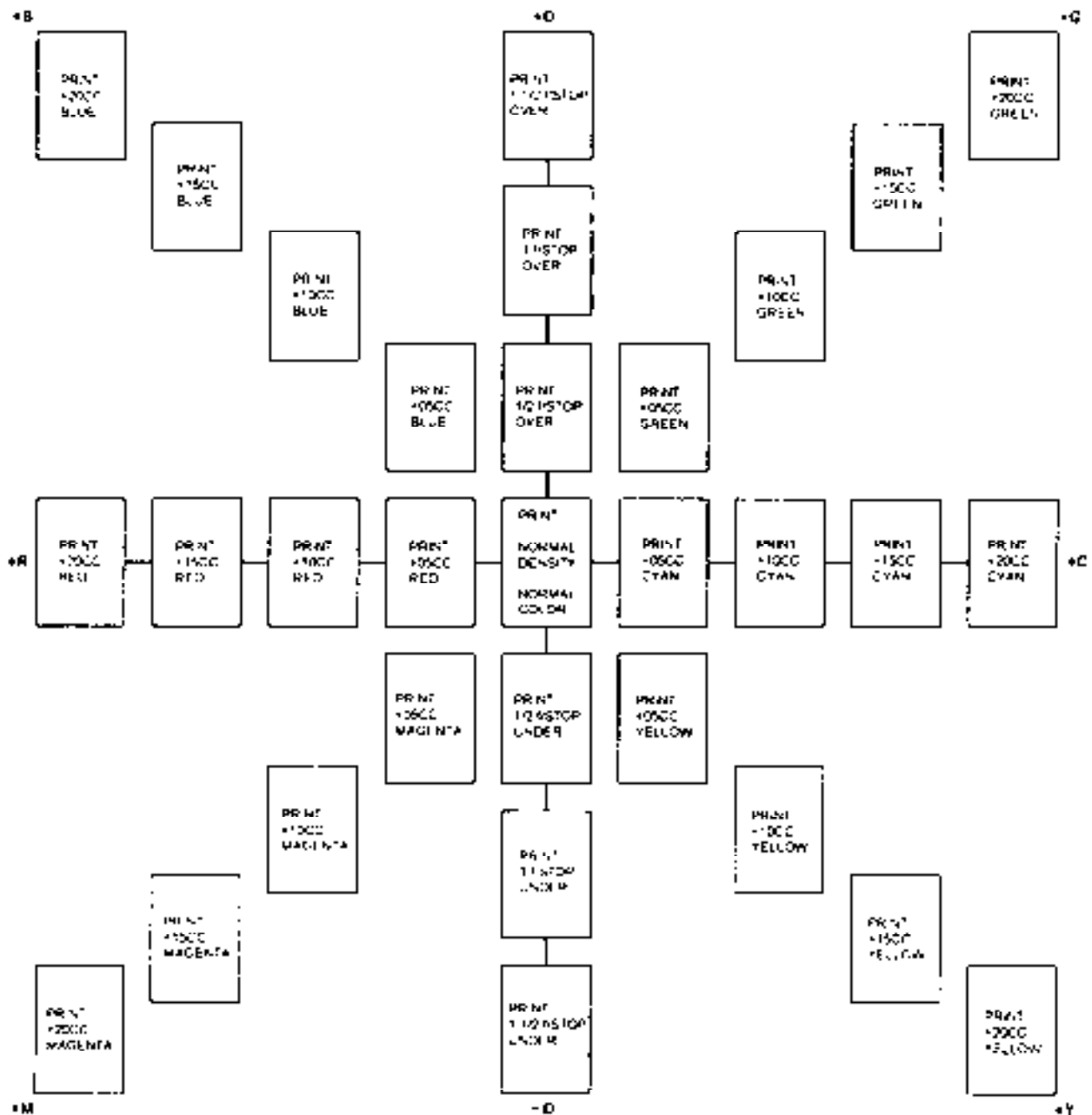


Figure 12-4.—Ring around.

± 590 lux (130 footcandles ± 55 footcandles). The color temperature of the light source should be between 3800 K and 5000 K. The most important characteristic of the light source is the color rendering index (CRI). The CRI is a scale from 0 to 100 and is used to describe the visual effect of a light source on eight standard pastel colors. For good color rendering in the prints being viewed, the CRI of the light source should be between 85 and 100.

Fluorescent tubes, such as the Westinghouse Living White or the Deluxe Cool White tubes (made by several manufacturers), have at least a CRI of 85 and a color

temperature near 4000 K. Satisfactory results also can be obtained by using a mixture of incandescent and fluorescent light. For each pair of 40-watt Deluxe Cool White fluorescent tubes, a 75-watt frosted tungsten bulb should be used.

Ring Around

Comparing the test print to a series of prints that vary from a standard print (correct density and color balance) in known amounts is a simple method of determining color and density correction (fig. 12-4). Comparing your test print to a ring around is particularly

helpful when your test print is far from being correct. When using a ring around, you should match the test print as closely as possible to one of the prints. The amount and color of filtration you should add or subtract from the filter pack are the same as indicated on the ring around.

When the test print is reasonably close to being correct, you can predict the final exposure conditions accurately. Once again, remember how exposure affects the three dye layers of the paper. That will simplify the choice of selecting the correct filtration.

Color Printing Viewing Filters

When a test print is reasonably close to the desired color balance, viewing it through color printing viewing filters helps to determine what color change is needed. Color printing viewing filters come in six filter colors: red, green, blue, cyan, magenta, and yellow. Each color is represented in 10, 20, and 40 density values.

To use a filter, hold it several feet away from the print and light source. Quickly flick the filter in and out of your line of vision to see the color correction the filter makes. Since these filters tend to overcorrect the highlights and undercorrect the shadows, you should view the lighter middle tones through the filters to determine the desired color balance. Try several filters of different values and colors when evaluating a test print; for example, when the print looks “cold” to you, evaluate it through a series of red, magenta, and yellow filters to determine whether the color in excess is cyan, green, or blue. Similarly, viewing a “warm” print through cyan, green, and blue filters will determine whether the color in excess is red, magenta, or yellow.

Since the contrast of print materials is fairly high, a filter used in exposing a print tends to produce a greater change in color balance than the visual effect of viewing a print through a filter. In general, the filtration change to the filter pack should be one half of the viewing filter that makes the lighter middle tones of the test print appear correct; for example, you have determined that when viewing a test print through a 20CC green filter, the color balance looks correct; therefore, you would make a 10CC change to your filter pack

Suppose, again, that the test print is too blue; that is, not enough yellow dye was produced. The print will look best through a 10CC yellow filter. Since blue light creates yellow dyes, we must increase the amount of blue light reaching the paper by 05CC. You should do this by subtracting 05CC of yellow filtration (for subtractive printing) or subtracting 05CC of blue

filtration (for additive printing). When a 20M filter is best for viewing, subtract 10CC G (additive printer) or 10M (subtractive printer) from the pack to produce the desired correction.

MODIFYING THE FILTER PACK

Remember, you must produce a test print with proper density before you change the filtration on your enlarger or printer. Before modifying the filter pack in the enlarger or printer, you must keep in mind what type of printer you are using. Modifying the filter pack for a subtractive type printer is completely opposite from the filter pack adjustment necessary on an additive printer.

Subtractive Printers or Enlargers

When you have determined what color dominates the test print, that filter or its complement must be added or subtracted from the filter pack. Whenever possible, you should subtract filtration.

Table 12-1 may be useful in determining what filter adjustment should be made.

The following rough guide may also be helpful: When a slight shift in color balance is needed, use an 05 or 10 filter change; when a moderate shift is needed, use a 15 or 20 filter change; and when the shift required is too large to estimate, try a 30 filter change.

The filter pack should not contain more than two colors of the subtractive filters (yellow, magenta, or cyan). When all three colors are in the filter pack neutral density results. Neutral density only increases the exposure time required. Neutral density is eliminated by removing the filter color of least density completely and then removing the same amount of density from each of the other two colors. Thus, if you calculated the filter pack to be $30M + 20Y + 10C$, you should remove 10 CCs of each color ($10C + 10M + 10Y$) completely for a filter pack of $20M + 10Y + 0C$.

When you either add or subtract filtration from the filter pack, the intensity of the light also changes. When filtration is added to the filter pack, the intensity of the light reaching the paper is less. When filtration is subtracted from the filter pack, more illumination reaches the paper. Thus you must adjust the exposure time when the filter pack is changed.

Fortunately, when dichroic filters are used, little exposure compensation is needed. When these filters are used, no correction is required when the yellow filtration is changed. Only a 1-percent change to the exposure time is required for each 01 unit of magenta or cyan

Table 12-1.—Filter Pack Adjustments for Subtractive Printing

If the color in excess is:	If possible, subtract these filters:	OR Add these filters
Yellow	Magenta and Cyan (or Blue)	Yellow
Magenta	Cyan and Yellow (or Green)	Magenta
Cyan	Yellow and Magenta (or Red)	Cyan
Blue	Yellow	Magenta and Cyan (or Blue)
Green	Magenta	Cyan and Yellow (or Green)
Red	Cyan	Yellow and Magenta (or Red)

Table 12-2.—Exposure Factors for Kodak CC and CP Filters

FILTER	FACTOR	FILTER	FACTOR
05Y	1.1	05B	1.1
10Y	1.1	10B	1.3
20Y	1.1	20B	1.6
30Y	1.1	30B	2.0
40Y	1.1	40B	2.4
50Y	1.1	50B	2.9
05M	1.2	05G	1.1
10M	1.3	10G	1.2
20M	1.5	20G	1.3
30M	1.7	30G	1.4
40M	1.9	40G	1.5
50M	2.1	50G	1.7
05C	1.1	05R	1.2
10C	1.2	10R	1.3
20C	1.3	20R	1.5
30C	1.4	30R	1.7
40C	1.5	40R	1.9
50C	1.6	50R	2.2

change to the filter pack. Normally, cyan is not a consideration because it is set at zero in subtractive printing, so neutral density is not created.

With experience, exposure adjustments can be estimated accurately when the test print is close to the desired density and color balance. Table 12-2 provides more detailed information on exposure compensations when CC or CP filter changes are made.

To use table 12-2, you must first divide the old exposure time by the factor for any filter removed from the pack. Then multiply the resulting time by the factor

for any filter added. When two or more color filters are changed from the filter pack, multiply the individual factors together and use the product.

Additive Printers or Enlargers

Additive printers operate completely opposite from subtractive printers. Color correcting may get confusing if you are operating both types of printers.

When making corrections to your filter pack on an additive printer, you should make the corrections as you

see them; for example, when your test print has too much green, you “tell” the printer to subtract green from the filter pack. When your test print has too much magenta, you “tell” the printer to add green to the filter pack, and so on.

The principles of color in theory are the same in subtractive and additive printing. The difference is that the additive printer uses the primary colors of red, green, and blue. When you make corrections on an additive printer, the printer is actually controlling the time that the additive colors are allowed to expose the paper through either pulsed-xenon tubes or CC filters; for example, when your test print has too much green and you subtract green from your filter pack, the printer is actually allowing more green light to reach the paper, which produces more magenta dye in processing. When the test print has too much magenta and you add green to your filter pack, the printer is actually reducing the amount of green light allowed to reach the paper, which reduces the amount of magenta dyes produced in processing.

Most additive printers automatically compensate and change the density when the filtration is changed; however, as in subtractive printing, you must achieve the correct density before making color corrections.

COLOR PROOF SHEETS

Once the basic filter pack is determined for a typical negative, the same exposure conditions can be used on future prints, providing the same types of film and paper are used. A proof sheet can provide a convenient aid in printing color negatives. The same technique used for making black-and-white proof sheets on an enlarger is used for making color proof sheets. Except when you are making color proof sheets, the enlarger height and lens-to-easel distance should be kept constant. When you are making an 8x10 enlargement from each negative, the same enlarger height that produces an 8x10 print should be used. When you must change the enlarger height from the negative previously printed, adjust the lens opening to compensate for the difference in illumination.

Assuming the exposure level for the contact prints is correct, exposures will be about the same when the negatives are placed in the negative carrier and enlarged. Some minor adjustments may be needed, however, to provide the highest quality print possible. Navy imaging facilities strive for a color balance within 05CC—because the “perfect” color print is very subjective. In most color prints, a slight color to the “warm” side is

more acceptable than color prints with a slight color cast to the “cold” side. This is particularly true when the subject in the photograph involves people.

Incidentally, you should not discard the test prints. Instead, write on them the actual exposure conditions and your predicted changes to the test print. These records will help you to gain the greatest practical value from past work and to develop the judgment needed for easier color printing in the future.

THE STANDARD NEGATIVE

Briefly defined, a standard negative is an average color negative that has been properly exposed and processed and makes an excellent print. In other words, it has been printed previously, and an accurate record of the filter pack required and other printer settings for a particular type of paper is available. A standard negative is used as a reference for comparison purposes. The standard negative is useful in several ways:

- Comparing the printing characteristics with those of other color negatives
- Comparing different paper emulsions
- Checking processing
- Programming color analyzers and automated printers

The standard negative is typical of the majority of negatives to be printed. When most of your negatives are outdoor shots on Kodak Gold 35mm film, the standard negative should obviously be an outdoor shot on Kodak Gold 35mm film. The standard negative must be normally exposed, normally processed through your imaging facility, and a typical subject with typical lighting; that is, the lighting ratio and light direction should be similar to most of your production negatives.

A gray card included in the image area of a standard negative is extremely helpful. The gray card can be used to determine whether the negative received the correct exposure; for example, a Kodak Vericolor III negative is properly exposed when the gray card density in the negative is between 0.65 and 0.85 when read through a red filter on the densitometer. For other types of film, consult the *Photo-Lab-index* to locate the proper density measurements. When used in a standard negative, the gray card must receive the same exposure as the subject.

One good practice is to have a standard negative for each general category of photographic assignments produced by your imaging facility. These standard negatives should be produced with the equipment,

light-sensitive materials, and lighting conditions commonly used in your facility; for example, when awards presentations are commonly photographed using syncro-sun techniques with a medium-format camera and Kodak VPS film, then your standard negative should be taken under the same conditions. The same applies for studio portraits, indoor on-camera flash photography, and so forth. A basic enlarger filter pack should be determined for each negative.

TRIAL-AND-ERROR PRINTING

Few characteristics are exactly the same in two color negatives. Even when the subject matter is similar, differences can be caused by normal manufacturing variations from one emulsion to another, adverse conditions before exposure, illumination of different color quality, variance in sensitivity with changes in illumination level and exposure time (reciprocity effect), adverse storage conditions between exposure and processing (latent image loss), and nonstandard processing conditions.

Most color negatives of the same subject that are exposed under similar conditions print similarly, but not identically. Differences may result from variations in lighting conditions (time of day, sky conditions, etc.), film emulsions, film processing, or other factors. These differences are normal and should be expected. The standard negative provides a good starting point for future printing requirements.

For example, you made an excellent 8x10 print from the standard negative with a filter pack of 40M + 60Y and exposed the print for 10 seconds at f/5.6. The enlarger settings should remain the same as a starting point for similar negatives, providing the same type of paper is used. For a particular production negative, you may find it necessary to add a 10M filter to the pack and adjust the printing time to 11 seconds to compensate for the differences between the new negative and the standard negative. In other words, the new negative may print differently from the standard negative by a 10M filter and a 10-percent increase in printing time.

The amount and types of color equipment you use depend on the volume of color production of the imaging facility where you work. A photo lab that makes occasional color prints probably uses only a standard negative and color printing viewing filters. Larger Navy imaging facilities that produce large quantities of custom color printing may use evaluation methods involving instruments, such as color analyzers, densitometers, and other electronic devices.

COLOR ANALYZERS

Color analyzers operate by comparing a standard negative to production negatives. For successful negative evaluation, the reference areas must have the same subject matter in all the negatives; for example, a gray card included in the picture, a flesh tone, the highlighted area of an aircraft wing, or a neutral area of a ship, all provide a suitable reference area. In portraiture, a medium-flesh tone is often selected. In other fields of photography, you should either include a gray card in the scene or expose an additional negative replacing the subject with a gray card. In the latter case, the negative with the gray card is used only for evaluation purposes and is replaced by the subject negative when the print is made.

When a skin tone is used instead of a gray card in portrait negatives, the color analyzer tends to reproduce all skin tones the same as the standard negative regardless of variations in skin color or lighting. Similarly, all images of a gray card tend to be printed alike regardless of the position of the card relative to the main light.

Color analyzers are used to reduce the waste that is produced through the trial-and-error method of color printing. The standard negative is used as a reference when color analyzing instruments are used. There are two categories of color analyzers: off-easel and on-easel.

Off-Easel Analyzers

Off-easel color evaluation is performed by measuring or evaluating the color negative before it is placed in the enlarger. Commonly in Navy imaging facilities, off-easel evaluation is accomplished using a densitometer. The main advantage of using a densitometer is you can service a number of enlargers. That is especially useful when you cannot have on-easel analyzers for each color enlarger. Another advantage, off-easel evaluation can be done under normal room lighting conditions.

To set up an off-easel evaluation system, you must first read the density of the reference patch from your standard negative on a *transmission densitometer*. You read the reference patch through a red, green, and blue filter. The densitometer provides you with direct density reading of the cyan, magenta, and yellow dyes present in the reference patch. The values that you read from the reference pack are then added to the known standard negative filter pack of the enlarger. The production



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Figure 12-5.—On-easel color analyzer.

negative to be printed is then read on the densitometer and these densities are subtracted from the total density values of the standard negative (negative reference patch and enlarger filter pack). This method of evaluation does not indicate directly the required exposure for the production print, but the production print exposure can be estimated closely by using the standard negative exposure and compensating for any changes to the filter pack. An example on how this off-easel evaluation system operates is as follows:

Gray patch of standard negative	=	47C 51M 50Y
Established filter pack for standard negative	=	0C 47M 34Y
Sum:		47C 98M 84Y
Subtract gray patch of production negative		-44C 63M 49Y
Difference:		03R 35G 35Y
To illuminate neutral density	-	03 03 03
Production negative filter pack		0C 32M 33Y

A reflection densitometer also can be very useful in color print evaluation. A reflection densitometer can be

used to match an earlier printed print with the color print you are currently printing. To use a reflection densitometer as an aid in color printing, you must compare or read a reference area on your test print. This is particularly useful when you are making a color print with neutral areas. As you know, black, gray, and white have approximately equal portions of red, green, and blue. By taking a reflection densitometer reading directly from one of these neutral areas (such as a gray card, the side of a ship, or part of a gray aircraft), you can determine what color and the amount of that color in excess. To change your filter pack for print corrections, you must take one half of the density value as read from the densitometer and either add or subtract that value from your filter pack; for example, you take a reflection densitometer reading from a gray patch on your color test print. Your density readings are 50R, 50G, and 70B. The densitometer indicates that your test print is high by 20B (too much yellow dye). To adjust the filter pack, you should add CC10Y to your filter pack for subtractive printing or add CC10B on an additive printer.

Another off-easel color evaluation system is a *color video analyzer*. This system scans the color negative and is viewed directly on a color monitor. The image on the monitor can be manipulated until the proper color balance, density, and image size are achieved. The

corrections are then sent through a translator device to the printer. This system has essentially been replaced with electronic darkrooms at Navy imaging facilities.

On-Easel Analyzers

An on-easel color analyzer (fig. 12-5) is an electronic photometer used to measure the illumination and three color primaries of light on the baseboard of the enlarger. These photometers take these measurements through tricolor filters.

On-easel measurements are made conveniently by placing a small probe on the reference area of the projected image on the baseboard. This small probe is connected to a fiber-optic light tube that carries the light from the reference area to the body of the photometer.

Color analyzers are programmed using standard negatives printed by the trial-and-error method of color printing. Once a good color print is made from the standard negative, the image luminance of the master negative is measured from the reference area. This reference area is read through red, green, and blue tricolor filtered sensors and finally without filters over the photocell. The analyzer scale is then zeroed for each condition. You then insert the new production negative in the enlarger and place the photocell on the same projected reference area on the easel. The aperture and dichroic filters are then changed until the meter is zeroed out once again.

Most on-easel color analyzers have a number of memory channels so you can store programs for different film or paper types.

The advantage of on-easel color analyzers is that, unlike off-easel evaluation, each measurement compensates for filter fading, lamp aging, and different image magnifications. Exposure and filtration are given directly. A disadvantage is that the readings must be made under the same conditions as color printing on an enlarger (complete darkness except for the illumination of the projected image of the enlarger). Both on-easel and off-easel evaluation depend strongly on accurate readings and placement and choice of a good reference area.

Two methods of electronically aided color evaluation are used. They are spot or small-area measurements and large-area or integrated measurements. Small-area measurements made on the easel are the most accurate; however, a small-reference area is not always possible.

When small-reference areas are not provided, large-area measurements can be taken. Large-area measurements are made usually from the whole negative area. For off-easel evaluation using a



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Figure 12-6.—Kreonite color processor, Model KCP-16.

densitometer, a large photocell is used to take such readings. For on-easel analyzers, the image is integrated by placing diffusion material between the negative and the photocell. You then place the photocell and sample various areas of the projected image. These sample areas are then “integrated” to gray as though they were a typical subject. This type of evaluation does not compensate for images that do not contain typical color or tonal distributions; for example, when the subject of a negative is predominantly red, an integrated reading overcompensates and a cyan print results. That is called *subject anomaly* or *subject failure*. This is the method used by many automatic printers. Color prints, such as these, must be color corrected manually.

COLOR PRINT PROCESSING

Color printing paper must be handled and processed in complete darkness because color paper is panchromatic. Like color film, time and solution temperature is much more critical than in black-and-white processing. Because the processing of color paper must be very consistent, color prints are not processed in trays. Color paper is always processed in automatic color print processors (fig. 12-6) or rotary drum processors.

The chemistry most commonly used in the Navy for color paper processing is Kodak Ektacolor RA Chemicals for Process RA-4. The RA-4 process is a washless process that consists of color developer, bleach/fix, and stabilizer. The total processing time for the RA-4 process is about 4 1/2 minutes.

MAKING TRANSPARENCIES FROM COLOR NEGATIVES

You can make brilliant color transparencies from color negatives as easily as you made color reflection prints by using color printing materials on a transparent film base. These transparencies are of excellent quality. This allows you the option of making them larger, smaller, or the same size as the original negative.

Several materials are available for making color transparencies from color negatives. Two of the most common are Kodak Duratran RA and Kodak Duraclear RA display materials. These materials allow you to make large-display transparencies from color negatives.

The Kodak Duratran RA and the Duraclear RA transparency materials can be printed using the same methods, printing equipment, and processing chemicals as Duraflex RA print paper. Both the transparencies and paper are processed using Kodak Ektacolor RA-4 chemicals; however, the transparency materials require a longer processing time. The Kreonite Model KCP-16 allows for this longer processing time. By flipping a switch, you can slow down the processor, allowing for a longer processing time.

When printing color transparency materials, you must use a black easel. Because these materials do not have a paper backing, light is transmitted through the material and reflects back when a black easel is not used. All other printing steps are the same in printing color paper and color transparency materials. Consult the *Photo-Lab-Index* for starting exposure and filter pack settings.

COLOR PRINTS FROM COLOR TRANSPARENCIES

Color prints can be made directly from color transparencies (slides) without the time and expense of making an internegative, but the quality of a print can only be as good as the quality of the transparency from which the print is made. Originals that are poorly exposed or processed or are damaged or dusty do not provide satisfactory prints.

Transparencies that are old or stored under adverse conditions are likely to fade to some degree. This fading may not have been equal overall. That can create problems in printing. Generally, slide duplicates vary widely in quality and do not make high-quality color prints.

There are several direct positive materials available for making color prints directly from color slides. Kodak Ektachrome 22 paper is a reversal color paper that, when exposed to a slide, produces a positive color image of the slide. Kodak Ektachrome 22 paper is processed in Kodak Ektachrome R-3000 chemicals. Consult the *Photo-Lab-Index* for the most updated information concerning these processes.

Another way to make full-color prints directly from color transparencies is by the dye destruction color process. At the time this training manual was written, *Cibachrome* products are the only direct positive color materials manufactured using this process.

Cibachrome silver-dye-bleach materials consist of a white opaque support, coated with light-sensitive emulsion layers on one side and a matte, anticurl gelatin on the opposite side. This white pigmented plastic film base has a similar appearance to paper but is actually a film, much like color slide materials-the emulsion layers are arranged in the same order as color transparency (slide) materials (including the yellow filter layer).

Unlike conventional color paper processes where dyes are formed from color couplers during processing, dyes in Cibachrome materials are incorporated in the blue, green, and red light-sensitive layers during manufacturing. These cyan, magenta, and yellow dyes are designed to be destroyed when processed. Red exposure is intended to cause the destruction of cyan dyes, green exposure leads to the destruction of magenta dyes, and blue exposure sets up the destruction of yellow dyes.

The processing of Cibachrome materials involves four chemical steps: black-and-white developer, bleach, fixer, and stabilizer. In the black-and-white developer, the exposed silver halide crystals are reduced to metallic silver. When the silver halides in the emulsion layers are converted to metallic silver, the dyes present in the emulsions are fragmented. In the bleach, the silver image is converted back to silver salts (halides), and the dye fragments are made either colorless or water soluble. The unwanted silver salts (halides) are then removed in the fixer. The stabilizer keeps the remaining color dyes more permanent.

The principles of making color positive prints from color transparencies are the same whether coupler development or dye destruction materials are used. Colored filters are used to alter the printing light to obtain proper color balance, much the same as is done in printing color negatives.

You must keep in mind, however, that you are working with color positive materials, and not negative materials. The borders of these positive materials are black when unexposed. Dust particles and scratches also appear black. To make a test print lighter, you must increase the exposure. Dodging darkens selective areas of a print, and burning in lightens selective areas of a print. Color corrections are performed the same as the visual appearance requires.

AUTOMATED PRINTERS

Many Navy imaging facilities have automated printers that print photographic negatives. Most can be used to print both black and white and color. When high-volume production is routine in an imaging facility, automated printers are an invaluable piece of equipment.

There are many types of automated printers throughout the fleet. Some types hold long rolls of photographic paper that must be taken out and processed through a processor. Other more sophisticated types analyze, expose, cut, process, and dry the paper automatically.

ROLL PAPER PRINTERS

The roll paper printer is very popular on larger ships and shore stations that produce a large volume of color prints. The advantages of roll paper printers are they are operated under normal room lighting conditions, and they are very useful when a large number of the same size prints are needed from a single negative. When these printers are used, the correct density and color is accomplished by making test prints. Once the corrections and number of prints required are keyed into the printer, the printer makes each exposure and advances the paper automatically. When the printing is completed, the exposed roll of paper is removed and processed. After processing, the prints are then cut from the roll with a paper cutter.

Roll paper printers have built-in analyzers. These analyzers are calibrated using standard negatives. When a production negative is printed, the machine refers to the memory and produces a print using the information stored from the standard negative. Generally, that produces a print that closely represents the original



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Figure 12-7A.—Front view of Pako BC 24 roll paper printer.

scene; however, test prints are still made to produce the highest quality prints possible. The most popular roll paper printer used in Navy imaging facilities is the Pako BC 24 (fig. 12-7A and fig. 12-7B).

MINILAB SYSTEMS

Minilab systems (fig. 12-8) have become very popular in Navy imaging shore facilities and aircraft carriers. These types of printers are fast and can be used to rush production. In these systems, the printer and processor are combined into one unit. The printer cuts the paper to size, exposes it, and automatically feeds it through the processor. Minilabs (as they are called) are used in all of the “One Hour” photo-finishing shops that you see today.

The operation of a minilab is very easy once you become familiar with the system. Minilabs can be operated under normal room lighting conditions. The printer is controlled by a keyboard (fig. 12-9). Some systems have zoom enlarging lenses to alter the image size. The negative can be aligned and composed by adjusting the negative carrier. These adjustments to the image size and cropping can be seen on a viewing screen.



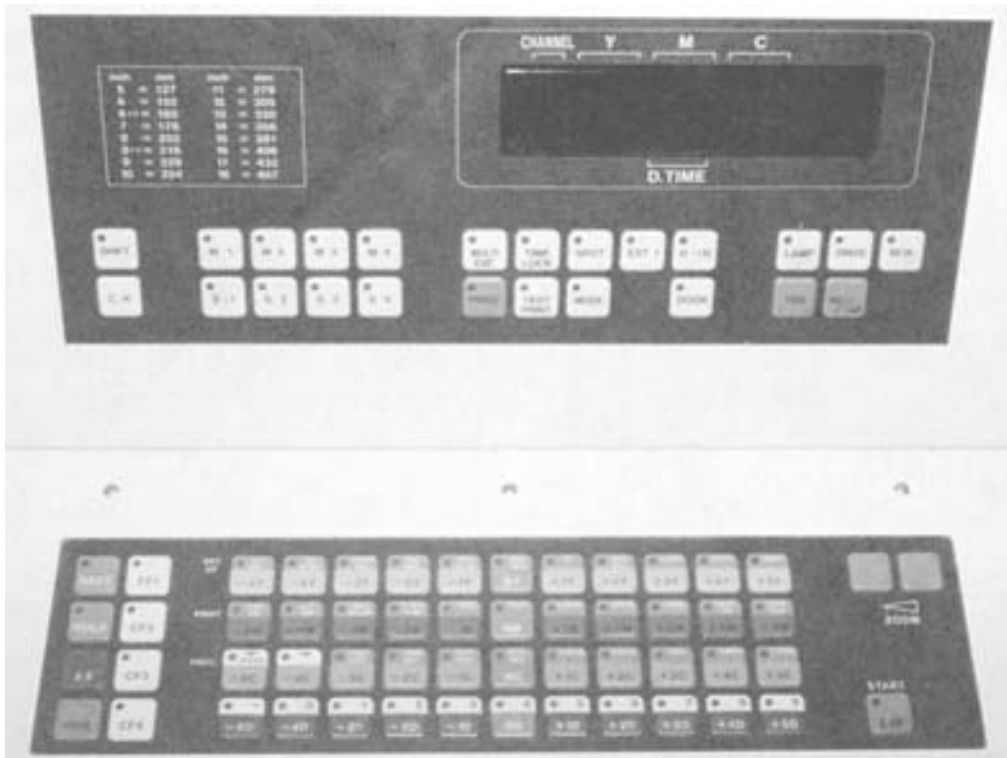
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Figure 12-7B.—Top view of Pako BC 24 roll paper printer.



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Figure 12-8.—Noritsu QSS-1201 minilab system.



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Figure 12-9.—Keyboard of a Noritsu Model 1001 print processor.

Minilabs have a microprocessor that stores information put in by a programmer. The information is retrieved through channels. The channels are programmed for different film manufacturers, ISOs, negative sizes, print sizes, and paper combinations. The various information combinations that are stored in these channels are used to print production negatives; for example, a 35mm Kodacolor negative to a 4x5 print is printed on one channel, and 35mm Fujicolor negative to a 5x7 print is printed on another. By programming different negative and print combinations into separate channels, you are able to produce production prints which have good density and color balance from the automatic printer. You can also fine-tune the density and color by using the keyboard.

Color correcting on a minilab is less complicated than on an enlarger. The keyboard of the printer contains yellow, cyan, magenta, and density keys. These keys range in value so you can make minor or major adjustments. When the density of the print is off, density can be either added or subtracted. When a production print has too much cyan, yellow, or magenta, these colors are subtracted. When the print has too much red, green, or blue, the complement of these colors is added.

After the prints are exposed, the paper is fed automatically into the processing section of the minilab. The processing section contains chemical tanks and a dryer section. Each tank has a roller assembly rack that transports the print through the processor. Minilabs require no plumbing or drains because they use a washless process, such as KodakRA-4 chemistry. When Kodak RA-4 chemistry is used, the total processing time is completed in about 4 1/2 minutes.

The setting up and programming of automated printers can be complicated. You are expected to be a printer operator only. Programming the channels, density, and color balance of automated printers should be left to the more experienced imaging facility personnel.

While automated printers are very useful in controlling a high influx of production, there are disadvantages in their use. Not all imaging facilities have the space required to support automated printers. Cropping is very restricted, and dodging and burning cannot be performed. Like all machines, automated printers require maintenance. They also must be programmed accurately to function the way they are designed. Without the support and expertise of knowledgeable personnel, normal projection printing may be preferred.

CHAPTER 13

MOTION MEDIA

Motion media has gone through many technical advances in the past several years. Portable motion-video cameras have changed from cumbersome cameras and recording packs to small hand-held cameras. Reduced size, improved quality, and easier operation has, and is continuing to improve and expand motion video in all areas of the Department of Defense. Most Navy ships have closed circuit television systems for information, entertainment, and educational purposes. Motion media is distributed easily and dominates all other sources of communication in today's society. Because of this, the Navy uses this form of communication extensively to relay information.

The most common form of motion-media photography is video. Since the motion picture is the grandfather to the technology of motion media as we know it today, it is discussed briefly in this chapter.

MOTION PICTURE

The first fact regarding motion pictures is they do not move. Each image or frame of motion picture film is a separate, still photograph. These individual images or frames are normally recorded at a rate of 24 separate pictures per second. This rate can be varied to achieve certain effects. Since so little time passes between exposing one frame and the next, there is relatively little difference between pictures, even when the subject moves rapidly.

The illusion of motion in motion-picture photography is due to the natural characteristic of human vision. This characteristic of human vision is called *persistence of vision*. Persistence of vision was discovered by Peter Mark Roget, the author of the famous Thesaurus. The retina of the eye continues to perceive an image for a short period of time after the light stimulus representing the image has been removed. Usually, this "after image" lasts about 1/50 second, depending on the brightness of the image.

In viewing a motion picture, the eye continues to perceive the fading image projected from one frame as it is replaced by the next frame, and so on. In effect,

the images are momentarily superimposed in our vision, so any differences between them, however slight, are mentally noted. If these differences suggest any relative change in subject position, the apparent difference is mentally interpreted as motion. The mind translates this information into the logical deduction that whatever we are seeing on the movie screen must be moving.

CAMERAS

Since motion pictures are a series of still pictures, the motion-picture camera is basically the same as the still-picture camera. The primary difference is that it has a mechanism for taking a series of many photographs in rapid succession and at regular intervals on a ribbon of film. All cameras have the following four basic parts: a lighttight compartment, a lens or lenses, a shutter, and a film plane or pressure plate.

The motion-picture camera has two additional basic features; the film drive and intermittent action. The film drive mechanism transports the film continually from a supply spool of unexposed film to a take-up spool of exposed film. This transport takes place by means of toothed, drive sprockets. The teeth of the drive sprockets engage the perforations along the edge of the film and move the film through the camera.

The intermittent action in a motion-picture camera is caused by a pulldown claw that advanced the film one frame at a time at the film gate.

During one cycle of operation of a motion-picture camera, the following action takes place. The film is advanced by the sprocket drive mechanism. The pulldown claw or shuttle then advances the film one frame. The film is stopped momentarily and the shutter revolves once, thereby making the exposure. The pulldown claw then moves the film to the next frame for exposure. Because the film moves in an intermittent or stop-and-go manner, it becomes necessary to have a surplus or loops of film before and after the pulldown claw to help take up the

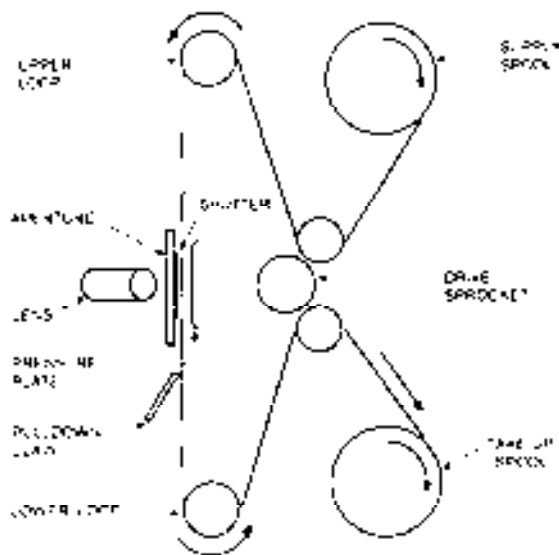


Figure 13-1.—Basic components of a motion-picture camera.

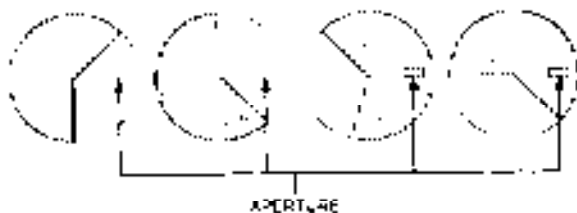


Figure 13-2.—Rotary shutter.

shock and prevent the film from breaking (fig. 13-1).

The shutter in most motion-picture cameras is a focal plane type and is called a rotary disk shutter. A rotary disk shutter is a disk that has a segment cut out, causing the shutter to have a light and dark cycle as it rotates. Exposure is made when the cutout segment of the shutter passes in front of the film. The film is advanced during the dark cycle (fig. 13-2).

A motion-picture camera is used to photograph action in a rapid succession of still pictures on a long strip of film. Each picture area on a motion-picture film is called a frame, and the speed that the camera is operated is called frames per second (fps). The standard operating speed for 16mm cameras is 24 fps. When the camera operating speed and the rate of projection are the same, the action looks normal; therefore, the standard projection speed is also 24 fps. However, it is possible, and sometimes desirable, to make motion pictures at a slower or faster rate than 24 fps. You may do this to either slow down or speed up the action on the screen. To portray a subject in slow motion, you operate the

camera at a speed faster than the standard 24 fps, but keep the projector at the standard speed. To portray a subject in fast motion, you operate the camera at a speed slower than 24 fps, and the film is projected at 24 fps. All changes to the portrayal of normal subject motion should be done by adjusting the camera speed, not the movie projector.

Camera speeds in the thousands of frames per second are used in scientific and experimental research to measure and observe such things as the fall of liquids, the speed of objects in flight, and the bursting characteristics of objects. When films shot at very fast fps rates are projected at 24 fps, the illusion of subject motion on the screen is slowed down considerably. At these speeds the viewer can study details of the subject matter and obtain research data.

Motion-picture cameras are classified according to the size (width) of the film they use. The most common motion-picture film sizes are as follows: 8mm, super 8, 16mm, and 35mm. In the Navy today, motion-picture film has almost been completely replaced with video film; however, Hollywood productions still use motion-picture film as large as 70mm.

Lenses used in motion pictures are basically the same as lenses for still photography; therefore, the information on optics presented in chapter 1 also applies to motion-picture camera lenses. The standard or normal focal length lens for a 16mm camera is 1 inch (25mm). Longer or shorter focal length lenses should be considered as long focal length (telephoto) or wide-angle lenses, respectively, depending on what size film is used. A long focal length lens for 16mm film is 38mm or longer. A wide-angle focal length lens for this camera is 13mm-17mm. Table 13-1 illustrates some typical camera and lens combinations.

FILTERS

With one exception, the use of filters for motion pictures is the same as for still photography. The effects that filters produce on motion-picture film emulsions are the same as the effects they produce on still photographic film emulsions. The one exception is the use of a polarizing filter. Camera panning should be avoided because variable darkening of the image results. The information on filters presented in chapter 3 applies to motion-picture photography as well as still photography.

Figure 13-1.—Camera Sizes and Lens F-1 Lengths

	8mm	16mm	35mm
Normal	12mm	25mm	50mm
Wide Angle	6 to 9mm	13 to 17mm	35mm or less
Telephoto	25mm and above	38mm and above	100mm and above

EXPOSURE CALCULATION AND CONTROL

Exposure meters for measuring incident light can be used directly to help determine lighting ratios. A gray card is used to get an accurate exposure reading whenever reflected light meter readings are taken.

Incident light exposure meters are very useful for motion pictures because they can be used at a scene to calculate exposure before the subject arrives. They also can be carried throughout the scene, thereby indicating uneven lighting or “hot spots,” thus indicating whether the lighting should be altered.

With a motion-picture camera, the final exposure adjustment is usually made only with the aperture because fps rate of the camera determines the shutter speed. The goal of exposure control for motion pictures is to produce **consistent** and **uniform** image densities and tones from one scene to the next.

Accurate and correct exposure control can be achieved only through the proper use of a good exposure meter. The exposure time for a movie camera is a result of the rate at which the camera is operated (usually 24 fps) and the shutter degree opening (the degree of the open segment of the shutter). The shutter degree opening for a particular camera is provided by the camera manufacturer. Given the shutter degree opening, you can determine exposure time by use of the following formula:

$$\frac{\text{Shutter Degree Opening}}{360 \times \text{fps}} = \text{Exposure Time in Seconds}$$

For example, suppose you have a camera with a shutter degree opening of 175 degrees and you intend to be filming at the standard rate of 24 fps. Determine the shutter speed as follows:

$$\frac{\text{Shutter Degree Opening}}{360 \times \text{fps}} = \frac{175}{360 \times 24} = \frac{175}{8640} = \frac{1}{49}$$

or 1/50 second

NOTE: 360 is a constant factor (number of degrees in a circle).

The information on exposure provided in chapter 4 applies equally well to motion-picture photography as it does to still photography.

Neutral density filters (ND) are often used in motion-picture work to help control exposure because of the limited f/stop and shutter speed combinations available on motion-picture cameras. When you are shooting a movie, the fps and the shutter degree opening are fixed. You may not be able to open up the aperture to get the correct exposure control and depth of field; therefore, you would use an ND filter to reduce the amount of light reaching the film. Remember, because of the fps rate, you are restricted to a given shutter speed, and stopping the lens down would destroy your depth-of-field effect.

MOTION VIDEO

Videotape recording has basically replaced motion-picture film making. Motion video has a number of advantages compared to motion-picture coverage. Some of these advantages are as follows:

- A videotape camera can record black and white as well as color.
- No time-consuming film processing is required and recordings can be played back immediately.
- When necessary videotape may be partially or completely erased and used again for several more recordings. It can be played back numerous times and may be stored indefinitely.
- Videotape is edited or assembled more quickly than film.
- Videotapes are duplicated and distributed easily to other Navy activities.

A video camera is optically similar to a movie camera, except it does not use film. Considering the

technical complexity of a video camera, it is fundamentally simple. To understand clearly motion video, you must be familiar with some key terms. These terms will be seen commonly in all publications pertaining to video.

KEY TERMS

AGC-Automatic gain control. Regulates the volume of the audio or video light levels automatically within a camcorder.

Analog-An analog signal that fluctuates exactly like the original stimulus (examples, sweep second-hand clock, phonograph player).

Ambient Sound-Background sound or “wild” sound. Sound that surrounds the scene or location, received by the microphone and recorded onto magnetic tape.

Aspect Ratio-The ratio of the height to the width of the film or television frame. Three units high to four units wide (3:4).

Audio Track-The area of a videotape that is used for recording audio information.

Beam Splitter-An optical device within a color camera that splits the white light into three primary colors: red, green, and blue.

Camcorder-A portable video camera with videotape recorder (VTR) and a microphone attached to form a single unit.

Capstan-An electrically driven roller that rotates and transports the videotape past the recorder heads at precise and fixed speeds.

CCD-Charged-coupled device, also called a chip. A small, solid state (silicon resin) imaging device used in a video camera instead of camera pickup tubes. Inside the chip, image sensing elements translate the optical image into a video signal.

Character Generator-An electronic device used to create words or graphics that may be electronically inserted or “keyed” over the video picture.

Color Bars-A color standard used by the television industry for the alignment of cameras and videotape recordings.

Component-The processing of RGB (red, green, blue) channels as three separate channels.

Composite Signal (Y/C)-(Also called NTSC signal) The video signal in which luminance “Y” (black

and white) and chrominance (red, green, blue) and sync information are encoded into a single signal.

Control Track-The area of the videotape used for recording the information necessary to synchronize the all elements during playback.

Digital VTR-A videotape recorder that translates and records the analog video signal in digital form.

Dub-Duplication of an electronic recording. Dub is always one generation away from the original recording.

Dropout-A loss of part of the video signal, which appears as white glitches. Caused by dirty VTR heads or poor quality videotape.

Field-Scanning lines in one-half of one video or television frame. There are two fields (one odd and one even) in a frame. One field equals 262.5 scanning lines, which create a total of 525 standard television lines or one frame. Also known as the NTSC signal (U.S. TV system).

Frame-The smallest unit in television or film, a single picture. A complete scanning cycle of the two fields occurs every 1/30 second. A frame equals 525 scan lines.

Gain-The level of amplification for a video or audio signals. Increasing the video gain increases the picture contrast.

Generation-The number of dubs or copies away from the original recording. The greater the number of generations, the greater the loss of picture quality.

Heads-A small assemble within an audio or video recording system, which can erase, record or playback the signal in electromagnetic impulses.

Helical Scan, or Helical VTR-(Also called slant track). A videotape recording or a videotape recorder in which the video signal is put on tape in a slanted, diagonal way. Because the tape wraps around the head drum in a spiral-like configuration, it is called helical.

Noise-Unwanted sounds or electrical interference in a audio or video signal. In the audio track, there is a hiss or humming sound. In the video picture the interference appears as “snow.”

NTSC-National Television Standards Committee. U.S. standards for television or video signal broadcasting. Also known as the composite signal (Y/C).

Pickup Tube-The imaging device in a video camera that converts light into electrical energy (video signal).

Pixel-The smallest single picture element with which an image is constructed. The light-sensitive elements in a CCD (chip) camera.

Preroll-To start a videotape and let it roll for a few seconds before it is put in the playback or record mode so that the electronic system has time to stabilize.

RGB-The separate red, green, and blue color (chrominance), or "C," video signals.

Slant Track-Same as helical scan.

Time Base Corrector (TBC)-An electronic accessory to a videotape recorder that helps make playbacks or transfers electronically stable. A TBC helps to maintain picture stability even in dubbing-up operations.

Video Cassette-A plastic container in which a videotape moves from a supply reel to a take-up reel. Used in all but the 1-inch VTRs.

VTR-Videotape recorder or recording. Includes video cassette recorders.

Y/C-The separate processing of the luminance (Y) and chrominance (C) signals.

VIDEOTAPE RECORDERS

Videotaping is similar to audiotape recording. The electronic impulses of television pictures (video signal) and sound (audio signal) are recorded on the videotape by magnetizing the iron oxide coating on the videotape. During playback, the recorded video and audio signals are converted again by the television set into television pictures and sounds. However, the amount of electronic information is many times greater for video than for audio recording.

RECORDING SYSTEMS

There are many different systems of treating and recording the video signals. Videotape recording systems can be divided roughly into three subsections: analog and digital; composite (Y/C), and component; and tape formats.

Analog and Digital Systems

Both analog and digital systems are used in naval imaging facilities. The analog system is easier to understand if you think of it in the same terms as a record and a phonograph. Analog systems record the continually fluctuating video signal that is created and processed by a video source (camera) on videotape.

During playback, the recorded information is retrieved as an identical, continually fluctuating signal from the videotape.

Digital-video systems work on the same principle as compact disks (CD) used in your home stereo or office computer. Digital-video systems convert the analog video signals by sampling (selecting parts of) the scanned image. It then translates the scanned image into millions of independent, fixed, values called **pixels**. A pixel is the smallest single picture element from which images are constructed. Each pixel has its own color (hue and saturation) and luminance values. These values are expressed as binary numbers (series of zeros and ones). The binary numbers are then stored on, and retrieved from, videotape or other storage mediums, such as large-capacity disks.

Composite (Y/C) and Component

Composite (Y/C) and component all refer to the way the video signal is treated in the videotape recorder. A composite video signal means that the luminance information ("Y" signal), chrominance information ("C" signal), and the sync information are combined into a single signal (Y+C+sync). Standard television information is designed to operate with composite video signals. Only one wire is required to transport a composite video signal. This composite signal is usually called NTSC, because the electronic specifications for a composite video signal were adopted by the National Television Standards Committee.

The major disadvantage of a composite signal is that slight interference exists between the chrominance and luminance information. This interference becomes more noticeable through each videotape generation.

In a true component system, the R, G, B channels are kept separate and treated as separate red, green, and blue video signals throughout the entire recording process. Each of the three signals remains separate even when laid down on the videotape. The component system requires three wires to transport a video signal. This means that all equipment used in the component system requires three wires to handle the video signal that is incompatible with the NTSC system.

When the video is going to be televised, the signals of the Y/C and component systems must be combined into a single NTSC composite signal before it can be broadcast.



Figure 13-3.—Basic principles of a motion-video camera.

Tape Format Systems

The classification of a videotape recorder VTR by tape width was particularly important in the earlier days when the quality of the videotape recording was directly related to the tape format. The old standard used to be, the wider the tape, the higher the quality of the recording. Anything smaller than the 1-inch videotape was considered small format and inferior in quality. Today, 1/2-inch Betacam SP can provide equal or superior quality compared to the large-format, 1-inch machines. The Hi8 video camera (8mm) is superior to the 1/2-inch VHS cameras. Today, “small format” is used mainly to describe small, highly portable television equipment, such as small camcorders. Like all state-of-the-art electronic equipment, smaller no longer implies inferior quality.

The quality of the tape itself has much to do with the quality of the picture. No matter how sophisticated the video hardware, the resulting picture is only as good as the videotape being used.

Videotape is a ribbon of polyester film base coated with magnetic iron-oxide particles. The surface of the tape, or emulsion side, that faces the video recorder heads is highly polished to maximize tape-to-head contact and to minimize wear on the heads.

Head clogging results when oxide comes off the tape and gets caught in the head gaps of the recorder. If the tape clogs the video recording heads, you cannot play back or record. Normally, the heads will clog after recording or playing back half a dozen or so tapes. You should have the heads cleaned according to the manufacturer’s recommendations or according to Planned Maintenance System (PMS) requirements.

Videotape dropout occurs when a piece of magnetic oxide or coating on the tape flakes off or is rough, causing a “hole” or line of missing information in the picture when it is viewed on the monitor. Dropout

appears on the TV screen as little black or white lines, darting across the picture. The main causes of dropout are dirty heads or imperfections in the tape. Once dropout occurs, it cannot be replaced or corrected on the tape.

There are no black-and-white or color videotapes. Any videotape will record either black and white or color. Black and white or color depends solely on whether the camera and monitor are black and white or color.

THE VIDEO CAMERA

Refer to figure 13-3 to help clarify how a video camera operates. In the video camera, an image (a) is gathered by the camera lens (b), and focused on the face of the camera pickup tube (photocathode) or a solid-state imaging device (c). The face or screen of the photocathode is covered with thousands of light sensitive dots. As light from a particular part of the scene falls on each dot, the dot becomes electrically charged. A charge pattern is built up proportionally to the brightness of the scene. An electron beam in the pickup tube emits a steady beam of electron particles. This electron beam scans the charged pattern on the photocathode and reads over it in a series of lines. The scanning beam neutralizes each picture element or dot and produces varying electrical currents (the video signal). These currents are proportional to the charge pattern which are proportional to the light transmitted through the lens.

The current or video signal (picture) is amplified (d) and then recorded on tape by rotating heads (e) and then converted back to visible screen images in the viewfinder (f).

As each dot on the tube screen is scanned, the dot gives up its information and is wiped clean so the tube screen can respond to any new light it receives.

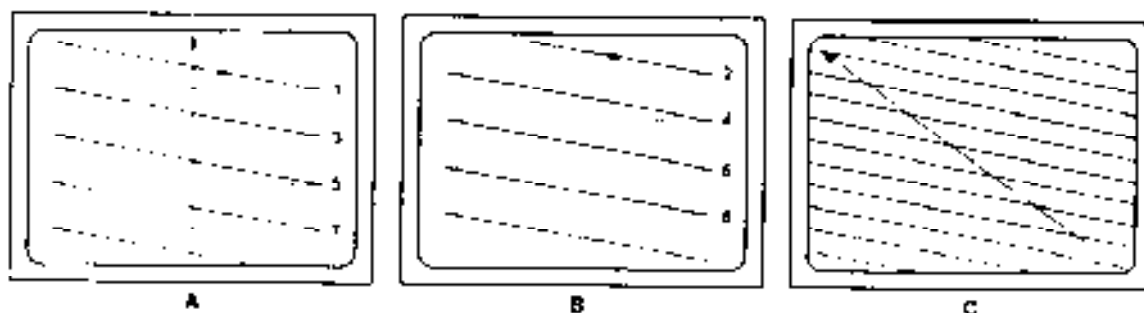


Figure 13-4.—Video scanning.

Figure 13-4 illustrates how this scanning process takes place. The electron beam first scans all odd-numbered lines, from left to right (a). When all odd-numbered lines have been scanned, it makes up a field. One field consists of 262.5 lines. After the odd-numbered ones are scanned, the beam jumps back to the top of the screen. At this point, the beam is so weak that it does not affect the screen. Back at the top of the screen the beam starts scanning the even-numbered lines (b). When all even-numbered lines are scanned a second field is formed. The two fields make up a frame (c) or one complete television picture. A frame consists of 525 lines. After completing a frame, the beam returns to the top to start with another first field.

This charge-forming-and-scanning is a fast, continuous process. The complete camera tube screen (frame) is scanned 30 times per second.

The motion-video camera picks up reflections of light from the scene while the microphone picks up sound. At the same time, the camera changes the light reflections into electrical impulses, and the microphone changes the sound into electrical impulses.

This is basically the way a black-and-white video camera works. A color video camera works on the same principle; however, a color video camera has three tubes. Through the use of a beam splitting device and filters, one tube forms a red image, a second tube forms a green image, and the third tube forms a blue image. The three tubes have identical scanning patterns, so the picture signals they produce are identical, except they differ in color.

During a video recording, the videotape moves past a rotating **head** that “writes” the video and audio signals on the videotape. During playback, the rotating head “reads” the magnetically stored information off the tape. Some VTRs use two or four heads for their record/play (write/read) functions. Digital VTRs have even more

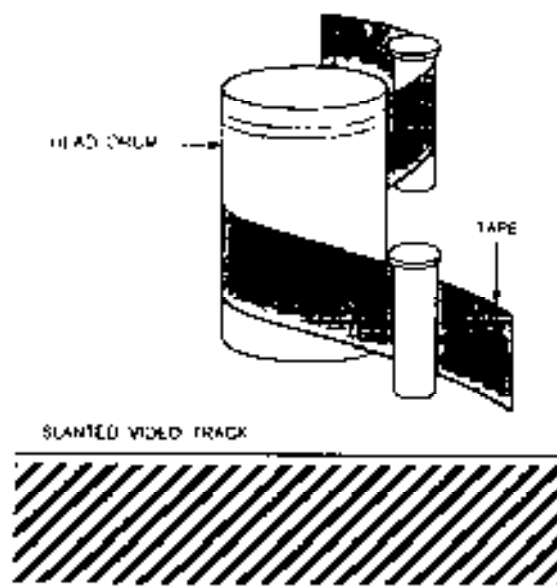


Figure 13-5.—Helical scanning system.

read/write heads. For explanation purposes a VTR with two record/play heads is discussed in this chapter.

Helical, or Slant-Track, System

The two heads are mounted opposite each other, either on a rapidly spinning head drum or on a bar that spins inside a stationary head drum. When the bar spins inside a stationary head drum, the heads contact the tape through a slot in the head drum. The tape is wound around the head drum in a slanted, spiral-like manner. This permits more tape area to contact the head, allowing the transfer of large amounts of video information (fig. 13-5). If the head contacted only the width of the tape, extreme tape or drum speed would be necessary. Because the Greek word for spiral is helix, this tape wrap, and often the whole video-recording system, is called the helical scan, or slant track

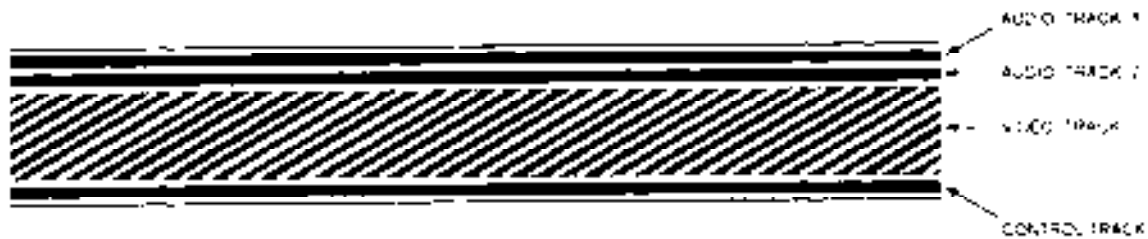


Figure 13-6.—Basic videotape track system.

Most videotape recorders put at least four separate tracks on the tape: the **video track** that contains the picture information, two **audio tracks** that contain all sound information, and a **control track** that controls the videotape and rotation speed of the video heads (fig. 13-6).

VIDEO TRACK.—When video signals are recorded in the normal NTSC composite configuration, one pass of the head records a complete field of video information (Y+C). The next pass of the head, (or, if you have a two-head machine, the second head) lays down the second field right next to it, completing a single video frame. Two fields make up a single frame. The two heads must “write” sixty tracks (thirty frames) for each second of NTSC video. In the four-head VTR, one pair of heads records at normal tape speed and the other pair records at a slower speed.

AUDIO TRACK.—The audio tracks record the audio signal. They are usually recorded by fixed recording heads that are near the edge of the tape and run along the length of the videotape. Because of the demand for stereo audio and for keeping certain sounds separate even in monophonic sound, all VTR systems provide at least two audio tracks.

CONTROL TRACK.—The control track contains evenly spaced blips or spikes, called the **sync pulse**, that mark each complete television frame. These pulses synchronize the tape speed and the rotation speed of the recording heads. This allows the tape to be played on a similar machine without picture breakups. Because the control track marks each frame of recorded video, it also aids in videotape editing.

Hi8 Track System

Because space is so limited in 8mm videotape, these systems squeeze the automatically generated **time code** and other data between the video and audio portion of a single-slanted track. The time code has been developed to provide a precise editing reference by recording the

exact frame address onto the tape. The 8mm time code is digitally recorded by units of hour, minute, second, and frame by the video heads. The 8mm time code is used only for 8mm format and is not compatible with other recording formats.

The Hi8 VTR splits each slanted track into audio frequency modulation (AFM) and video information. It also uses a pulse code modulation (PCM) audio track. The audio technology used in an Hi8 VTR is superior to video home system (VHS). The video/AFM audio track and the PCM audio track are separated by the time-code data (fig. 13-7).

VIDEO MONITOR

For viewing purposes, you must playback the recording either to the transmitter or directly to a receiver (TV set or monitor). At the receiver, the video and audio signals are separated and processed by separate circuitry. This circuitry changes the video and audio signals back to sound that you can hear and pictures that you can see. The sound is reproduced at the loudspeaker, and the picture is reproduced on the face of the cathode-ray picture tube.

A primary part of the monitor system is the cathode-ray tube. A type of cathode-ray tube is used in

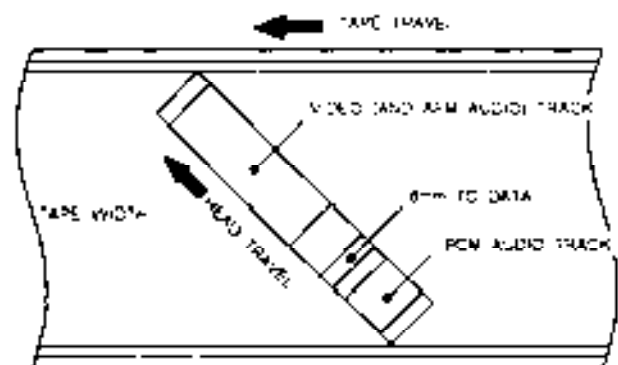


Figure 13-7.—Hi8 VTR tracks.



Figure 13-8.—Hi8 video camera. 302.291X

the camera to convert light rays into electrical impulses. The cathode-ray tube converts the electrical impulses back into light in the receiver (monitor).

CAMCORDERS

As a nonspecialized Photographer's Mate without a motion-media NEC 8143, you will be concerned mostly with recording motion-video images using a single camcorder. A camcorder has a single VTR directly attached to the camera to form a camera and recorder unit.

Each camcorder comes with manufacturer's instructions on how to use the equipment. Because there are a great variety of camcorders in the Navy, you must consult the instruction manual supplied with your machine for best results. One common motion-video camera used in the Navy is the Hi8 video camera (fig. 13-8).

The Hi8 camcorder is a small camera-VTR unit that records amazingly high-quality pictures and sound compared to a video home system (VHS) camcorder. It uses a special 8mm (about 1/3 inch) cassette with metal-oxide coated tape. These tapes are similar in size to an audio cassette tape.

A tempting practice while operating a camcorder is to shoot all videotape in the automatic mode. On the Sony Hi8 camcorder, when the AUTO LOCK switch is set, the iris, focus, white balance, sensitivity, and shutter speed (1/60) are set and adjusted automatically. If left unnoticed, there are several circumstances under which the AUTO LOCK mode will produce poor or undesirable results. You, as the camera operator, must pay attention to the subject and the surrounding

situations to produce quality motion-video coverage; in particular, brightness levels, focusing, color temperature of the light source, and subject movement.

Brightness Levels

The single greatest influence on picture quality is the brightness level. When the brightness level is too low, the recorded image looks grainy and flat. By familiarizing yourself with the brightness level of the subject, you can improve your recordings tremendously. In situations where the light level exceeds 100,000 lux, such as snow-covered scenes or a beach scene on a clear summer day, an ND filter is required. Under other daylight and bright, indoor conditions, the automatic iris is capable of adjusting to provide excellent results; however, in a low-light situation, such as spaces onboard ship, auxiliary lighting may be required to provide clear, sharp images. Another alternative, when available on your camcorder, is to increase gain. By increasing the gain, you increase the level of amplification of the video signal. This increases the contrast and provides a higher-quality recorded image.

In some situations, such as high-contrast scenes or backlit subjects, you must adjust the iris manually. Just like the aperture on a still camera, when the subject is backlit, open up the iris. When the subject is too bright, you must close down the iris.

Manual Focusing

There are situations when you must manually focus the camcorder to obtain sharp images. In the autofocus mode, the system uses a sensor at the center of the viewfinder screen to adjust the focus automatically; therefore, in situations where there is insufficient light, the subject is strongly backlit, or with subjects consisting of flat colors or little contrast (such as bulkheads or the sky), the autofocus mode may not function accurately.

Other situations in which you should use manual focusing are as follows:

- When the subject has finely detailed repetitive patterns
- When one subject is close to the camera and another is far away
- ◆ When the subjects are located behind screens, nets, or frosted glass
- ◆ When objects pass between the camera and the primary or intended subject

- When using lenses or filters to create special effects

You may also want to use manual focusing to conserve battery power.

CAUTION

NEVER attempt to force or manually focus the focus ring when the camera is set in the autofocus mode. This may damage the camera.

White Balance

Usually the auto white balance function of a video camera operates sufficiently in the automatic position; however, there are situations when the automatic light balance may not work correctly. Some of these cases are as follows:

- When the light reflecting from the subject is different from the light that is illuminating the camcorder
- When shooting a monochromatic subject or the subject is against a monochromatic background
- When recording under a sodium lamp, mercury lamp, or a white fluorescent lamp
- When recording outdoors under neon lights or fireworks
- ◆ When shooting scenes just before sunrise or right after sunset

To white balance a motion-video camera manually, you can follow a simple procedure. Normally a white lens cap, made of a diffuse plastic material, is supplied with the camera. You also can use any white object to white balance the camera, providing the white object is illuminated under the same conditions that you will be shooting. To white balance, you simply place the white lens cap over the lens, point the camera at the light source, and press the white balance button. Remember, when in the manual white-balance mode, if the color temperature of the light changes, you must reset the white balance.

To create special effects, there may be times when you want to "lie" to the white balance sensor; for example, you may want to produce motion video that has a warm color balance, such as that which occurs at sunrise or sunset. To produce video coverage with warm characteristics, you can "white balance" the video

camera on a blue object or any of the complimentary colors. When you record the scene, an overall yellow cast is produced. You can also use filters to create various effects.

Shutter Speed

When the Hi8 camera is set in the AUTO LOCK position, the shutter speed is set at the normal speed of 1/60 second. When fast-moving subjects are recorded at the normal shutter speed, the pictures are not recorded clearly. You can improve the image quality by increasing the shutter speed.

Because more light is required when shooting at higher shutter speeds, you should not try to shoot fast objects under poor or low-lighting conditions. Outdoors on clear days, you can record fast-moving subjects at shutter speeds of 1/2000 to 1/10000. On overcast days, shutter speeds of 1/250 to 1/1000 are recommended. While handholding the camera indoors, you may want to provide a more stable image. In this case, a shutter speed of 1/100 is recommended. Do not use a shutter speed of 1/250 or higher indoors unless you use additional artificial lighting.

CAMERA-HANDLING TECHNIQUES

In handling a motion-media camera, two words you must keep in mind are **STEADINESS** and **SMOOTHNESS**. When you are shooting motion media, the camera must be held steady, and deliberate camera movements (such as tilts, pans, dollies, zooming, and so on) must be made smoothly. When viewed, the images undergo a high degree of enlargement. Image movement caused by camera unsteadiness is distracting to the audience.

HANDHOLDING THE CAMERA

Very few division officers or chiefs in an imaging facility expect a cameraperson to shoot every scene from a tripod. Tripods cut down on maneuverability. When you are shooting uncontrolled action, "shooting from the hip" is common practice. During a fast-breaking event, it is usually the only way you can get the required coverage. When there is plenty of action in the scene, people do not notice the effects of excessive camera movement by the cameraman.

There are many occasions when freedom of movement and mobility in handholding the camera are essential. You can still produce acceptable motion-video coverage if you use your body as a camera support and

shock absorber. When handholding a camera, keep your arms in close to your body and your legs and feet spread about a shoulder width apart. Bend your knees slightly, keeping your weight on the balls of your feet. Lean your body backslightly for better balance. The camera should be over your knees for greatest stability. Hold the camera firmly against your face and place your hand in the camera strap.

Control your breathing while shooting. Each breath you take causes the camera to rise and fall slightly. The technique of taking a deep breath, exhaling a little, and holding the rest while you shoot is an effective way to help eliminate camera unsteadiness. When shooting a long scene, breathe as evenly and slowly as possible.

For added steadiness when handholding a camera, you can lean against something, such as a tree or a wall. Another method for handholding a video camera is to kneel on one leg and rest your elbow on the raised knee. When you must pan the camera, keep your elbow free and pivot your body at the waist.

When handholding a video camera, keep the following facts in mind to reduce the shakiness problem:

- Concentrate on handholding the camera steady while using a wide-angle lens. Your shakiness will be reduced considerably. When using a wide-angle lens, you must get as close to the subject as possible to provide an acceptable image size.
- Shakiness is directly proportional to the focal length of the lens. Slight shakiness may be almost unnoticeable with a wide lens. With a long lens, the same amount of shakiness destroys the entire scene. (See table 13-1.)
- Give yourself a steady platform. Before you squeeze the record button, inhale, then partially exhale. Now, squeeze. Do not pull or jerk the record button. Lean against a building, a tree, or the side of a car. Any support of this nature may provide more steadiness than free standing.

TRIPODS

A tripod can literally be considered the “basis” for most good motion-media products. To help you realize just how important a tripod is for shooting motion media, consider handholding a movie projector. You cannot hold the projector steady for any period of time. The picture weaves around on the screen and is very distracting to the viewers. The same result is created when a motion-video camera is handheld, but in this case, images within the picture area appear to weave

around because of camera movement. The image you see in the camera viewfinder is so small that you may not notice the camera movement. It is easy to think you are holding the camera steady. Bear in mind that the slightest amount of camera movement is magnified many times when the image is played back

While not all situations permit the use of a tripod, the use of a folded tripod as a unipod is preferable to shooting without camera support. Even the lightest weight, so-called “handheld” video camera produces much better results when supported adequately.

Camera steadiness is only one advantage of using a tripod. When using a tripod, you automatically take more time to compose and check scenes before recording them.

RECORDING FROM A MOVING VEHICLE

Sometimes you may have to record from a moving vehicle, such as a truck or a boat. For this type of assignment, the problem of holding the camera steady becomes even more difficult. In this situation you should handhold the camera, because a tripod transmits vibrations and movements from the vehicle to the camera. Keep your weight on the balls of your feet, and keep your knees flexed so you can sway and bend as the vehicle rolls, pitches, or bounces. Watch the horizon in the viewfinder. A tilted or wobbly horizon is very detracting when being viewed. When shooting from moving vehicles you should use a short focal-length lens and a fast shutter speed.

CAUTION

When shooting from a moving vehicle, you must follow all safety precautions. Use common sense, you do not want to jeopardize yourself or the video equipment.

PANNING

One of the most commonly abused motion-media techniques is panning. Panning is moving the camera from left to right or right to left. Moving it up or down is called tilting.

Only a few subjects require panning while you are actually taping. The use of panning can keep a moving procession, such as a marching unit in view, show a sweep of landscape, or show the relationship between objects or subjects.

There are definite and clear-cut rules and methods for panning. The very first is **PAN ONLY WHEN PANNING IS NECESSARY**. Panning a camera without a valid reason produces images that only irritate the viewer.

Making Pans

Making professional-quality pans takes practice and experience; however, you can easily gain this skill. One of the first and most important points to remember is to pan slowly and smoothly. Panning appears faster on the screen than it actually is; therefore, camera pans must be slow and consistent while maintaining a smooth, steady panning motion. When panning a moving object, you must keep pace with the object and allow for subject lead room. Panning too fast may make the viewer dizzy; therefore, it is advisable not to position the camera too close to the subject. The farther the subject is from the camera, the slower the pan required to follow the subject at a given speed.

Throughout the entire pan, the camera must be level without up and down wobbling. Whenever possible, rehearse the pan before you actually shoot. Know exactly where and when you want to start and end the pan. Practice the pan several times without recording on tape. Make the pan shot only after you can do it smoothly and accurately. The smoothest and best pans are made with the use of a tripod or other suitable camera support. Good handheld pans are always difficult to achieve.

Before you pan with a tripod, be sure the camera is absolutely level. Check the camera for level throughout the entire arc of the pan with a spirit bubble level located on top of the tripod head.

To produce better pan shots, position yourself comfortably for the end of the pan. Then, keeping your feet in this position, "wind" yourself around to the start pan position. As the pan progresses, "unwind" into the most comfortable position for a smooth stop. When using a tripod, be careful not to bump into the tripod as you are shooting.

Tilting the Camera

Moving a camera up and down vertically is called tilting. Tilting is useful when you want to photograph tall structures in one shot or to follow action, such as a parachute jumper.

Most of the rules that apply to horizontal panning apply equally well to tilting. As with horizontal panning,

tilting should be used only when stationary shots cannot accomplish the desired effect.

A tilt should be made slowly and smoothly. Know where and when you want to start and end the tilt. Usually, you start and end a tilt with a stationary shot.

To photograph a tall building or object, you should normally start the tilt at the bottom and move up. This is the way people naturally look at tall objects. There may be times, however, when you may start a tilt at the top and move down; for example, you might show flames coming out from the top-floor windows of a skyscraper, then tilt down to show the fire trucks arriving. When you are following action with a tilt, the type of action determines the direction of tilt. Also, as with a horizontal pan, you should show enough of the surrounding area so the audience can associate the subject with its location.

SHOT VARIETY

One of the great advantages of motion media is that it involves the viewers in the action. Viewers feel that they are there and participating in whatever is happening on the screen. They can be made to feel that they are moving along with the action as it develops, they become even more involved. Changes in the camera angle permit the viewers to see the same subject from several different positions, as though they were moving within the scene. This adds variety and makes the images they see more interesting because something is a little different about each one. However, be careful to keep these camera-angle changes from confusing the viewers. If the changes are so different that they seem to be in other locations, the viewers lose their orientation. When choosing the camera angle, be sure you present the subject from the best possible vantage point and create the proper psychological effect.

MOVEMENT

When you can control the angle at which the action passes across the camera lens axis, your shots will show the apparent speeding up or slowing down action. Objects moving at right angles to the lens (across the lens axis) appear to be moving faster than objects approaching the lens directly or going straight away from it. You can vary the apparent speed of objects by selecting various camera angles.

Good motion-media footage needs movement. Movement can take place in front of the camera, of the camera itself, and of course in the picture itself. The

movements necessary for good motion video are divided into three categories:

- Primary movement (movement of the subject)
- Secondary movement (movement of the camera)
- Tertiary movement (movement produced by successive shots from different cameras)

Primary Movement

Movement in front of the camera, usually that of the subject, is called primary movement. Primary movement toward or away from the camera is stronger than lateral movement. More emphasis is created by having the subject move toward or away from the camera. Exits and entrances are more impressive when they occur toward or away from the camera. Lateral movement of a subject should always be lead with the camera. The viewer wants to know where the subject is going, not where it has been.

Secondary Movement

Secondary or camera movement is normally done in television studios. Secondary movements include: pans, tilts, dollies, zooms, trucks, and pedestal movements. Secondary movements are used to follow primary movement, to change or adjust picture composition, or to emphasize or dramatize something. Secondary movements must have a valid purpose. Do not make them just for something to do.

DOLLY.-A dolly is a piece of equipment that normally requires a small crew to operate. You can dolly-in to increase the size of an object gradually on the screen or dolly-out to decrease the size of the object on the screen. Likewise, dollying decreases or increases the field of view. A zoom lens can be used for the same purpose as a dolly. During a zoom, the camera does not move; therefore, perspective does not change as it does during a dolly.

TRUCK.-A truck is a piece of equipment that is basically a tripod with wheels. The camera is used to follow lateral subject movement or you could truck the camera along the objects. In either case, camera-to-subject distance does not change.

PEDESTAL.-A pedestal is used to either raise or lower the camera. Pedestalling can provide the audience with a view looking down on the subject or up at the subject. A pedestal may also be used to compensate for tall or short camerapersons or subjects.

Tertiary Movement

Tertiary movement results from a sequence of shots from two or more cameras. When two or more cameras are used, you can select from a variety of pictures and determine which picture is to be recorded and when. When more than one camera is used, you can easily emphasize, de-emphasize, show action and reaction in rapid or slow succession. The effect of tertiary movement is accomplished through videotape editing.

COMPOSITION

Video images, like still photographs, are subject to the aesthetic rules of picture composition. There are, however, factors peculiar to video that more or less influence television composition. These factors are as follows:

- The small monitor requires objects to be shown relatively large so they can be seen clearly on a small screen. You must shoot more extreme close-ups (ECU), close-ups (CU), medium shots (MS), few long shots (LS), and very few extreme long shots (ELS).
- The 3:4 aspect ratio of the picture cannot be changed so all picture elements must be composed to fit it. The aspect ratio is the ratio of picture height to width. There is no vertical format in television. You must always think horizontal format.
- The video camera is the eyes of the viewer. Therefore, camera movement, as well as the static arrangement of elements within the frame, must be considered.
- When shooting uncontrolled action, you may not be able to predetermine composition. Sometimes all you can do is correct certain compositional errors.

In motion media, the picture on the screen is referred to as a shot. A shot is one continuous camera run from the time the recording starts to the time the recording stops. A shot may last a few seconds, several minutes, or the entire program. A motion-video cameraperson must always think in terms of shots.

Most rules of composition in still photography apply equally well to composition in motion media. Composition was covered earlier in chapter 5. The

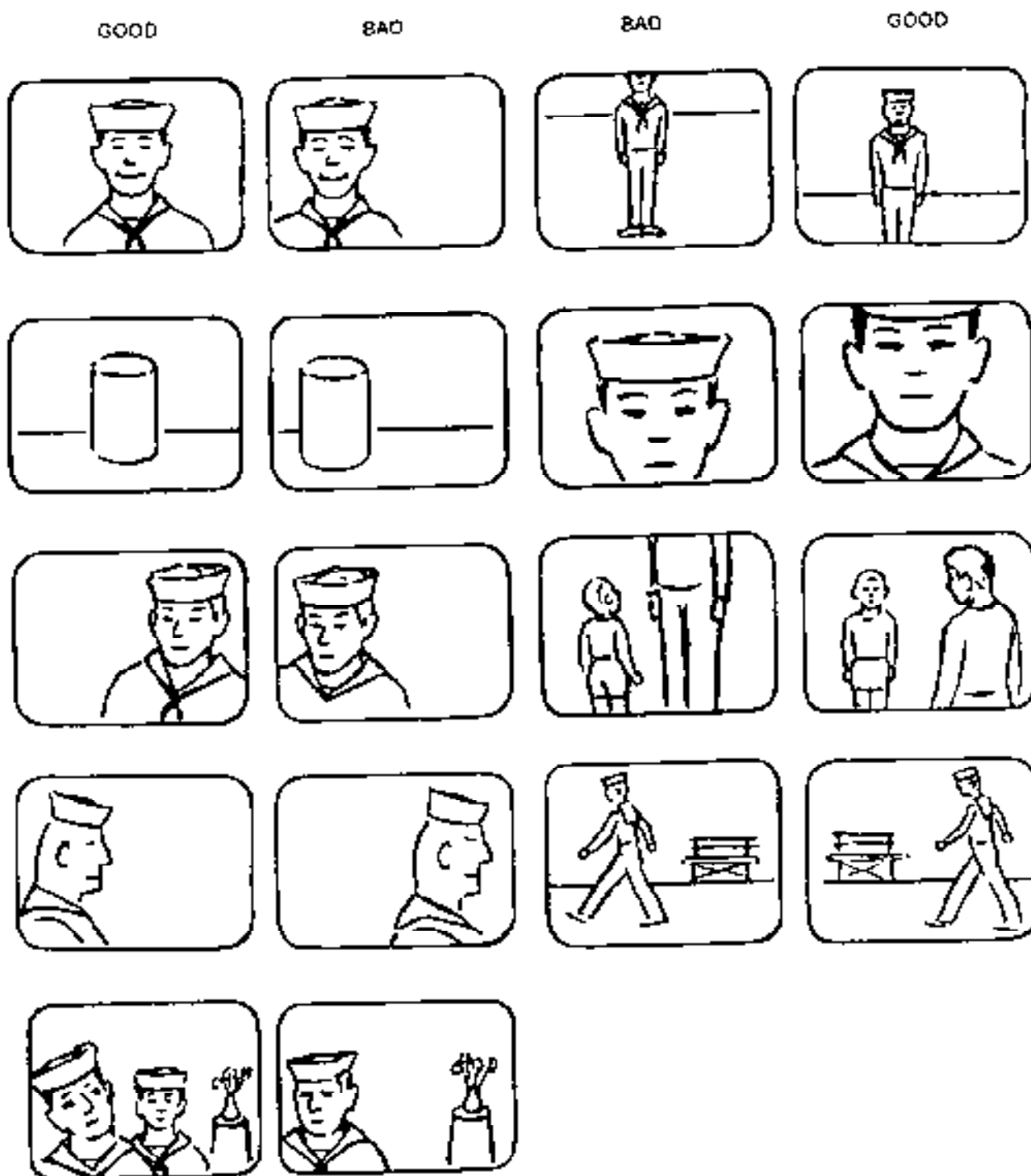


Figure 13-9.-TV framing.



Figure 13-10.—Long shot, medium shot, and closeup shot progression.

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simple line drawing examples of TV framing (fig. 13-9) indicates how to stage and show elements within the confines of the small 3:4 fixed aspect ratio of a television picture.

Use high- and low-camera angles with caution. High angles tend to shorten the legs of a person. Low angles may distort the body and face of the subject. Of course, watch for objects that seem to be growing out of or are balanced on a person's head.

Area of Talent Included

Most motion-media assignments involve people. You may find it convenient to identify people shots by the section of the body that is included in the frame. The person's head is usually in the top of the picture; therefore, shots vary according to the lowest part of the talent shown at the bottom of the screen. Thus the terms used to describe various people shots are as follows: full figure shot, knee shot, thigh shot, waist shot, bust shot, head shot, tight head shot.

Number of People Included

The shot designations that are easiest to remember are the ones that refer to the number of people included in the picture. When only one person is to be shot, it is a one-shot. Obviously, a shot that shows two people is a two-shot, three people make a three-shot, and so on; however, when five or six people are pictured it is called

a group-shot. A crowd-shot is when a large group of 20 or more people is being framed.

BASIC SEQUENCE

During motion-media recording, you can change the image size by changing the camera-to-subject distance or by using a zoom lens (which also changes the field of view).

When recording an event on motion media, there are three basic shots or sequences you must use: long shots (LS), medium shots (MS), and closeup shots (CU) (fig. 13-10). The type of shot being used can limit or increase the amount of visual information presented to the viewer. Long shots generally establish a location. A medium shot is used primarily as a transition between a long shot and closeup shot. Closeup shots create impact and provide more detail and less visual information pertaining to the subject's surroundings.

Shot classifications can be broken down into five categories: extreme long shots, long shots, medium shots, closeup shots, and extreme closeup shots.

Extreme Long Shots

An extreme long shot (ELS) is used to portray a vast area from an apparently very long distance. An ELS is used to impress the viewer with the immense scope of the setting or scene. An ELS is best usually when made with a stationary camera. Camera panning for an ELS

should be avoided unless panning is needed to show more of the setting or to help increase audience interest in the film. An extreme long shot can be used to give the audience an overall view of the setting before the main action is introduced. The use of an ELS is an effective way to capture audience interest from the start. Extreme long shots should normally be taken from a high vantage point, such as from a tall building, a hilltop, or an aircraft. Extreme long shots are used primarily in films and are seldom used in video productions.

Long Shots

A long shot (LS) shows the entire scene area where the action is to take place. The setting, the actors, and the props are shown with an LS to acquaint the audience with their overall appearance and location within the scene. An LS is used to establish all elements within the scene so the audience knows who and what is involved and where they are located. An LS, therefore, tells where. It establishes where the action is taking place.

The subject's entrances, exits, and movements within a scene should normally be shown with an LS when their locations in the scene are significant. Following actors from location to location within a scene area with closeup shots confuses the viewer about the location of the subject within the scene.

The composition for an LS is usually "loose," giving room for the subject to move about. While this may make identification of actors somewhat difficult, an LS is usually short and the subjects will be identifiable in closer shots.

Medium Shots

A medium shot (MS) is usually used between a long shot and a closeup shot. After the scene location has been established with an LS, the camera is moved closer to the main subject or a longer focal-length lens is used to bring the main element of the scene into full frame or near full-frame size. A medium shot tends to narrow the center of interest for the audience and answers the question "what."

In an MS, actors are usually photographed to show them from the waist up. An MS is normally sufficient to show clearly the facial expressions, gestures, or movements of a single actor or a small group of actors.

With an MS, movement of the subject can be followed with a pan or other camera movement while still showing enough of the surroundings so the audience does not become disoriented. Motion-media coverage should normally progress from a long shot, to a medium shot, to a close-up, then back to a medium shot. This

reestablishes the scene location or the actors within the scene.

Closeup Shots

The closeup shot (CU) fills a frame with the most important part of a scene. The CU should include only action of primary interest. The portion selected of an overall scene, such as a face, a small object, or a small part of the action, may be filmed with a closeup shot. Close-ups give the audience a detailed view of the most important part or action within a scene. Close-ups also help to build audience interest in the film. The CU shot can be used to "move" the audience into the scene, eliminate nonessentials, or isolate a significant incident.

As a motion-media cameraperson, one of the strongest storytelling devices you have are close-ups. Closeup shots should be reserved for important parts of the story so they deliver impact to the audience.

Extreme Closeup Shots

Very small objects or areas or small portions of large objects can be photographed with an extreme closeup shot (ECU), so their images are magnified on the screen. Small machine parts, such as calibrations on a ruler or a match at the end of a cigarette, can be very effective when shown on a full screen in an ECU.

Do not forget, you must change camera angles between shots within a shot sequence.

CONTINUITY

Motion media should present an event in a continuous, smooth, logical and coherent manner. When this goal is reached, the film has good continuity. Continuity plays a major role in the success or failure of a project. Without good continuity, a motion video would be nothing more than a jumbled mass of unrelated still-pictures. On the other hand, good continuity in a film encourages the audience to become absorbed in the film. Continuity then is the smooth flow of action or events from one shot or sequence to the next. Continuity is the correlation of details such as props, lighting, sound level, image placement, and direction of movement across the screen between successive shots of the same piece of action.

The shooting of all motion media should be based on a shooting plan. This plan may be as simple as a few scribbled notes, or it can be an elaborate script. The better the shooting plan, the better your chances of success in achieving good continuity. Another way you can learn to create good continuity is to watch and

analyze “Hollywood” movies. The next time you see a Hollywood production, notice how the action flows smoothly from shot to shot and from scene to scene. Try to visualize the techniques and camera angles that were used. Then, on your next assignment, plan them first, then use some of these professional techniques to achieve good continuity.

The first step toward good continuity in your films is the planning beforehand. You should plan your continuity and put your ideas on paper. Do not get the idea that all your shots have to follow a written script. News events, and other uncontrolled action, are usually shot without a script; nevertheless, you should be able to anticipate action and prepare a mental script. The information you must know before starting to shoot is what scenes and actions are needed to satisfy the requestor.

SCREEN DIRECTION

In motion-media photography, the direction a person or object either looks or moves can cause continuity problems. The direction a person or object looks or moves is called screen direction. When a look or move in a particular direction is unaccountably changed from one shot or scene to another, the continuity of the film is disrupted. Any change in screen direction must be explained or the subject may suddenly change screen direction and appear to be going the wrong way.

How the camera “sees” the action—not how the action actually appears—is important. In other words, the audience judges the action by its screen appearance, not by the way it actually appeared during filming.

There are four types of screen direction. They are as follows: neutral, constant, contrasting, and static.

Neutral Screen Direction

Neutral screen direction movement shows subjects moving toward or away from the camera. Because neutral screen direction movement is nondirectional, it may be used or intercut with scenes that show movement in either right or left directions. The following are neutral screen direction movements.

- Head-on and tail-away shots show the subject moving directly toward or away from the camera. For an absolutely neutral shot, only the front or back of the subject should be shown. When one side of the subject is shown, the shot will show some direction and not be absolutely neutral. Entrance and exit shots also show direction and therefore are not neutral.

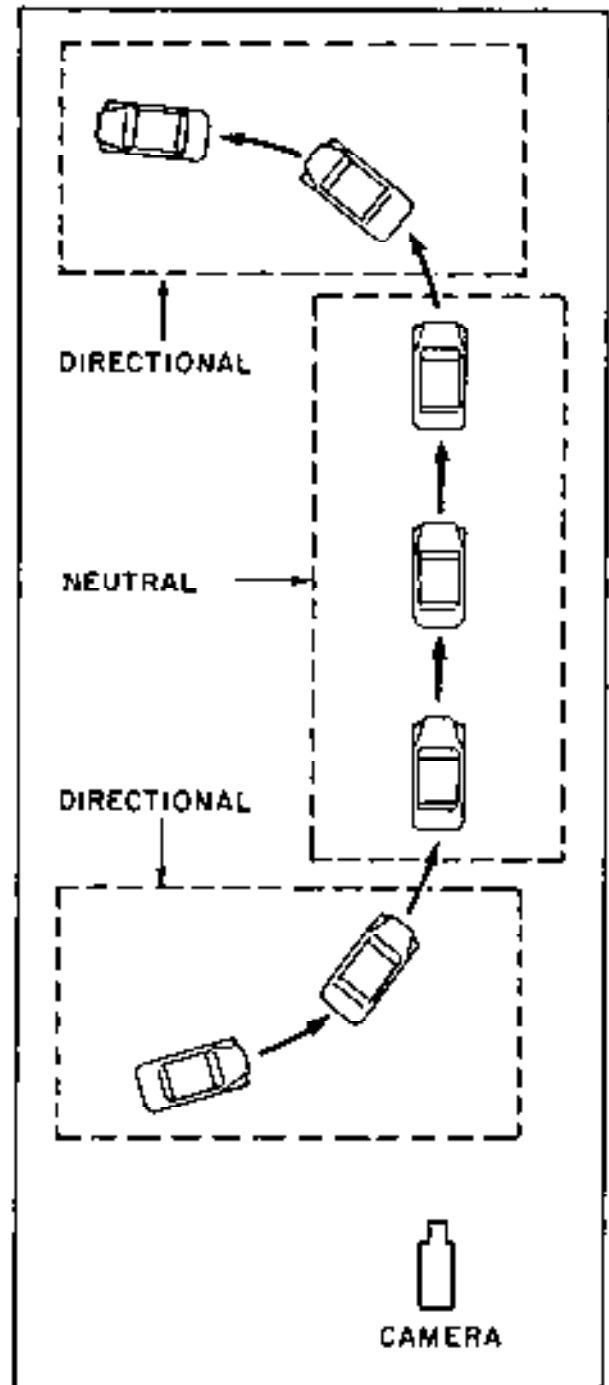


Figure 13-11.—Showing a change in screen direction.

A shot can start as a neutral shot and transition into a directional shot, or vice versa; for example, start with a head-on shot of a car and continue filming as the car turns to the right and exits the frame, or start with a direction showing a shot of the car entering the frame from the left, and continue filming as the car turns left to a tail-away neutral shot (fig. 13-11). These types of



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Figure 13-12.—Showing change of screen direction.

shots can be used to change screen direction by temporarily showing a neutral condition between two shots when the subject moves in opposite directions.

- Tracking shots are accomplished by moving the camera directly ahead or behind the subject, either leading or following the subject, respectively.

As with head-on or tail-away shots, tracking shots are neutral only when the subject is not shown entering or leaving the frame and when only the front or back of the subject is shown.

- High-or-low camera angle shots—The subject moves directly toward and under or over the camera so, the subject exits at either the bottom or the top of the frame. Examples: a train, shot from a high-camera angle, may move directly under the camera and exit at the bottom of the frame, or an aircraft may take off and move over a low-angled camera and exit at the top of the frame.

- Subjects traveling abreast shots—Two or more subjects move directly toward the camera and split up to exit the frame on both sides of the camera, or enter the frame on both sides of the camera and join up, moving directly away from the camera.

A neutral shot inserted between two shots of a subject moving in opposite cross-screen directions distracts the audience momentarily to allow for the change in direction.

To open a sequence, you can use a head-on shot to bring a moving subject from a distant point toward the audience. To close a sequence, you can use a tail-away shot of a subject moving away from the camera. Shots, such as these, present moving images that increase or

decrease in size and have more of an effect on apparent depth than do cross-screen movements.

Head-on and tail-away tracking shots add variety by offering a change from the usual three-quarter side shots. Head-on shots tend to produce greater audience impact because the audience is “placed” dead center with the action advancing toward them.

Constant Screen Direction

Constant screen direction shows subjects moving in one direction only. When one subject moves in the same direction through a series of shots, progression is represented.

Once screen direction has been established, it should be maintained until a change in direction can be explained. When a shot suddenly shows a subject traveling in the opposite direction to the previous shot, the audience will get the impression that the subject has turned around and is heading back to the starting point. Any change in screen direction must be explained.

One way to change screen direction (for example, a head-on to a tail-away) and explain the change to the viewers is to film the subject in the following sequence. First, record a head-on shot. Secondly, cut the shot to a three-quarter angle of the subject moving left to right. Next, cut the three-quarter angle to a view of the subject crossing the screen, then to a rear three-quarter angle of the subject. Finally, cut from the rear three-quarter angle to a tail-away shot (fig. 13-12).

A way to maintain constant screen direction is to use the action-axis technique. An action axis is nothing more than an imaginary line created by subject movement.

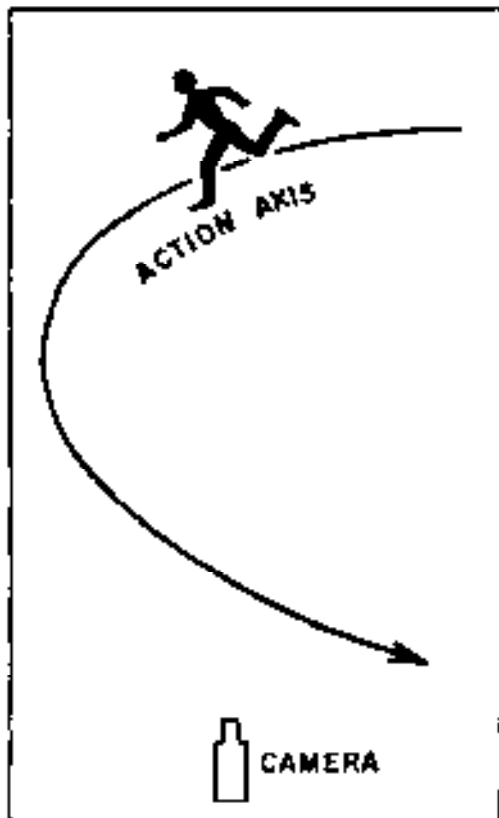


Figure 13-13.—Subject crossing the action axis.

When the camera is positioned on the same side of the action axis each time it is moved for a series of shots, the screen direction remains the same throughout the series. The relationship between the camera and subject movement or action axis remains the same if the camera does not cross the action axis. Once established, screen direction can be maintained by keeping the camera on the same side of the action axis.

When constant screen direction cannot be maintained, any change in direction **MUST** be visually explained to the audience. Constant screen direction changes can be explained in the following ways:

- ◆ Show the moving subject actually changing direction. This is the most effective way to change screen direction because the audience sees the subject change direction and there is no doubt in their minds how it took place.
- ◆ Film the moving subject crossing the action axis on a corner or curve. This permits the subject to exit the

frame on the “wrong side,” thus changing screen direction (fig. 13-13).

- ◆ Use a reaction closeup shot of an observer viewing the movement in the new direction. A reaction close-up serves as a neutral shot and distracts the audience, so the change in screen direction can take place. A reaction close-up, in this situation, could be a close-up of an observer’s head turning to follow the movement of the previous scene. The head of the observer should turn as though the action is taking place behind the camera, thus putting the camera between the action and the observer.

Contrasting Screen Direction

Contrasting screen direction is used to show subject movement in opposite directions. This can be shown by a subject moving toward a distant destination and then returning to the starting place. An example would be a sailor who leaves the ship and walks in a left to right screen direction to town. Therefore, the ship-to-town direction is established as left to right. Movement of the sailor to the right is toward the town and movement to the left is toward the ship. The viewer will associate the sailor’s walking in a right to left screen direction as returning to the ship. Once the direction of travel is established, you must maintain it.

Contrasting screen direction is also used to show opposing subjects moving toward each other. An example would be two warships that are headed into battle. The first ship is shown steaming from left to right, and the second ship is shown steaming from right to left. This pattern gives viewers the impression that the ships are closing the distance between them and will soon meet.

Static Screen Direction

Static screen direction refers to the direction that subjects look or face. Screen direction must be established and maintained even when the subject does not move about within the scene. The direction in which the subject looks should match throughout a series of consecutive shots. The direction the subject faces can be different from the direction that the subject looks; therefore, the static screen direction is the direction in which the subject is looking. To maintain static screen



Figure 13-14.—To maintain static screen direction, do not cross the action axis with a camera.

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direction, the camera operator must remain on one side of the action axis (fig. 13-14).

CUT-IN AND CUTAWAY SHOTS

In filming uncontrolled action, it is almost impossible at times to film overlapping action. This is where cut shots come into play. Cut shots are extremely valuable because they provide a form of audience distraction. In addition, the cutaway can account for lapses of time and stimulate audience interest; therefore, if you shoot plenty of cutaways and cut-ins, you have passed a major stumbling block in shooting uncontrolled action. Shooting a football game is a good example of uncontrolled action; but can you imagine how boring it would be if there were no cutaways or cut-ins? An audience would soon get tired of seeing nothing but football plays. By using different scenes, you can show

just the highlights of the game and the audience will go away satisfied, feeling that they have seen the entire game.

Cut-ins and cutaways are related to the primary subject or action. They show something that may or may not have occurred simultaneously with the primary action. Both cut-ins and cutaways fill gaps between scenes where the action does not match. The use of cut-ins and cutaways can account for a lapse of time or they are used to create or enhance the mood of a film.

Cutaway shots are scenes that “cut” away from the action. Crowds, cheering fans, cheerleaders, and sideline action are all examples of cutaway shots. Ideally, cutaways should smooth out the continuity of the film, so the audience does not realize that some of the action that took place on the field has been removed from the film.

A cutaway also can be used when you want to condense an extended flow of action; for example, if you start a sequence with a closeup shot of the time clock indicating 12 minutes left in the quarter, then cut to the primary action on the field for about 10 seconds, then cut back to the clock indicating 3 minutes left—the elapsed time of 9 minutes would be indicated to the audience.

An example of a cut-in is a close-up of one player's foot as he kicks the ball. This close-up could have been shot at any time; however, by inserting the cut-in into the film during editing, the audience feels that the kick actually happened during the game.

The difference between a cut-in and a cutaway is simple. When filming the football game, the camera operator “went in” and took a close-up of the kicker's foot as he kicked the ball. The operator of the camera cut-in to the action. However, when the camera operator shoots a close-up of a fan's foot kicking another fan who had been rooting for the wrong team, that is a cutaway, because it cut away from the primary action of the game. Cutaway shots represent secondary action. Cut-in shots represent primary action.

CONTROLLED ACTION

As the name implies, in controlled action you can control all aspects of a production. This includes actors, their actions, the set lighting, and sound recording, if any. You usually work from a well-developed script that includes all the details. If the actors speak, the dialogue is in the script. If the action is described by a narrator, the narration is in the script. If the film is silent, the titles appear in the script. Examples of controlled-action films include training films, some documentaries and historical records, and many publicity or recruiting films. Controlled action, motion-media productions are produced only by personnel with specialized “C” school or university training. As a nonspecialized Photographer's Mate, you will be faced with uncontrolled or semicontrolled action elements of a production or film.

UNCONTROLLED ACTION

In a controlled-action situation, everything is normally written in the form of a detailed shooting script. Predictable filming is performed and there are few crises, except the occasional human oversights and mechanical malfunctions.

The other world of motion-video recording (uncontrolled action) is full of crises and surprises.

Success primarily is due to good reflexes, accurate guesswork, and quick thinking. Careful planning is not the most significant factor. Most of your motion-media assignments will be uncontrolled or semicontrolled action.

Your success as a maker of uncontrolled-action films depends on your knowledge of the capabilities and operation of video equipment. You must also possess a high level of technical skill. There is neither time nor opportunity for research or practice while doing this kind of assignment. You must be prepared in advance. News, sports, special events, and on site-coverage of ongoing activities make up the bulk of this type of assignment. Another class of uncontrolled action is the documentation of events that follow a known course or pattern, such as parades and ceremonies. These are called semicontrolled, because you know in advance approximately what is going to happen, even though you cannot influence it for recording purposes. Both types of assignments are challenging, exciting, and usually welcomed by confident camerapersons. But, they can be “unfortunate experiences” for those not properly prepared to cope with them.

PREPARATION FOR FILMING UNCONTROLLED AND SEMICONTROLLED ACTIONS

Obviously you cannot develop a specific, detailed plan for shooting uncontrolled or semicontrolled action. You must get as much information about the assignment as possible and in as far in advance as possible. This information helps to provide an estimate of requirements for equipment, supplies, scheduling of personnel, transportation, camera positions, lighting, and other technical details.

Whenever you are assigned to cover VIP arrivals, award presentations, or special events, you should immediately contact the person or agency in charge of the project. This person is usually the public affairs officer (PAO). The PAO can furnish you the full scope of your assignment and provide the following basic information:

- Name and rank or title of the person(s) involved
- Place and time of arrival
- Complete schedule of activities

When possible, you should personally inspect the location and route of the proposed action (site survey). If this cannot be done, try to get drawings, maps, plans, or photographs of the area. Eyewitness descriptions or

pictures of similar events also may be helpful. Ask questions about the location of the subject, the type and direction of movement, and the sequence of actions to be recorded.

With this information, you can draft a rough plan. By working closely with the project officer, you should be kept reasonably well informed and can arrange your shooting in a logical order. Be careful, however, not to “plan yourself into a trap.” Expect last minute changes in your plan, and, therefore, keep alternative plans in mind and ways they can be put into effect quickly.

Next, determine shooting requirements and the number of cameras and people you need. Check probable camera locations for the long, medium, and closeup shots. Determine the amount of tape you require, and consider the possibility of some unplanned requirements. Determine whether you will need transportation and additional equipment.

A hypothetical assignment: The lab has received the following orders: “The Chief of Naval Operations and his party are expected to arrive aboard your ship tomorrow. The flag requires complete photographic coverage of all official activities of the CNO and his party while on the ship.” The division chief has assigned you to cover the motion media.

After you check with the officer in charge of the event, you find that the CNO and his party are expected to arrive by aircraft at 1300 hours. The party consists of the Chief of Naval Operations and three aides. The purpose of this visit is to inspect the ship and to present several awards. The CNO and his party plan to depart at 1700 the same day.

With this information you can now plan your shooting outline. In an event of this kind, you cannot expect to stage or control many shots.

The following shooting outline is an example of what you might come up with:

Scene 1: Aircraft (A/C) with CNO landing.

Scene 2: Side boys, flag officer, and CO on deck in front of island.

Scene 3: A/C taxis to island.

Scene 4: CNO’s party disembarks A/C.

Scene 5: Flag officer and CO greet CNO.

Scene 6: CNO inspects side boys.

Scene 7: LS, MS, and CU of CNO presenting awards.

Scene 8: CNO makes speech

Scene 9: CNO and party tour ship.

Scene 10: CNO and party return to A/C.

Scene 11: A/C taxis to fantail for deck launch.

Scene 12: A/C takes off.

Now, how do you get the coverage?

In scene 1, you could be in a high position for an establishing shot showing the flight deck with the A/C landing. After the A/C lands, you move down to the flight deck and shoot scene 2, MS, of the side boys, the flag officer, and the CO taking their positions on deck to greet the CNO. Scene 3 is an LS showing the A/C taxiing to the island. For scene 4, shoot an MS of the CNO and his party leaving the A/C. Scene 5 is a CU of the flag officer and CO greeting the CNO. Scene 6 starts with an LS of the CNO inspecting the side boys. Circumstances permitting, move in for an MS and CU of the inspection. Scenes 7 and 8 should be easy to shoot because of the time it takes to read citations, make awards, and give a speech. This should allow plenty of time for you to move about and get long shots, medium shots, close-ups, and cut shots. Follow your judgment and intuition for shooting scenes 9, 10, and 11. Scene 12 is your closing shot. Again, shoot from a high position to show the flight deck. Pan the A/C and follow it until it is out of sight.

The shooting outline not only serves as a “program” for planning the sequence of coverage, but it also provides a basis for determining camera placement, movement, and shot framing.

RECORDING GRAPHICS

Graphics have many applications, such as title cards, cast lists, maps, tables, charts, photographs, and inserts. Graphics should not be treated casually. Without precautions, graphics can become unsharp, confusing, tilted, distorted, and incomplete. Much of the graphics and text used in motion-video productions are created on a character generator. A character generator is an electronic device used to create words or graphics and electronically inserts them over a video picture. When a character generator is not available, graphics must be recorded by a camera.

When you are shooting graphics that will be viewed on a monitor, the camera lens must be centered and parallel the graphic. The graphic and camera must be level. Your framing must be correct.

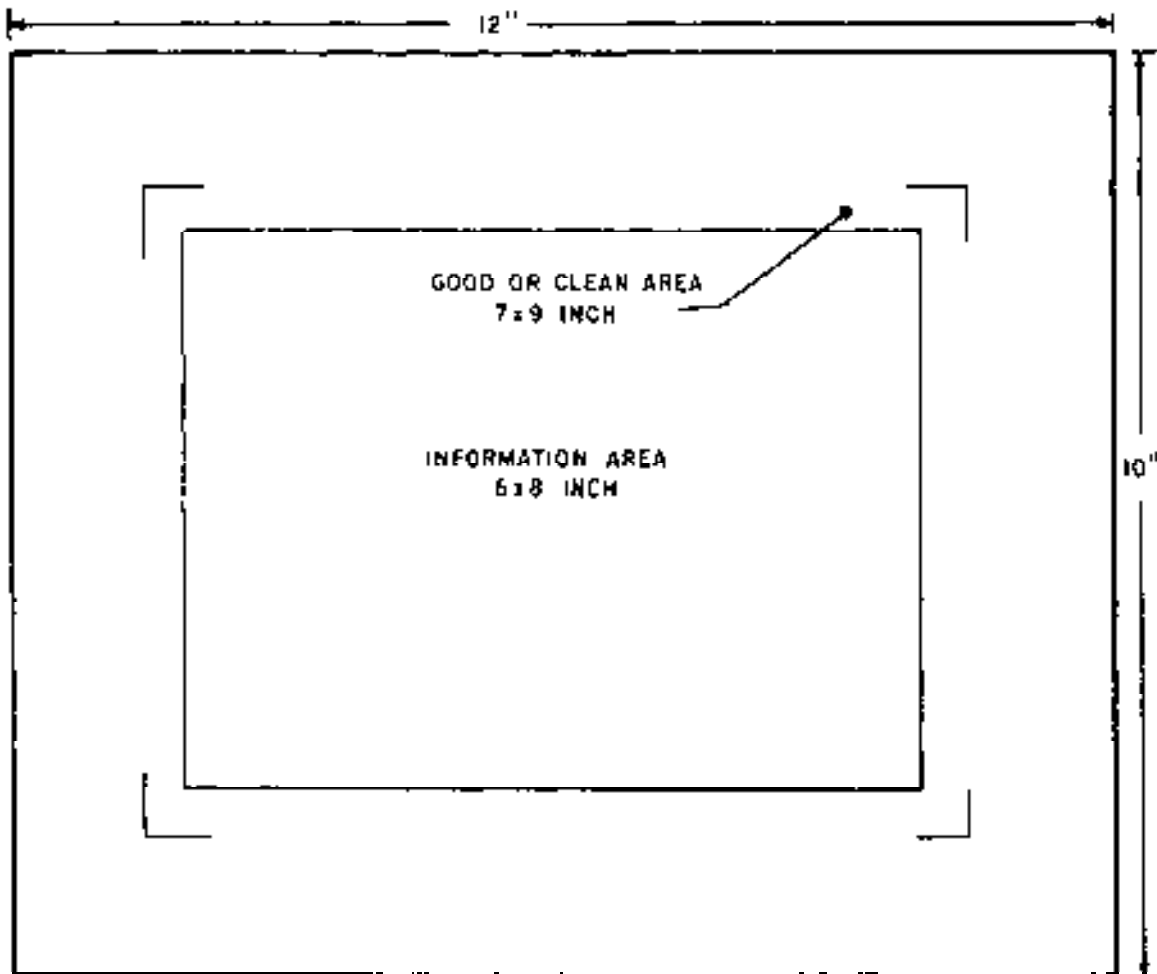


Figure 13-15.—The 3:4 ratio used for a video graphic.

Get in close enough with the video camera to show clearly all detail, but not so close that some of the information area is lost. Avoid using a wide-angle lens. Besides the possibility of camera shadows falling on the graphic, distortion is likely to occur and will be most noticeable when panning over the graphic. A longer focal-length lens overcomes the distortion problem, but is less smoothly panned.

LIGHTING

Because light reflections can obscure detail on a shiny graphic, the experienced graphic artist and photographer will avoid glossy materials and glossy photographs. However, when it is causing objectionable reflections, the graphic can sometimes be tilted slightly to help clear them; otherwise, relighting or surface dulling may become necessary. The lighting for a TV graphic is similar to lighting reflection originals in copy

work. Graphics must be flat. Unmounted, warped, or curved surfaces easily show unwanted reflections.

SAFE TITLE AREA

In the production of slides for use as television graphics, important picture information must be confined within the area of the TV monitor.

Figure 13-15 is drawn in proportion to a 35mm film frame and shows the safe title area, maximum transmitted area, and film frame.

IDENTIFYING RECORDED IMAGE CONTENT

If you were notified that you won a brand new Jaguar or Lamborgini, you would probably be ecstatic. If you were presented with a truckload of unidentified, assorted parts and told that you now had everything

COMMAND/UNIT		
CAMERA OPERATOR	CAMERA NO.	DATE
TAPE/ROLL NO.	SUBJECT	

Figure 13-16.—The slate.

required to put the new car together, you probably would not be entirely grateful. Maybe you could assemble it (if you were an experienced mechanic), but you know that more information would save you time, frustration, duplication of effort, and help tremendously toward a successful outcome. On the other hand, if every part were clearly identified and the exact relationship to every other part was unmistakably described, you would certainly appreciate the gift much more. Being faced with several thousand feet of unidentified videotape is very much the same kind of situation.

The biggest problem encountered by imaging personnel in the Department of Defense during Operation Desert Storm was the lack of identification of exposed imagery. There were literally boxes of film and videotape lining the passageways in the Pentagon. Most of this imagery was of little value because it was not identified, or it was labeled inaccurately.

Accurate records are almost as important as good video coverage in achieving a professional product. Imaging products must be labeled, so the subject matter and subject location are easily identifiable on the tape. Often, there is no opportunity for personal contact between the cameraperson and editor; therefore, records identifying the filmed image content are the only information available. Logically, the better the records, the more useful the videotape. The opposite rule is also true. Inaccurate records can make the video coverage useless. Do not let that happen to your work.

SLATING

The slate you use to identify video scenes may take several forms. In emergencies you may even write scene identification on a scrap of paper and film it before shooting the scene; however, in most instances, your slate is more formal. Your regular slate is made to show whatever information is necessary. Generally, this includes the command or unit, title or subject, name of the cameraperson (identifies who is responsible for filming or videotaping the good or bad footage), date, location, and camera serial number (fig. 13-16). If you are part of a large organization that has several crews, then also include the unit number. In short, the slate should contain information needed for proper identification of each scene on your film.

The slate may actually be a piece of slate with the data written or lettered on it in white chalk. Quite often the "slate" is white with an acetate surface, and the data is written on it with a black grease pencil. When you slate a scene, hold the slate in front of the camera lens and record it for about 10 seconds for videotape or 3 feet for motion-picture film.

Of the information you place on your slate should be clearly printed in large, block letters. Film your slate so it fills the complete frame. If your slate is not full frame, the lettering may be too small to read when the tape is viewed.

[illegible]

Figure 13-17.—Video/Film Data Sheet.

If you do not have time to film the slate at the beginning of the scene, do it at the end of the scene. This is known as tail slating. Record the slate upside down, then rotate it right side up when tail slating. This shows that a tail slate was used; otherwise, the viewer might assume that it is associated with the scene following it

on the tape. When recording without a script, you have no scene numbers to slate for each scene; therefore, for identification purposes, you slate only at the beginning of each tape. If for some reason you cannot slate at the beginning, tail slating applies.

Although you, the camera operator, do not derive any particular value from the slate, the person editing your film becomes frustrated, if not completely lost, when slates are not included. This is particularly true when your scenes are not shot in the same order as the script is written. The task of locating individual shots is almost impossible unless each scene is slated when it is originally filmed. You can understand now why you must slate each scene when shooting from a script.

VIDEO/FILM DATA SHEET

Video/film data sheets are valuable to you (fig. 13-17). By looking at them you can tell the scenes that have been shot and those that still need to be done. Their main value, however, is to the editor. Without data sheets, the editor does not know the order in which the scenes were shot. Notice how the slate and data sheets work hand in hand. For a large project, the editor can check the data sheets and find a particular tape or scene easily. By screening just one videotape, the editor can spot the scene by checking the slate images. Imagine looking for a particular scene, at random, when it could be anywhere in a dozen or more tapes. Many hours are wasted when your data sheets are not properly prepared. The data sheet also may prevent accidental use of the wrong footage. If a scene was refilmed to correct an error, both the rejected and corrected versions of the same scene can be identified.

VISUAL INFORMATION CAPTION SHEETS

A Visual Information Caption Sheet, DD Form 2537, must accompany all products forwarded to a Still and Motion Media Records Center. The use of a visual information caption sheet ensures that all necessary caption information is available and standardized so it can be entered into computer data bases at the records center.

The instructions necessary to complete DD Form 2537 are printed on the back of the form. Because the completed form provides the cover story for the motion video product, it is important for you to provide accurate

VISUAL INFORMATION CAPTION SHEET			
1. PROJECT TITLE/NAME OR NUMBER		2. PROJECT LOCATION	
3. DATE RECORDED			
4. CAMERATION PHOTOGRAPHIC			
5. REQUESTING ORGANIZATION			
6. MEDIA TYPE & FORMAT			
7. ORIGINAL MEDIA LOCATION			
8. VIDEO PLAYBACK FORMAT			
9. ORIGINAL SECURITY CLASSIFICATION			
10. IMAGER RECORD LINE			
11. VIDEO NUMBER/ISSUE			
12. DATE/THROW OF PROJECT LOCATION ACTION OR ITEM NO. RECORDED			
13. ORGANIZATION UNIT/PROJECT/PROJECT ACTION OR ITEM			
14. SUBJECT/PROJECT OR ACTION/PROJECT ACTION OR ITEM			
15. NAMES OF ALL PERSONS/ORGANIZATION PROJECT/PROJECT ACTION OR ITEM			

DD Form 2537, MAR 89 14 07201 00a 9432

Figure 13-18A.—Visual information caption sheet (front).

information and as much detail as possible about the recorded event (fig. 13-18).

VIDEOTAPE CARE

The performance of videotape is often directly related to the care and proper maintenance it has or has

not received. Temperature extremes should be avoided when storing tape between recording and playback. Wide temperature variations can result in a tremendous amount of stress on the innermost tape layers caused by dimensional changes. If a tape has been in storage at sub-zero temperatures, for example, you must

18. EXTENSIVE DESCRIPTION OF PHOTOGRAPHY OR SCENES: (If not applicable, enter "N/A")	
19. COPYRIGHT OR OTHER RIGHTS IDENTIFICATION (if applicable)	
INSTRUCTIONS:	
Items not listed are self-explanatory. ITEM 2. Enter the location where the photograph(s) film or video depicted on this caption sheet were taken. 5. Enter the organization which requested the imagery. 6. Describe media being forwarded to U.S. Records Center by entering an "X" in the appropriate box or boxes. If 6 is marked, explain in item 19. 7. Describe media in which imagery was or is to be recorded. 8. Enter specific film size, e.g. 16mm, 35mm, 405, etc. 9. Enter specific film type, e.g. Kodachrome 64, Ektachrome 200, etc. 10. Specify whether 1" 3-1/4" 8mm Betacam, Mini, 8mm, etc. 11. Specify 1/4" SECAM, NTSC, etc.	ITEM 12. Indicate any film imagery, and specific type such as copy negative, duplicate negative, etc. 13. This is the cover story. Give a complete description of the project, exercise, activity, or event being recorded. Provide as much detail as possible. 14. Provide the unit designation and its home location. 15. Describe the major equipment items or weapon system shown. For example, if there is a photograph of a dog tag, enter "A-150, flying over the Gulf of Mexico, enter "A-150 aircraft and "A-150 tank" in this item. 16. Include the full name, rank, and position of each person pictured, unless all of the above information is not used. Enter the name of the person and his or her position in the photograph.
24. FOR USE BY RECORDS CENTER: a. RECORDS CENTER USE ONLY: (If not applicable, enter "N/A") b. RECORDS CENTER USE ONLY: (If not applicable, enter "N/A")	

DD Form 2537 Reverse, MAR 89

Figure 13-18B.—Visual information caption sheet (back).

“condition” it to room temperature. Complete dimensional equilibrium may take as much as about 16 hours. Never use direct heat to speed up the conditioning process. High temperatures can create harmful differences in layer-to-layer tension on the reel. Never use extreme cold, such as a freezer, to cool down a hot

tape. In general, recommended storage conditions for videotapes are as follows:

Relative Humidity 50% - 60%

Temperature 60°F - 80°F

For best long-term storage, rewind video cassettes uniformly for even tension before boxing. Tapes should always be in one of two places-in the VTR or in the original box. Stand videotape boxes upright. Do not store tapes in a horizontal position. This can cause bending and distorting of reel flanges that can be a major cause of tape edge damage.

To prevent damage, you should protect videotapes by covering them when they are not in use. Keeping them in dustproof cassette containers prevents the accumulation of airborne dust on the tapes. Dust can be a prime cause of dropout. Body oils and salts from your fingertips can pick up and hold foreign particles that, when transferred to the tape, cause dropouts.

CHAPTER 14

JOB CONTROL AND PHOTOGRAPHIC FINISHING

No job is finished until the paper work is complete. This statement holds true for all photographic jobs completed in your imaging facility. In order for your imaging facility to operate efficiently, you must follow the procedures that regulate job control and other administrative procedures within your facility. This chapter is intended as an introduction only. A more in-depth understanding of Navy imaging administrative procedures are found in *the Navy Visual Information Management and Operations Manual*, OPNAVINST 5290.1 (series).

The first topic discussed in this chapter is the handling of classified material. You must learn to follow strict guidelines when handling classified material. There is no allowance for mistakes. Become thoroughly familiar with the standard operating procedures established in your imaging facility.

SAFEGUARDING CLASSIFIED MATERIAL

Modern methods of conducting war and safeguarding our nation require a tremendous amount of information. This information is stored in books and files, it accumulates in reports, it is gathered by intelligence activities, and it is transferred in the form of letters, messages, photographs, and audio and video recordings. This information is sifted and organized in the minds of the people directing the war effort and those keeping the peace. Much of this information is extremely valuable to our enemies, and, therefore, must be classified and safeguarded in the interest of national security.

In performing your job as a Navy Photographer's Mate, you may have access to classified information. Therefore, you **MUST** become aware of the importance of safeguarding all classified information to which you have access.

Classification categories, procedures, and related-security information pertaining to the Navy are contained in the *Department of the Navy Information and Security Program Regulation*, OPNAVINST 5510.1 (series). A copy of this regulation is available in every

Navy imaging facility where classified information is maintained or handled. Refer to this regulation frequently to make sure you safeguard properly classified material. Never depend on your memory regarding the proper disposition of classified information, particularly if you handle it infrequently.

The purpose of the security program is to protect classified material from unauthorized disclosure. It is the responsibility of all military personnel to safeguard classified information.

The Navy controls the dissemination of classified information. Therefore, knowledge or possession of classified information is permitted only to those persons who actually require it in the performance of their duties. This principle is referred to as the "need to know" and is a prerequisite for access to classified information. Access to classified material is not automatically granted because a person has the proper clearance, holds a particular billet, or is sufficiently senior in authority. Access is granted only if the criteria of proper clearance and "need to know" are both met.

Official material that requires protection in the interest of national defense is categorized in three designations. These three designations, in descending order of importance, are Top Secret, Secret, and Confidential. No other designation is used to classify defense matters that require protection in the interest of national defense.

TOP SECRET

The classification "Top Secret" is limited to defense information or material that requires the highest degree of protection. The Top Secret classification is applied only to information or material that is paramount to national security and the unauthorized disclosure of which could reasonably be expected to cause exceptionally grave damage to the national security.

SECRET

Material classified as "Secret" is limited to defense information or material. The unauthorized disclosure of

which could reasonably be expected to cause serious damage to the national security.

CONFIDENTIAL

Use of the classification “Confidential” is limited to national defense information or material, the unauthorized disclosure of which could reasonably be expected to cause damage to national security.

RESTRICTED DATA

The term *Restricted Data* as defined in the Atomic Energy Act of 1954 means all data concerning (1) the design, manufacture, or utilization of atomic weapons; (2) the production of special nuclear material; or (3) the use of special nuclear material in the production of energy.

The term *Formerly Restricted Data* applies to classified defense information which (a) has been removed from the Restricted Data category in order to conform with the Atomic Energy Act of 1954 and (b) cannot be released to foreign nationals except under specific international agreements.

Restricted Data and Formerly Restricted Data are NOT in themselves classification categories, but are additional warning notices of special handling requirements. Thus a classification category is used with the warning notice wherever it is appropriate.

FOR OFFICIAL USE ONLY

The designation “For Official Use Only” is assigned to official information that requires protection according to statutory requirements or in the public interest, but does not require safeguarding in the interest of national defense.

A security classification may not be used to conceal violations of law, inefficiency, or administrative error; to prevent embarrassment to a person, organization, or agency; or to restrain competition.

AUTHORITY TO CLASSIFY

The authority to assign a security classification is restricted to those officials who have been designated the authority in writing.

Original Classification

One important aspect of classification that is commonly misunderstood is the difference between original and derivative classification. Original classification is warranted only when information requiring classification is generated and classification cannot be derived from information that was classified previously. For example, information pertaining to a technological breakthrough or a significant scientific advance generally requires original classification authority.

Derivative Classification

The majority of classified material you work with is the product of derivative classification. As the word implies, this type of classification is based on and obtained from a previous classification. Derivative classification is applied when the information presented is the same (or closely related to) as other information that already is assigned a classification.

Suppose you are making photographs for a report of Iraqi warships in the South China Sea. If the report is based on a source document that states that such photographs should be classified, your classification is derived from that source. Or suppose you take pictures of a radar system that is classified Secret. Then the picture, the negatives, the test prints, and the enlargements are also classified Secret. The classification of the pictures is derived from the classification of the radar system. Most of the information classified derivatively is taken from documents classified previously. Whenever you copy or extract classified information, you must ensure that the extracted information bears the same classification in the new document (such as a photograph) as it did in the source document.

In marking a derivatively classified document, you must cite the source of that classification or authority (e.g., CNO ltr, ser OP-009 of 1 Oct 93) on the “classified by” line. Records must be available for the lifetime of the document to show the basis for classification or to trace the chain of classification authority.

CLASSIFICATION MARKINGS ON IMAGING PRODUCTS

The requester of imaging products determines the security classification of the product according to the guidelines contained in OPNAVINST 5510.1. Each original and all photographic copies that are classified must be marked with the appropriate security classification, the classification authority, and declassification and downgrading instructions based on the original classification markings.

Photographic film, prints, and slides that are classified must be marked with the appropriate classification and other applicable markings.

Film

Roll negatives are marked on the base side with the classification and associated markings at the beginning and end of each strip. Single negatives cut from the roll or single-sheet film negatives must also be appropriately marked on the base side. These materials must be kept in envelopes or film canisters with conspicuous markings.

Transparencies and Slides

The classification and associated markings must be shown clearly on the slide mount or transparency frame and whenever possible on the image area. Because the classification on 35mm slides are not conspicuous until they are projected, the classification must be marked on the slide mount. It is not necessary for each transparency of a set of transparencies to bear applicable associated markings when the set is controlled as a single document. In such cases, the first transparency bears the applicable associated markings.

A camera that contains exposed film of a classified subject must be given the same protection as the classified subject. Be cautious with Polaroid film when photographing classified material. All waste products produced by these films must be destroyed as classified waste.

Prints

All 8x10 and larger prints must be marked with the classification at the top and bottom of the face side with the associated markings at the bottom. On smaller prints the classification is required to appear only once on the face side. When it is not practical to place the classification and associated markings on the face side

of prints, the markings can be placed on the reverse side, using a pressure tape label or a stapled strip when stamping is not practical. All photographic reproductions must show the classification and associated markings clearly.

Motion-Media Products

The beginning of each reel of film or videotape must be marked with a title that bears the classification and associated markings. These markings must be visible when projected on the screen or played through a monitor. Only the overall classification is required at the end of the reel or videotape. Reels and cassettes must be marked with the appropriate classification and kept in containers that are marked conspicuously with the classification and associated markings.

DISCLOSURE OF CLASSIFIED MATERIAL

When classified matter is entrusted or made known to you, you must protect it against loss or compromise. You are responsible for any act or failure that contributes to the loss, compromise, or unauthorized disclosure of classified information. This includes information that is passed verbally.

When you are found responsible for the loss, compromise, or unauthorized disclosure of classified matter or when you violate security regulations, you can expect to be disciplined promptly. Disciplinary action may include, in the case of military personnel, trial by court-martial or, in the case of civilians, prosecution under Title 18, United States Code, as amended, or other federal statutes, as appropriate.

PROTECTIVE MEASURES

Generally, there are four ways that classified information is protected: censorship, physical security, transmission security, and cryptographic security. As a photographer, you will be concerned primarily with personal censorship and physical security.

Personal Censorship

Censorship places a barrier between classified information and unauthorized personnel by preventing disclosure in the form of letters, conversations, and personal contacts. Restricting information at the source, except for official use, depends on the integrity and discretion of the individual.

Physical security

Physical security is the safeguarding of documents, photographs, and other items that contain classified information. Later in this chapter, another form of physical security used to safeguard property and material physically at Navy shore activities is discussed.

Physical security is the concern for protecting classified documents, devices, and materials, so they never fall into the hands of unauthorized personnel or come within optical range of actual or possible enemies. When working with classified matter, you must protect it from being seen by unauthorized individuals, either military or civilian. No person should have access to classified material unless it is necessary for them to carry out their official duties. Classified material must never be removed from its designated working space or left unguarded. When not actually in use, you must keep it locked up in an authorized container.

DESTRUCTION OF CLASSIFIED MATERIALS

When classified products, such as photographs, videotapes, or audio recordings, are no longer needed or useful, they must be destroyed. The products must never be discarded in ordinary containers.

Destruction of classified material must be accomplished and witnessed by persons who are cleared to the level of the material being destroyed. A record of destruction is mandatory even when an originator states in a document that it “may be destroyed without report.” This statement means only that the originator does not need to be notified of the destruction.

A record of destruction is required for Top Secret and Secret material, but not for Confidential material. Destruction may be recorded on OPNAV 5511/12 (Classified Material Destruction Report) or on any other record that includes complete identification of the material, number of copies destroyed, and the date of destruction. The record of destruction must be signed by the two cleared people involved in the destruction of Top Secret materials, and the record must be retained for 2 years.

Classified documents can be destroyed by burning, pulping, pulverizing, or shredding. When destruction is accomplished by means other than shredding, the residue must be inspected to ensure complete mutilation.

In most imaging facilities, the policy is to give all scrap materials, test prints, and any other material

generated from a classified job, back to the requester. Do not destroy classified materials without first consulting your supervisor.

SECURITY AREAS

Spaces that contain classified matter are known as security (sensitive) areas. The areas have varying degrees of security, depending on their purpose, the nature of the work, and the information and materials involved. All security areas should be clearly marked by signs marked Restricted Area. Three types of security areas are established to meet different levels of security sensitivity.

Exclusion Area

Spaces requiring the strictest control of access are designated exclusion areas. They contain classified matter that restrict admittance to only those persons that require access to the materials and have a “need to know.”

An exclusion area is fully enclosed by a perimeter barrier. All entrances and exits are guarded, and only those persons whose duties require access and have the appropriate security clearance are authorized to enter.

Limited Area

A limited area is one where the uncontrolled movement of personnel permits access to classified information. Within the area, access may be prevented by escort and other internal controls.

The limited area is enclosed by a clearly defined perimeter barrier. Entrances and exits are guarded or controlled by attendants to check personal identification. These areas also may be protected by an automatic alarm.

Most Navy imaging facilities should be considered at least a limited area when classified work is in progress. All visitors must be escorted within these spaces. When classified work is in progress, it should be excluded from all personnel who do not have the need to know. Even when classified work is not in progress, it is wise to operate within your imaging facility as though it was a limited area because there is a considerable amount of expensive equipment throughout.

Controlled Area

A controlled area usually does not contain classified information. It serves as a buffer zone to provide greater administrative control, safety, and protection for the limited or exclusion areas. These areas require personnel identification and control systems to limit admittance to those people having bona fide need for access to the area.

Passageways or spaces surrounding or adjacent to limited or exclusion areas may be designated as controlled areas.

SAFEKEEPING AND STORAGE OF CLASSIFIED MATERIAL

Classified information or material must be stored under conditions that prevent unauthorized persons from gaining access to it. The security requirements must allow work to be accomplished while providing adequate security. In the Navy, the commanding officer is directly responsible for safeguarding all classified information within his command. He is also responsible to ensure that classified material is stored properly when not actually in use.

Storage

Whenever classified material is not under the personal control and observation of an authorized person, it must be guarded or stored in a locked security container.

Top Secret material is stored in a safe or safe type of steel file container having a three-position combination lock as approved by the General Services Administration (GSA) or a class A vault that meets the standards established by the Director of Naval Intelligence. An alarm-protected area may be used to protect Top Secret material when the responsible local official decides that an alarm system provides protection equal to, or better than, the safe, steel file, or vault. The alarm-protected area provides a physical barrier that prevents removal of the material and prevents the material from being viewed by unauthorized personnel and compromised.

Secret and Confidential material may be stored in the same manner authorized for Top Secret or, in a class B vault, a vault type of room, or a secure storage room that has been approved according to the standards prescribed by the Director of Naval Intelligence.

Valuables, such as money, jewels, precious metals, narcotics, and so forth, should not be held in safes used to store classified materials because they increase the risk of theft. Only classified materials are to be placed in containers designated for storage of classified material.

Container Designations and Combinations

Containers used for the storage of classified material are assigned a number or symbol for identification purposes. The identifying numbers or symbols are located in an obvious location on the outside of the container. Each container must also meet the security requirements for the highest classification of material stored in the container. However, this designation is not marked externally on the container.

Records of combinations are sealed in envelopes (OPNAV 5511/2) and kept by the security manager, duty officer, communications officer, or other person(s) designated by the commanding officer. Combinations for containers with noncryptographic material will be changed under any of the following conditions:

- When a safe is first placed into use
- Annually
- When the combination or record of combinations has been compromised or a security container is discovered unlocked and unattended
- Whenever an individual knowing the combination is transferred or discharged, or when the security clearance of an individual knowing the combination is reduced, suspended, or revoked

When you are selecting new combination numbers, multiples of 5, simple ascending or descending numerical series, and personal data (such as birthdays and serial numbers) must not be used. The same combination cannot be used for more than one container.

Combinations to security containers are changed only by persons that are cleared for the highest level of classified material stored in the container.

When a security container is taken out of service, built-in combination locks must be reset to the standard combination 50-25-50. Combination padlocks must be reset to 10-20-30.

desk receiving the job request. OPNAV 5216/10 should be unclassified and contain only the information required to identify the material being received. No classified information should be included on a receipt. The postcard receipt (back of OPNAV 5216/10 package) is given to the person delivering the job request. The postcard receipt is then presented to the front desk person when the completed job request is picked up. OPNAV 5216/10 receipts are retained for a minimum period of 2 years.

Whenever you have questions about classified information or security matters, refer to the *Department of the Navy Information Security Program Regulation*, OPNAVINST 5510.1, or the security manager of your command.

VISITOR CONTROL

Physical security is part of an overall Navy program that deals with physical measures designed to prevent unauthorized access to equipment, facilities, and materials.

Navy imaging facilities are a part of this physical security program. Physical security of imaging facilities is a direct, immediate, legal, and moral responsibility of every Photographer's Mate assigned to the activity.

As stated earlier, Navy imaging facilities are considered limited access areas. The reception or job order desk area is the only place within the facility that unescorted personnel, other than personnel assigned to the activity, or visitors are permitted. Beyond the reception area, there must be a definite, well-defined limiting barrier. This barrier may be in the form of a warning sign, locked gate, or a door, depending on the degree of security required.

Procedures for the control of people entering the restricted areas of an imaging facility beyond the barrier include, as a minimum, an escort system. Escorting is a method for controlling personnel within the lab who are not normally authorized access. Whether or not the escort remains with the visitor during the entire time of the visit is determined by the amount of security required, by the purpose of the visit, and by local written policy. Utility and maintenance personnel performing work at regular or irregular intervals and for short working periods should be handled by the same procedures as those used for the control of visitors.

People are curious and like to look at pictures. When unescorted they will probably look through the pictures and negatives in the finishing area. Even if they do not

take the pictures, they most probably will not place them in the same order and the finishing crew will have to re-sort the jobs.

Even when your imaging facility does not handle classified work, you must become aware of the need for security. You must be accustomed to escorting visitors. By escorting visitors, you will find that the disappearance or misplacement of equipment and materials is minimized.

JOB CONTROL

The *Navy Visual Information Management and Operations Manual*, OPNAVINST 5290.1 (series), governs the administration and operation of Navy imaging facilities. It outlines the organization and administration of audiovisual units and provides policies and instructions for the use of imaging products in the Navy. You should consult this manual for the most current information concerning the organization of naval imaging.

The ability to track photographic jobs within your facility quickly and accurately depends on the job control system of your imaging facility. When the system is not used correctly, photographic requests, negatives, prints, and other requirements may be lost or misplaced. This causes an inordinate delay in customer service that has a negative impact on your relationship with other divisions.

JOB-ORDER LOG

An unclassified job-order log is maintained by all imaging facilities. The log must contain, as a minimum, the following information: sequential job order numbers, security classification, product identification, and disposition of the work request (person who picked up the job). Additional data required by your imaging facility, such as date and requester, may also be included in the job-order log.

Unclassified identifiers are used to refer to classified subjects. A separate job-order log is maintained for classified work requests. Job order logs are created on the first day of each fiscal year, and the job order number is reset to 000001. The **fiscal year** of the federal government runs from 1 October to 30 September.

Figure 14-2A.—OPNAV 5290/1 (Front).

VISUAL INFORMATION JOB-ORDER FORM

ALL work performed by Navy imaging facilities must be documented on a job-order form. The job-order form is used to maintain close control of in phases of imaging services. The job-order form serves several purposes; they are as follows: as an official request for visual information (VI) services, as the authority to perform the work, as a record of the time and materials used to complete the job, and as a receipt for the finished work. Navy imaging facilities may use the Request for Audiovisual Services, OPNAV 5290/1 (fig. 14-2A), or a locally created, in-house job-order form.

As a minimum, an in-house job-order form must contain the following information: a job-order number, a customer signature block with a disclaimer that the service requested is official work and essential to mission accomplishment, product security classification, and any other information required by your facility to accomplish the request officially.

Figure 14-2A is an example of an Request for Audiovisual Services, OPNAV 5290/1. Figure 14-2A shows the front side of the form. The front side can be broken down into two sections. The top section, Blocks 1 through 14, may be completed by the requester or a person assigned to the job-control desk by the imaging facility. The completion of these blocks is self-explanatory. Block 2 (the work request number) is the

VISUAL INFORMATION CAPTION SHEETS

A Visual Information Caption Sheet, DD Form 2537, must accompany each product forwarded to a Navy still and motion-media records center. (See fig. 13-18.) The use of the visual information caption sheet ensures that all necessary caption information is available and standardized, so it can be entered into the computer data base at the records center.

The instructions necessary to complete DD Form 2537 are printed on the back of the form. Because the completed form provides the cover story images being forwarded, you must provide accurate information and as much detail as possible about the recorded event.

PHOTOGRAPHIC FINISHING

Photographic finishing is just as important as all the other steps in the photographic process. Normally, the final checks for accuracy and quality are performed in the finishing area.

QUALITY ASSURANCE

When the prints are dry and the job order is completed, you must examine them for defects or other poor qualities such as stains, dust spots, fingerprints, and uneven borders. Many times the prints are on long rolls and must be cut and trimmed into individual prints. After the prints are trimmed, you must sort the prints into groups according to the negatives and job orders. At this stage you can ensure there are enough good-quality prints to fulfill the job order. The following checks must also be made: the correct negatives were printed, the correct size was printed, and the negatives were printed on the correct finish (glossy or matt) paper. Negatives that required additional prints or reprints should be sent back to the print room to correct discrepancies. You are responsible for ensuring that only the highest-quality product leaves the imaging facility.

Rejected prints from classified negatives must be disposed of according to the instructions provided in the *Department of the Navy Information and Personnel Security Program Regulation*, OPNAVINST 5510.1 (series). Rejected prints from negatives that are unclassified must be disposed of according to local instructions.

NOTE: It is the policy of most Navy imaging facilities to return all film and paper scraps, test prints, rejected prints, and so forth, from classified jobs to the

requester. Be sure to follow the policy established locally by your imaging facility.

Do not neglect to check the completion and accuracy of the job order. Be sure that all personnel responsible for completing the job have completed the appropriate blocks. Materials expended for the job, man-hours, and accountability must be provided on the job order. Remember, without this information, proper budgeting and personnel management within your facility cannot be performed accurately.

MARKING VISUAL INFORMATION PRODUCTS FOR FILING

When the negatives and prints are not returned to the requester, they must be marked and captioned before placing them into the local file or forwarding them to a Navy still and motion-media records center. Classified prints must be marked with the appropriate classification as specified in OPNAVINST 5510.1 (series). Refer to chapter 6 for caption writing requirements if you need to refresh your memory.

The guidelines and procedures for marking visual information (VI) products are in chapter 2 of the *Navy Visual Information Management and Operations Manual*, OPNAVINST 5290.1 (series). You should refer to this instruction for the most current information on marking and identifying imaging products.

Each original product retained in your imaging facility file must be identified and recorded in the Visual Information Record Identification Number (VIRIN) log. The following information must be included in product markings:

- ◆ The Department of Defense Visual Information Authorization Number (DVIAN) code
- The VIRIN code
- The last two digits of the fiscal year (FY) in which the image was exposed or recorded
- The six-digit sequence number
- The security classification (if applicable)

Blank–Unclassified

CO–Confidential

SE – Secret

TS – Top Secret

A complete listing of VIRIN codes is contained in OPNAVINST 5290.1 (series). Some of the more commonly used VIRIN codes are as follows:

OTT—overhead transparency
SCN—still photographic negative, color
SPN—still photographic negative, black and white
SPT—still photographic transparency
VSP—video still
VTC—videotape cassette

Each set of characters in the markings of VI products is separated by a hyphen. An example of a VIRIN is as follows: the first product of FY 93 filed by the Fleet Imaging Command Pacific, San Diego; the subject is classified Secret and was shot by a photographer using a still-video camera. The VIRIN is as follows:

NO108-VSP-93-000001-SE

Each authorized imaging facility is assigned a separate DVIAN code. Each original VI product that is marked and filed by your imaging facility must be recorded in the VIRIN log. The VIRIN-log entries must consist of the VIRIN assigned to each original product, the job-order number, format, subject matter, camera-person or artist's name, and final disposition of the product. Like the job-order log, the six-digit sequence number in the VIRIN log is reset to 000001 the first day of the new fiscal year.

Still Photography

Negatives are marked with the VIRIN on the base side, outside the usable image area with permanent ink. Roll negatives are cut into strips and each strip is assigned a separate VIRIN. Individual frames on the strip are then identified by letters (A, B, C, D, and so on). Frames within the strip that are not intended for filing should not be assigned a letter; however, they must not be crossed out.

Transparencies must be mounted in plastic or cardboard mounts with the VIRIN marked on the mount. For still, electronic floppy disks, mark the outside of them with the VIRIN, using permanent ink.

Prints

Photographic prints are marked on the base side with the same VIRIN assigned to the original negative

or transparency. Prints must also include the date the original photograph was taken and the name and address of the originating activity.

Unclassified photographs that are cleared for public release according to the *Department of the Navy Public Affairs Policy and Regulations Manual*, SECNAVINST 5720.44 (series), must be stamped—"United States Navy Photography. Please credit USN PHOTO."

Classified prints must include the security classification, classification authority, appropriate downgrading and declassification instructions, and be stamped "United States Navy Photography."

Photographic prints of mishaps, accidents (including property damage and personal injury), and other types of evidence that are not releasable under the Freedom of Information Act must be stamped "United States Navy Photography."

Motion Media

Each motion-media roll of film, cassette, or disk must be identified with the same information as still-imaging products. However, the data must be recorded at the beginning of the tape for a minimum of 5 seconds viewing time. The VIRIN should also appear on the outside of the cassette or reel, so the product can be identified without actually viewing it. When possible, the VIRIN should be included on the slate. When the VIRIN is included on the slate, all information is provided in the same frame.

NOTE: Remember that all Navy imaging products forwarded to a visual information records center for pre-accessioning must be accompanied by a Visual Information Caption Sheet, DD Form 2537.

FILING IMAGING PRODUCTS

Images that are stored locally must be protected. Standard, VI file cards are commonly used throughout the Navy to protect and file photographic images. These file cards may be color coded to distinguish classification, subject matter, time frame, and so forth. Standard file cards are made of sturdy paper stock. A print of the image, the VIRIN, and the classification are included on the face side of the file card, and the negative and caption are attached to the back. Downgrading instructions must be included for classified images. All negatives filed or handled must be protected by negative preservers.

Photographic negatives and prints should be carefully stored in a file cabinet so they are protected.

You should avoid storing photographic products in cardboard boxes. To prevent damage, never store photographic negatives and prints in storerooms, quonset huts, bilges and so on, where they may be subject to adverse conditions, such as direct sunlight, UV radiation, water, dampness, high humidity, and high temperatures. Videocassettes, audio tapes, and floppy disks must never come in to contact with a magnetic field. A good general rule is to store file images in climatic conditions under which you would be comfortable.

PRINT MOUNTING

For exhibition and display, prints are mounted or matted on a stiff board. The difference between mounting and matting is the way in which a print is attached to the board. When a print is mounted, it is stuck on the face of a mounting board. When a print is matted, it is attached to the back of the board and the image is placed behind a cut opening. When matted, a print is often taped into place, thus the matt can be temporary. Generally, prints that are framed are matted. In both cases, the board enhances the picture by providing a broad border as well as protecting the edges against damage.

When you are preparing a print for exhibition or display, your goal should always be to show the print to best advantage. Simplicity is the best strategy. Elaborate artwork or fancy lettering can often detract from the photograph.

Generally, prints for display purposes are mounted or matted on special card stock to make them stand out from their surroundings. Card stock used for mounting photographic prints should be free of acid or sulfur that can deteriorate the print quality. Card stock is available in various sizes, colors, textures, and weights. There are no hard-and-fast rules for mounting prints, but the card stock should compliment the print. The mount should be large enough to balance and support the picture, and the texture and color should compliment the overall tone.

The way the print is placed on the mounting board is important. Prints mounted at odd angles or in a corner of the mount unbalance the photograph. The bottom border on most mounts is the widest border of all. Normally, prints are mounted so the top and side border of the mount are equal. To provide balance, you should ensure the bottom border is 25 to 35 percent wider than the top and side borders. There are two types of adhesives for mounting prints: wet and dry.

Wet Method

Liquid adhesives, such as rubber cement and spray-on adhesives, can be used to mount prints. These two adhesives are easy and clean to use. After they dry, the excess adhesive can be removed easily by rubbing it lightly. The drawback to using rubber cement and spray-on adhesives is that they are not permanent. In time the print may loosen and peel off the mount. Rubber cement is an ideal adhesive for temporary mounts used in displays or for copying. Gum arabic, glue, or paste should be avoided whenever possible. These adhesives are known to stain the print or smear out from around the edges of the print. This causes smudges on the mounting board.

Dry Method

A dry print-mounting method that uses a pressure-sensitive adhesive is in common use in the Navy. Pressure-sensitive adhesives come in a variety of sizes in both rolls and sheets. These adhesives form a permanent bond and are easy to use for resin-coated papers. To use these materials, you simply apply the print to the sticky surface of the mounting material. You then peel off the protective backing and apply it to a mounting board. If the print is not aligned correctly, you can remove the print and reapply it. Once the print is correctly in place, you must apply pressure to the print and mounting board. Normally, this is done by running the print and mounting board through a specially designed roller assembly. This assembly applies pressure to the materials being mounted. The pressure-sensitive adhesive material contains tiny beads of adhesive. The pressure breaks these beads and releases the adhesive. Once pressure is applied to the materials being mounted, a permanent bond is formed.

A dry-mount press can also be used to mount photographic prints. With a dry-mounting press, heat is used to fuse a mounting tissue between the print and the mounting surface.

A dry-mount press is designed to provide uniform pressure and heat. Even pressure is an important aspect of good, dry mounting. Adequate pressure helps squeeze out air from between the adhesive, print, and mounting board. You should operate the dry-mount press at the temperature recommended by the manufacturer of the mounting tissue. It is better to use a slightly lower temperature to mount prints than a temperature that is too high. Excessive temperatures may cause damage to the print. When temperatures are too high for RC papers, the resin coating blisters or bubbles.

Porous materials, such as mounting board and rag-stock paper, absorb moisture from the air. This moisture becomes trapped between the layers and causes blisters and bubbles in the finished work. For best results, you should predry the materials before beginning the dry-mounting process. This can be done by heating the mounting board or paper in the mounting press to remove the moisture.

The time required to form a good bond varies when you are using a dry-mounting press. You should mount the prints for a minimum amount of time—the time required to squeeze out air and moisture from the materials and to activate the adhesive. Because different materials have different thicknesses and heat-conducting characteristics, you must experiment to determine what amount of time is required to form a good mount. Whenever possible, you should use scraps of materials that are the same as your finished work to determine the best time and temperature for dry-mounting prints.

The final stage of finishing for some photographs is to frame them. There is an infinite number of colors and materials available for framing photographs. The same principles apply for framing photographs that apply to mounting or matting prints. Keep it simple and choose a frame that compliments the photograph, rather than distract from the picture.

SLIDE MOUNTING

Unlike photographic prints, slides must be put into slide mounts in order to be of any use. The process of mounting slides ranges from a simple pair of scissors to slide-mounting machines, costing tens of thousands of dollars.

Whenever handling slides, you should wear cotton gloves to avoid fingerprints on the image area. If fingerprints do get on the slides, a cotton ball moistened with film cleaner should be used to remove them.

Slides can be mounted in either cardboard or plastic slide mounts. When using cardboard slide mounts, you must heat them so the slide adheres to the mount. Navy imaging facilities use plastic slide mounts. The slides can be placed in plastic slide mounts manually or by machine.

To mount slides manually, you must cut the roll into individual frames. Normally, this is done on a light table so the edges of the frame can be seen clearly. To mount a slide, you simply slide the frame into an open slit on the edge of the slide mount. On one side of the plastic slide mount is the lettering, “THIS SIDE TOWARDS SCREEN.” The lettering appears along the side of the open slit. The slide is mounted properly when the emulsion side of the film faces the lettering, and the slide is straight. No light should pass between the edges of the film edges and the mount.

When projected slides appear correctly on the screen, they are placed in the projector (or slide tray) upside down and backwards, as viewed from the operator’s position. An operator’s dot is often placed on the slide mount to aid in organizing the slides in the tray. When the slide is viewed with the emulsion side towards you and the image is upside down, the operator’s dot is marked on the upper right-hand corner of the slide mount. The slides are placed into the slide tray correctly when the operator’s dot can be seen facing the outside of the tray.

APPENDIX I

GLOSSARY

ABERRATION—A defect in the formation of an optical image; for example, astigmatism, chromatic aberration, curvature of field, and so forth.

ABSOLUTE TEMPERATURE—The temperature measured from absolute zero. Expressed as degrees Kelvin ($^{\circ}\text{K}$) in the Centigrade system where absolute zero is -273°C or in degrees Rankine in the Fahrenheit system where absolute zero is -459°F on the scale.

ACCELERATOR—Chemical constituent of photographic developers that activates the developing agent and swells the gelatin to hasten penetration of the solution. See **SODIUM HYDROXIDE**, **SODIUM CARBONATE**, **SODIUM METABORATE**, and **SODIUM BORATE**.

ACHROMATIC COLORS—Colors perceived as having no hue (white, black, gray, and silver).

ACHROMATISM—The absence of chromatic aberration.

ACID, ACETIC—A colorless liquid of pungent odor used in stop baths and in fixing baths. In concentrated form it attacks the skin and produces painful blisters. A concentrated solution of 99% solidifies at 62°F and forms a mass resembling ice (Glacial Acetic-Acid).

ACID, BORIC (BORACIC ACID) H_3BO_3 —Colorless, odorless, transparent crystals, or a white amorphous powder. Slightly soluble in water and more soluble in glycerine and alcohol. Used in toning and fixing baths.

ACID, SULFURIC, H_2SO_4 —syrupy, odorless liquid, colorless or slightly yellow. Used for preparing a tray-cleaning solution and in fixing and reducing solutions.

ACTION—Movement within a scene being photographed. Also, the picture portion of a motion picture as differentiated from the sound track portion.

ACUTANCE—An objective measure of the ability of a photographic material to show a sharp line of demarcation between contiguous areas receiving low and high exposures. It correlates well with

subjective judgments of picture sharpness. It is the mean of the square of the density gradients times the density scale over a boundary.

ADDITIVE PROCESS—Any color process in which a reproduction is formed by a combination of images each of which supplies color in proportion to the color observed in the original scene. In a typical, three-color additive process, the colors of the images are blue, green, and red. See **SUBTRACTIVE PROCESS**.

AGC—Automatic gain control. Regulates the volume of the audio or video light levels automatically within a camcorder.

AGITATION—The act of moving a photographic film, plate, or paper in a processing bath or moving the bath relative to the photographic material during processing.

AIR BELLS—(1) Air bells are bubbles of air that prevent contact between a processing bath and localized areas on the surface of a photographic material. (ASA) (2) Undeveloped spots on negatives or prints caused by air bubbles, preventing access of developer.

ALKALI—A water soluble compound capable of uniting with and neutralizing acids. The alkalies commonly used for photographic processing baths are sodium hydroxide, potassium hydroxide, sodium carbonate (monohydrate and anhydrous), potassium carbonate, sodium tetraborate, sodium metaborate, and ammonium hydroxide.

AMBIENT SOUND—Background sound or wild sound. Sound that surrounds the scene or location, received by the microphone and recorded onto magnetic tape.

AMMONIUM THIOSULFATE, $(\text{NH}_4)_2\text{S}_2\text{O}_3$ —A white salt freely soluble in water. Used in the preparation of rapid-fixing solutions.

ANALOG—An analog signal that fluctuates exactly like the original stimulus (for example, sweep second-hand clock, phonograph player).

ANGLE OF ACCEPTANCE—The angle that objects must align within to affect the reading of a photoelectric exposure meter.

ANGLE OF FIELD—A property of a lens. The angle subtended by the lines that pass through the center of the lens and locate the diameter of the maximum image area within the specified definition of the lens. Also called angular fields.

ANHYDROUS—Dry, containing no water of crystallization.

ANTICURL BACKING—A transparent, gelatin coating sometimes applied to the opposite side of a photographic film from the emulsion to prevent curling by balancing the forces that tend to curl the film, as it is wet and dried during processing.

ANTIHALATION COATING—A light-absorbing coating applied to the back side of the support of a film or plate, or between the emulsion and the support, to suppress halation (also called antihalation backing). *See* HALATION.

ANTISLUDGE AGENT—A chemical compound added to photographic processing solutions to prevent the formation of sludge. Sodium metaphosphate and boric acid are commonly used for this purpose.

APERTURE—In an optical system, an opening through which light can pass.

APERTURE, CURTAIN—The slit in a focal-plane shutter that permits light to reach the film. The slit size may be either fixed or variable.

ARTIFICIAL LIGHT—Illumination provided by incandescent, fluorescent, or flame sources.

ASPECT RATIO—The ratio of the height to the width of the film or television frame; that is, three units high to four units wide (3:4).

ASTIGMATISM—A lens aberration that causes an off-axis point to be imaged as a pair of lines at right angles to each other and in different focal planes. A lens having astigmatism is unable to image horizontal and vertical lines in the same plane with equal sharpness.

ATMOSPHERIC PERSPECTIVE—Applied to the effect of distance created by atmospheric haze in a photograph. It lightens the tones as the distance increases.

AUDIO TRACK—The area of the videotape that is used for recording audio information.

AUTO IRIS—An automatic control of the lens diaphragm.

AUTOFOCUS—A feature of certain cameras or enlargers by which the image is kept in focus automatically regardless of the degree of reduction or magnification.

AVOIRDUPOIS—The system of weights commonly used in the United States and the British Empire in which the primary unit is the pound (7,000 grains); usually expressed in pounds, ounces, and binary fractions thereof.

BACK LIGHT—Illumination from behind the subject in a direction substantially parallel to a vertical plane through the optical axis of the camera.

BACKGROUND—(1) That part of the landscape which is more distant than the principal object from the camera. (2) A screen, drape, or projected scene used in a photography studio behind the subject.

BACKING PAPER (ROLL FILM)—The protective strip of paper to which the film is attached. Backing paper is usually black on one side and colored on the opposite side. Numerals are usually printed on the colored side in a position where they can be viewed through the camera window. Also called duplex paper. (ASA)

BARN DOOR—Folding wings used in front of studio spotlights to aid in directing the light and to shade portions of the subject from direct illumination.

BASE DENSITY—The density of a film base. No plastic is 100% transparent, so all films have some base density.

BATH—Any chemical solution used in processing photographic materials.

BEAM SPLITTER—An optical system so arranged as to reflect or transmit two or more portions of a light beam along different optical paths.

BELLOWS—The extensible lightproof device that joins the lens board to the film support section of a camera

BLEACH, PHOTOGRAPHIC—(1) To remove an image from a photographic film. Especially to do this by converting a metallic silver image to a halide or other salt that can be removed from the film with hypo. When bleaching is not carried to completion, it is called reducing. (2) Any chemical reagent that can be used for bleaching. (3) Any chemical solution used for bleaching.

BORAX—Sodium tetraborate, $\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$; a mild alkali used as an accelerator in photographic developers, particularly for fine-grain effects.

BRIGHTNESS RANGE—Variation of light intensities from maximum to minimum. Generally refers to a subject to be photographed. For example, a particular subject may have a range of one to four—that is, four times the amount of light is reflected from the brightest highlight as from the least bright portion of the subject.

BULB EXPOSURE—An exposure in which the shutter remains open as long as the shutter release mechanism is depressed.

BURNING IN—In photographic printing, a technique by which selected areas of the image are given extra exposure, and the rest of the image is protected against added exposure.

CABLE RELEASE—A device consisting of a stiff wire encased in an outer flexible covering designed to trip a camera shutter without touching the camera itself. One end is threaded to fit the shutter, and the other has a thumb-operated plunger.

CAMCORDER—A portable video camera with videotape recorder (VTR) and a microphone attached to form a signal unit.

CAMEL-HAIR BRUSH—Term used to define any brush with superfine, soft bristles used for dusting lenses and front surface mirrors.

CAMERA—A lighttight chamber, usually fitted with a lens, through which the image of an object is recorded on a light-sensitive material.

CAMERA, IDENTIFICATION—A type of still-picture camera used primarily for the making of identification photographs.

CAMERA, REFLEX—A camera containing a reflecting mirror within the box, so the image may be focused on a ground glass on top of the camera. A single-lens reflex camera has a device to swing the mirror out of the way during the exposure. A twin-lens reflex camera uses two lenses: one for the viewing image and one for the actual picture-making.

CAMERA, VIEW—A tripod-mounted camera that has incorporated into its construction a long bellows, a rising and falling front, horizontal and vertical swing, lateral shift of front and back, and either a reversible or a rotating back. The view cameras versatility is valuable for the correction of

distortions in architectural, close-up, and illustration photography.

CAPSTAN—An electrically driven roller that rotates and transports the videotape past the recorder heads at a precise and fixed speed.

CASSETTE—A light-trapped metal or plastic container for a length of roll film to enable it to be loaded into a camera in full light.

CCD—Charged-coupled device, also called a chip. A small, solid-state (silicon resin) imaging device used in a video camera instead of camera pickup tubes. Inside the chip, image-sensing elements translate the optical image into a video signal. Chip cameras are insensitive to burn in.

CELL, PHOTOELECTRIC—A device by which light is transformed into electrical energy. Used as the sensitive element in exposure meters and optical sound reproducers and projectors.

CENTIGRADE—A thermometer scale having 100 divisions between the freezing and boiling points of water in universal use for scientific purposes. Also called Celsius after its inventor. Centigrade temperatures may be converted to Fahrenheit temperatures with the following formula:

$$F = 9/5C + 32$$

when F = Fahrenheit temperature and C = Centigrade temperature. (PIA)

CENTIMETER—A unit of length in the metric system which is 0.01 of a meter. According to American standards, 1 inch is equivalent to 2.54 centimeters (cm). (PIA)

CHARACTER GENERATOR—An electronic device to create words or graphics that may be electronically inserted or “keyed” over the video picture.

CHARACTERISTIC CURVE—The curve showing the relationship between exposure and resulting density in a developed photographic image. It is usually plotted as the density against the log exposure in candle-meter-seconds. Called also the “H. and D. curve” and the “sensitometric curve.” The abscissa is sometimes an arbitrary relative exposure.

CHEMICAL FOG—Fog appearing during development of parts of a film not exposed to light. (PIA)

CHROMAKEY—An electronic special effect that combines two video sources into a composite picture, creating the illusion that the two sources are physically together.

CIRCLE OF ILLUMINATION—The total image area of a lens, only part of which is actually used in taking a picture.

CLOSE-UP—A photograph or a motion-picture scene taken at a very close range that shows intimate detail and captures and holds audience interest.

COATING, LENS—A thin, transparent coating applied to the surface of lenses or other optical parts to reduce reflection.

COINCIDENCE—Agreeing as to position. In a coincidence type of range finder, when the two half images of a distant object are in exact juxtaposition, they are said to be “in coincidence.”

COLLIMATED—A beam of light is said to be collimated when all of its rays have been made parallel. See **SPECULAR**.

COLOR BALANCE—The relationship between the three images composing a color negative or positive that provides an accurate (or, more generally, the most pleasing) reproduction of natural colors. (PIA)

COLOR BARS—A color standard used by the television industry for the alignment of cameras and videotape recordings.

COLOR CHART—Target for test photography composed of pigmented areas having colors of high saturation, often accompanied by gray scales, and useful in both color photography and in black-and-white reproduction of colored objects. An assembly of chromatic samples illustrating a scheme of color classification. (PIA)

COLOR COMPENSATING FILTER—A filter used to change the overall color balance of photographic results obtained with color film and to compensate for deficiencies in the quality of the light when printing color films.

COLOR TEMPERATURE—The temperature to which a black body radiator must be raised in order that the light it emits may match a given light source in color; usually expressed in degrees Kelvin (°K).

COLOR TEMPERATURE METER—An instrument for estimating the spectral quality of a light source or the illumination on a scene and expressing the value in terms of color temperature. (PIA)

COLOR TRANSPARENCY—A positive image in natural colors on a transparent support intended for projection or for viewing by transmitted light. (PIA)

COLORBLIND—Applied to photographic layers having only natural silver halide sensitivity to blue, violet, and ultraviolet rays. (PIA)

COMA—An aberration of a lens that causes oblique pencils of light rays from an object point to be imaged as a comet-shaped blur.

COMPONENT—The processing of RGB (red, green, and blue) channels as three separate channels.

COMPOSITE SIGNAL (Y/C)—(Also called NTSC signal.) The video signal in which luminance “Y” (black and white) and chrominance (red, green, and blue) and sync information are encoded into a single signal.

CONJUGATE DISTANCE—The distances of object and image from the lens are called conjugate distances. For every position that an object may occupy with respect to a lens, there is a corresponding position for the image.

CONTACT PRINT—Print produced by exposure in immediate contact with the original or negative. These prints are the same size as the original or negative.

CONTAMINATION—Foreign matter in a processing solution which impairs its operation.

CONTINUOUS TONE—Photographs in which the detail and tone values of the subject are reproduced by an infinite gradation of gray densities between white and black. (PIA)

CONTRAST, LOW—A term expressing a relationship of image tones in which highlights and shadows are represented by very little difference in densities.

CONTRASTY—Photographic term applied to images showing accentuated highlights and shadows. (PIA)

CONTROL TRACK—The area of the videotape used for recording the synchronization information (sync spikes).

COPY—(1) Any document or photograph to be reproduced. (2) The results of such reproduction. (3) (Verb) The act of reproducing a document.

COPYBOARD—The board, frame, or other device for holding copy to be photographed.

CORROSION—The erosion of metals, as by the action of an acid or an alkali; rusting; oxidation. (PIA)

COUPLER—Chemical compound in color developer that can react with the oxidized developing agent in the sensitized material to form a dye color.

CRITICAL FOCUS—That point of focus at which resolution is at its maximum. (NMA)

CROP—To trim or cut off parts of the picture by printing methods to eliminate superfluous portions, and thus improve the composition.

CROP MARKS—Markings placed on original copy, indicating where part of the top, bottom, or sides of the picture are to be omitted.

CURVATURE OF FIELD—An aberration of a lens that causes the image of a plane to be focused into a curved surface instead of into a plane.

CUTAWAYS (MOTION PICTURE)—Shots of related and previously established outside interest used to divert the audience attention in order to cover jumps in action, screen-direction changes, and passage of time.

D-LOG E CURVE—*See* CHARACTERISTIC CURVE.

DARK SLIDE—The opaque slide that covers the film in a film holder, plate holder, film pack, or film magazine.

DARKROOM—A room in which all light of color quality not safe for undeveloped sensitized materials has been excluded. It is used for loading and unloading and the developing of exposed photographic film or paper.

DENSITOMETER—Device to measure the optical density of an image or base by measuring the amount of incident light reflected or transmitted. (NABDC)

DENSITY—The light-absorbing quality of a photographic image is usually expressed as the logarithm of the opacity. Several specific types of density values for a photograph may be expressed; however diffuse transmission density is one of the most important for photographic transparency materials, such as negatives. Diffuse reflection density is generally of interest for photographic prints.

DEPTH—In a nonstereoscopic picture, an illusion of three-dimensional space that is sometimes created by a combination of favorable lighting and coloring of the set and favorable viewing conditions for the reproduction.

DEPTH OF FIELD—The distance between the points nearest and farthest from the camera that are acceptably sharp at a given lens setting.

DEPTH OF FOCUS—The allowable error in lens-to-film distance within which an acceptably sharp image of the subject focused upon will still be obtained.

DEVELOPER (CHEMICAL)—A chemical reagent used to produce a visible image on an exposed photographic layer.

DEVELOPER, COLOR—A photographic developing solution capable of reducing silver halides with the simultaneous production of an insoluble colored oxidation product in the regions where silver is deposited.

DEVELOPING AGENT—Chemicals used in the photographic processing baths to convert the latent image into a visible and photographically useful image.

DIAPHRAGM—A device, such as a perforated plate or an iris, that limits either the aperture of the lens, the field covered by the lens, or both, depending upon its location.

DICHROIC FOG—A deposit of colloidal silver on a photographic film caused by improper processing. This deposit commonly appears red by transmitted light and greenish by reflected light.

DIFFRACTION (OPTICS)—The bending of light waves around the edges of opaque objects.

DIFFUSER—Device for obtaining diffuse direct illumination, such as a wire screen, piece of cloth, or translucent membrane, placed between a light source and the subject illuminated.

DIFFUSION—(1) (Optical) The scattering of light rays so as to cause the light falling on a surface or passing through an aperture to be coming from all directions in contrast to the regular radiation of light from a point source. Diffusion may be introduced by reflection from a matte surface, by transmission through a frosted or opal glass, or by the use of an integrating bar. When diffusion is complete, a sharp image of the light source can no longer be seen, and its place is taken by a uniform, extended source that emits light equally in all directions. (2) (Chemical) The migration of molecules or ions in a solution tending to reduce a difference in concentration between two adjacent regions.

DIGITAL VTR—A videotape recorder that translates and records the analog video signal in digital form.

DIRECT POSITIVE—A positive image obtained directly from another positive image without the use of a negative.

DODGING—A printing technique in which certain areas being exposed are temporarily shielded, thereby producing a different exposure than that used for the rest of the print.

DROPOUT—A loss of part of the video signal that appears as white glitches. Caused by dirty VTR heads or poor quality videotape.

DRY MOUNTING—A method for mounting photographs or artwork on a support by means of a thermosetting laminate that is heated to effect a bond. (PIA)

DRYING MARK—Spots or streaks on negatives and prints differing in density from the surrounding area, produced by uneven drying of the film during processing.

DUB—Duplication of an electronic recording, either tape to tape, record to tape, or vice versa. Dub is always one generation away from the original recording.

EKTACHROME—A trademark of Eastman Kodak Company for a multilayer reversal color film in which couplers are incorporated in the emulsion layers that form dyes in the emulsion during processing.

EKTACOLOR—A trademark of Eastman Kodak Company for a multilayer color negative film in which dye couplers are incorporated in the emulsion layers which upon development produce dye images complimentary to the object colors. Unused couplers remaining in the emulsion after development provide automatic masking for correction.

ELECTROMAGNETIC SPECTRUM—The entire range of wavelengths, extending from the shortest to the longest or conversely, that can be generated physically. This range of electromagnetic wavelengths extends almost from zero to infinity and includes the visible portion of the spectrum known as light.

EMULSION (SILVER HALIDE)—A suspension of light-sensitive silver salt, especially silver chloride or silver bromide, in a colloidal medium, usually gelatin, used for coating photographic film, plates, or papers.

EMULSION SIDE—That side of a (single coated) photographic film on which the emulsion has been coated

EMULSION SPEED—A comparative measure for a given emulsion of exposure to light required to produce a correctly exposed image.

ENLARGEMENT—A print made from a smaller negative through a projection process.

ENLARGER—A photographic projection printer. (PIA)

EXHAUSTION—The state of depletion reached by a processing solution due to age or use that makes it incapable of producing satisfactory results. (PIA)

EXPIRATION DATE—A date placed on sensitized photographic material packaged by the manufacturers to limit the period during which it is warranted to produce normal results.

EXPLODED VIEW—A photograph showing the correct sequence and relationship of the various parts of an assembly. Also called an exploded photograph.

EXPOSURE—(1) The act of exposing a light-sensitive material to a light source. (2) A section of a film for an individual exposure, as a roll containing six exposures. (3) The time during which a sensitive surface is exposed, as an exposure of 2 seconds. (4) The product of light intensity and the time during which it acts on a film, plate, or paper.

EXPOSURE INDEX—An exposure index is the rating of a film for use in connection with exposure tables, exposure computers, and exposure meters.

EXTENSION TUBE—A device used to increase the lens-to-film distance for extreme closeup photography.

FAHRENHEIT—A thermometer scale, on which, under standard atmospheric pressure, the freezing point of water is 32 degrees, and the boiling point of water is 212 degrees; usually indicated as 32°F and 212°F. Fahrenheit temperatures may be converted to Centigrade temperatures with the following formula:

$$C = 5/9 (F - 32)$$

when C = Centigrade temperature and F = Fahrenheit temperature. (PIA)

FAST—Having a high-photographic speed. The term may be applied to a photographic process as a whole, or it may refer to any element in such a

process, such as the optical system, the emulsion, or a developer.

FAST FILM—Photographic material of relatively high sensitivity to light, having a high-exposure index. (PIA)

FIELD—Scanning lines in one half of one video or television frame. There are two fields (one odd, one even) in a frame. One field equals 262.5 scanning lines that create a total of 525 standard television lines or one frame. Also known as the NTSC signal (U.S. T.V. system).

FILM, COLORBLIND—Film which is sensitive only to light of very short wavelengths (ultraviolet, violet, and blue). (NMA)

FILM, PHOTOGRAPHIC, INFRARED—Film coated with an emulsion especially sensitive to infrared light.

FILM, PHOTOGRAPHIC, ORTHOCHROMATIC (ORTHO)—A black-and-white film coated with an emulsion that is sensitive to ultraviolet, violet, blue, and green radiation. Not being sensitive to red, red objects photographed with orthochromatic films are rendered dark on the print.

FILM, PHOTOGRAPHIC, PANCHROMATIC (PAN)—A black-and-white film coated with an emulsion that is sensitive to ultraviolet, violet, blue, green, and red radiation. The special sensitivity of panchromatic films approach that of the human eye.

FILM, PHOTOGRAPHIC, REVERSAL—A film which after exposure is processed to produce a positive image instead of the customary negative image. Reversal films may be black and white or color.

FILTER—Photographic. A layer of glass, gelatin, or other material used to modify the transmitted light selectively.

FILTER, NEUTRAL DENSITY—One not selective for a certain portion of the spectrum but absorbing all colors equally, thus reducing the intensity of light without changing its chromaticity.

FILTER FACTOR—The number of times exposure must be increased to compensate for light absorbed by a filter.

FIXED FOCUS—The term applied to optical instruments and photographic equipment that are not provided with a means for focusing.

FIXER—A solution used to remove undeveloped silver halides from photosensitized emulsions. The fixer usually contains sodium or ammonium thiosulfate, a hardening agent, and an acid or acid salt.

FIXING AGENT—A photographic chemical that dissolves the silver halides not used for producing an image to preserve the photograph from further photographic effect upon subsequent exposure to light. Common fixing agents are sodium thiosulfate and ammonium thiosulfate.

FLARE—A defect of optical systems in which scattered light resulting from reflections at optical surfaces, the walls of the camera, or imperfections in the optical parts, reaches the image plane and produces an overall fog or flare spot that damages the photographic quality of the resulting record.

FLASH, ELECTRONIC—A high-voltage light source for photographic illumination, producing a momentary flash of light of high intensity in an atmosphere of gas enclosed in a tube that can be used repeatedly. (PIA)

FLAT—An image is said to be “flat” if its contrast is too low. Flatness is a defect that does not necessarily affect the entire density scale of a reproduction to the same degree. Thus a picture may be “flat” in the highlight areas or “flat” in the shadow regions, or both.

FLOATING LID—A lid designed to float on the top of a photographic processing solution to reduce aerial oxidation.

FLOODLIGHT—A photographic light used to produce even lighting on large subjects. A floodlight spreads light evenly over a wide angle, as distinguished from a spotlight that concentrates light in a beam.

FLUID OUNCE—A unit of capacity in the Liquid Measure System equal to 1.8 cubic inches; it is equal to 29.57 milliliters.

FOCAL PLANE—The surface (plane) on which an axial image transmitted by a lens is brought to sharpest focus; the surface occupied by the light-sensitive film or plate in the camera.

FOCAL POINT—The point at which converging rays of light from a lens meet.

FOCUS—(1) The point at which rays of light passing through different parts of a lens converge to form a sharp image of the original. (2) (Verb) To adjust the position of either the lens or focusing screen in a

camera or projector to secure the sharpest possible image of the object.

FOG—Nonimage photographic density. The defect is due either to the action of a stray light, to improperly compounded processing solutions, or to wrongly stored or outdated photographic materials.

FOREGROUND (PHOTOGRAPHY)—That part of the landscape imaged in a horizontal or oblique photograph that is closer than the principal object to the camera. (ASP)

FRAME—(1) Any single exposure contained within a continuous sequence of photographs. (2) The smallest unit in television or film—a single picture. A complete scanning cycle of the two fields every 1/30 second. A frame equal to 525 scanning lines.

FREEZE FRAME—Arrested motion that is perceived as a still shot.

FULL APERTURE—The maximum opening of a lens diaphragm. (PIA)

FULL STOP—The standard series of diaphragm markings, or stop openings, that are 0.7, 1.0, 1.4, 2.0, 2.8, 4.0, 5.6, 8, 11, 16, 22, 32, 45, 64, 90, and 128.

FUZZINESS—Lack of image sharpness caused by a defective lens, poor focus, movement, and so forth.

GAIN—The level of amplification for video or audio signals. Increasing the video gain increases the picture contrast.

GENERATION—The number of dubs or copies away from the original recording. The greater number of generations, the greater loss of picture quality.

GRADUATE—A container for liquids marked off to measure various volumes. (PIA)

GRAIN—The discrete particles of image silver in photographs. The random distribution of these particles in an area of uniform exposure gives rise to the appearance known as “graininess.”

GRAININESS—The subjective impression of non-uniformity in an area of a photograph corresponding to uniform exposure, most often noticeable in enlargements with a magnification of 10 or more.

GRANULARITY—An objective quantitative measure of graininess.

GROUND GLASS—A sheet of glass with a grained or matte (translucent) surface, a focusing screen, diffusing screen, and so forth. (PIA)

GUIDE NUMBER—Values assigned to photographic flood and flash lamps according to American Standard to rate their light output in terms useful in exposure calculation. The guide number for a particular lamp used with a particular film is divided by the distance in feet from the lamp to the subject to find the f/number.

HALATION—A halo or ghost image surrounding the true image of a bright object on a photographic emulsion, caused by reflection of rays of light from the back of the negative material.

HALFTONE—Reproduction of a photograph in which the gradation of tone is reproduced by various sized dots and intermittent white spaces caused by interposing a screen between the lens and the film. (IABPAI)

HALIDE—Any compound of chlorine, iodine, bromine, or fluorine, and silver. Silver bromide, silver chloride, and silver iodide are the light-sensitive materials in silver emulsions.

HANGER, FILM—A frame, usually of metal or plastic, for holding one or more photographic films to facilitate handling during processing.

HARDENER—A chemical that increases the melting point of gelatin in photographic layers and prevents softening in warm-processing baths. Hardeners commonly used in photographic processing baths are aluminum potassium sulfate, chromium potassium sulfate, and formaldehyde solution. (PIA)

HAZE—The presence of foreign matter in the atmosphere to an extent sufficient to reduce even slightly its transparency.

HEAD-ON SHOT—A directionless shot in which the subject comes directly toward the camera. Used to change screen direction.

HEADS—A small assembly within an audio or video recording system that can erase, record, or playback the signal in electromagnetic impulses.

HELICAL SCAN, OR HELICAL VTR (ALSO CALLED SLANT TRACK)—A videotape recording or a videotape recorder in which the video signal is put on tape in a slanted, diagonal way. Because the tape wraps around the head drum in a spiral-like configuration, it is called helical.

HIGH-ANGLE SHOT—A scene photographed on a downward angle; the camera being placed above the action.

HIGH CONTRAST—A term expressing a relationship of image tones in which highlights and shadows are represented by extreme differences of density.

HIGH KEY—A term applied to a photographic print or subject consisting entirely of light tones with little contrast; also applied to a method of lighting a subject.

HIGHLIGHT—The bright parts of a picture or subject that are rendered as dense areas in the negative and by very low density in the print.

HUE—That attribute of certain color perceptions in respect to which they differ characteristically from the gray of the same lightness and which permits them to be classed as reddish, yellowish, greenish, or bluish.

HYDROMETER—Generic term for various instruments designed to determine the specific gravity of liquids. (PIA)

HYDROQUINONE $C_6H_4(OH)_2$ —Common photographic developing agent para-dihydroxybenzene.

HYPERFOCAL DISTANCE—The distance from the optical center of lens forward to the nearest plane in acceptable focus when the lens is focused at infinity distance.

ILLUMINANCE—Luminous flux incident per unit area of a surface. Widely known as illumination.

IMAGE, LATENT—The invisible image produced by the action of radiant energy on a photosensitive surface. It may be made visible by the process of photographic development.

IMAGE, NEGATIVE—A photographic image in which the values of light and shade of the original subject are represented in inverse order. In a negative, light objects are represented by high densities and dark objects are represented by low densities.

IMAGE, POSITIVE—A photographic image in which the values of light and shade of the original subject are represented in their natural order. In a positive, light objects are represented by low densities and dark objects are represented by high densities.

IMAGE PLANE—The plane in which the image lies or is formed. It is perpendicular to the axis of the lens. A real image formed by a converging lens would be visible upon a screen placed in this plane.

INCANDESCENT—Glowing with heat, such as the tungsten filament in an incandescent lamp.

INCIDENCE—The act of falling upon or affecting, as light upon a surface.

INFINITY—A distance so far removed from an observer that the rays of light reflected to a lens from a point at that distance may be regarded as parallel. A distance setting on a camera-focusing scale.

INFRARED—Pertaining to or designating those rays which lie just beyond the red end of the visible spectrum. They are invisible and are detected by their thermal, photoelectric, and photographic effects. Their wavelengths are longer than those of light and shorter than those of radio waves.

INTERNEGATIVE—An internegative film is a negative derived directly from a color reversal original film. All other color-duplicating negatives derived from any other than reversal film are known as color-duplicating negatives regardless of the generation.

INVERSE SQUARE LAW—The intensity of light received at a point (irradiance) varies inversely as the square of the distance from the source. The law holds for relatively small sources only and is useful in calculating photographic exposures. (PIA)

IRIS DIAPHRAGM—Term applied to the adjustable aperture fitted into the barrel of the photographic lenses and so-called because of the contraction of the aperture resembles that of the iris (pupil) in the human eye. It consists of a series of thin metal tongues overlapping each other and fastened to a ring on the lens barrel, the aperture made smaller or larger by turning the ring. (PIA)

JOGGING—Frame-by-frame advancement of videotape.

KELVIN (°K)—Measurement of the color of light in degrees. Numerically, the Kelvin temperature is equal to the Centigrade temperature plus 273 degrees.

KEY LIGHT—The main source of illumination on a subject. (PIA)

LAMP, PHOTOFLOOD—A lamp designed to yield brilliant diffuse illumination. These lamps are generally short-lived. (NMA)

LAMP, REFLECTOR FLOOD—Light bulb with self-contained silvered surface to act as a reflector.

LAMP HOUSE—That portion of an enlarger, reader, or projector that contains the light source and condensers or mirror.

LAW OF REFLECTION—The angle of reflection is equal to the angle of incidence.

LENS—In photography, the optical instrument or arrangement of light-refracting elements in a group; the whole designed to collect and distribute rays of light in the formation of an image.

LENS, COMPOUND—A lens composed of two or more separate elements with a common axis. (PIA)

LENS, MIRROR—One employing reflecting elements in addition to light-transmitting elements; usually to obtain compactness in telephoto objectives. (PIA)

LENS ELEMENTS—Individual simple lenses that are combined to form a compound lens. (PIA)

LIGHT, AMBIENT—Surrounding light; the general room illumination or light level.

LIGHT, DIFFUSED—Light that does not reach the subject in a single beam but is scattered by a medium, such as clouds, ground glass, spun glass, or thin fabric.

LIGHT, FILL-IN—Secondary illumination directed to illuminate shadow areas and avoid excess contrast. Also known as fill light. (PIA)

LIGHT, INCIDENT—The light that strikes an object, distinguished from the light reflected from or transmitted by the object. (PIA)

LIGHT, POLARIZED—Light in which the electric vector of the wave vibrates in one plane, rather than all planes, as it does in ordinary (unpolarized) light. Light may become polarized by reflection or by passing through optical devices or sheets known as “polarizers.”

LIGHT BOX—A device for viewing transparencies or negatives, providing diffuse illumination evenly dispersed over the viewing area.

LIGHT SENSITIVE—Materials that undergo changes when exposed to light. The commonly used photographic light-sensitive materials are the silver halides used in films and papers, diazo dyes, and bichromated gelatin. (PIA)

LIGHTING, FLAT—Illumination of a photographic subject often achieved by frontlighting or multiple sources with diffusers that minimizes contrasts and shadows. (PIA)

LIGHTING, FRONT—Illumination on the subject coming from near the camera position. (PIA)

LIGHTING, INDIRECT—Illumination by means of light reflected to the scene from shielded sources.

LIGHTING, LOW KEY—A type of lighting which when applied to a scene results in a picture having gradations from middle gray to black, with comparatively limited areas of light gray and whites.

LINE COPY—A document consisting essentially of two tones (such as black and white, black and tinted, and brown and buff) without intermediate tones.

LITER—A unit of capacity in the metric system, equivalent to 1.056 quarts in United States customary liquid measurement. (PIA)

LOADING—The insertion of photographic film, plates, or paper into holders, hangers, magazines, and so forth, before exposure or processing.

LONG SHOT—In motion pictures, a scene filmed at a considerable distance from the camera to establish locale. Also applied to scenes which show full-length figures, as opposed to waist-length, head and shoulders, and so forth.

LOW-ANGLE (SHOT)—Where camera is placed low and the scene is photographed at an upward angle.

LUX—Lumen per square meter, a unit of illuminance.

MASK—(1) An opaque sheet of thin material used to limit the area of a picture or to secure white margins on a photograph. (2) A supplementary negative or positive used for the purpose of contrast correction in black-and-white prints. (3) A supplementary positive either on a separate sheet or incorporated in an integral color tripack negative for the purpose of color correction. (PIA)

MATTE—A relatively dull surface on photographic prints, having a very low level of specular reflection.

MATTE BOX—A device attached to the front of a camera to hold mattes, filters, diffusing screens, and so forth, in front of the lens.

MEDIUM—Any substances or space through which light can travel.

METER—A unit of length measurement in the metric system approximately equal to 39.37 inches.

METOL-HYDROQUINONE (M-Q)—Designating photographic developers that use a combination of metol and hydroquinone as the developing agent.

METRIC SYSTEM—A decimal system of measurement based on the meter as the unit of length, the kilogram as the unit of mass, and the liter as the unit of capacity.

MICRON—A unit of length in the metric system equal to 0.001 millimeter.

MILLILITER—A unit of volume in the metric system.

1 mL = 0.03381 fl oz

29.57 mL = 1 fl oz

3785 mL = 1 gal

MILLIMETER—A unit of length measuring 0.001 of a meter; 25.4 millimeters equal approximately 1 inch.

MILLIMICRON—A unit of length in the metric system equal to 0.001 micron. It is also equivalent to 10 angstroms.

MODELING—Photographic term for the feeling of “plasticity” engendered by a photograph or the three-dimensional effect produced in a photograph by effective camera work and lighting. (PIA)

MOTTLE—A photographic defect characterized by nonuniform density differences; usually in the pattern of tiny, circular areas.

MOUNT, BAYONET—A means of quickly attaching or removing a lens or filter by turning through only part of a revolution.

MOUNTING—The process of fastening a photographic print to a support.

NEAR POINT—The nearest object to the camera that is still acceptably sharp when the camera is focused for a given distance.

NEGATIVE, BLACK-AND-WHITE—A photographic image on film or paper in which light tones are rendered dark and dark tones appear light.

NEGATIVE, COLOR—A negative record of the color values of the original object. Not only are light values represented by negative densities but colors are represented negatively by their color complements. (PIA)

NEUTRAL—Hueless or achromatic color; gray. Chemically, a solution that is neither acid nor alkaline. (PIA)

NOISE—Unwanted sounds or electrical interference in an audio or video signal. In the audio track, there is a hiss or humming sound. In the video picture the interference appears as “snow.”

NORMAL—Sometimes called the perpendicular. An imaginary line forming right angles with a surface or other lines. It is used as a basis for determining angles of incidence, reflection, and refraction.

NOTCHING CODE—One or more notches of characteristic shape placed by the manufacturer in one edge of a sheet of photographic film to identify the emulsion side and the emulsion type. (PIA)

NTSC—National Television Standards Committee. U.S. standards for television or video signal broadcasting. Also known as the composite signal (Y/C).

OPACITY—(1) The ability of an object to absorb light. (2) Photographic term for the light-stopping power of the silver deposit in negative images. Opacity = 100/Transmittance in percent.

OPAQUING—All handwork on a negative to remove spots or unwanted images.

OPEN FLASH—A method of taking photoflash pictures in which the camera shutter is held open during the flash and then closed.

OPTICAL CENTER—The point, generally within a lens but sometimes exterior to it, at which the optical axis and all chief rays of oblique ray bundles intersect.

ORIGINAL—Material from which copies are made, such as handwritten copy, typed copy, printed matter, tracings, drawings, and photographs. (IABPAI)

OVERCOATING—A thin layer of clear or dyed gelatin sometimes applied on top of the emulsion surface of a film to act as a filter layer or to protect the emulsion from abrasion during exposure and processing.

OVERDEVELOP—To permit a photographic image to be developed too much because of one or more of the following factors: (1) excessive time, (2) excessive temperature, (3) overstrength of developer solution, and (4) excessive agitation.

OVEREXPOSE—To permit too much exposure of a photographic emulsion. This may be caused by (1) too brilliant light, (2) too large an aperture, or (3) too much time.

OVEREXPOSURE—A photographic exposure that exceeds the maximum latitude of the sensitized materials.

OXIDATION—Chemical combination of oxygen with other substances. In photography, the loss of activity of developer solutions is due partly to oxidation of the developing agent with oxygen in the air and partly to oxidation with the silver halide during development. (PIA)

PAN (WITH A CAMERA)—During the course of photographing a scene, to swing the camera around in such a way as to follow the action. Derived from: Panorama. Camera pans are commonly described as slow-pan, fast-pan, swish-pan, and jerky-pan.

PAPER, VARIABLE CONTRAST—Photographic paper coated with emulsions having contrast characteristics grading from soft to hard, depending on the color of the exposing light as modified by a series of filters supplied for that purpose.

PARALLAX—The apparent displacement of an object seen from different points. Commonly encountered in photography in the difference between the image seen in the viewfinder and that actually taken by the lens.

PERSISTENCE OF VISION—A property of the eye that consists of an inability to detect the flickering of a light that exceeds a certain critical frequency.

PERSPECTIVE—The relative size and alignment of objects as recorded on a plane surface; the illusion of three dimensions created on a flat surface.

PHOTOELECTRIC CELL—A cell that converts light energy proportionally into electrical energy. It is used in exposure meters and sound recorders and reproducers.

PHOTOMETER—An instrument for measuring the visual intensity of light, specifically for comparing the relative intensities of light emitted from different sources of illumination. (PIA)

PICKUP TUBE—The imaging device of a video camera that converts light into electrical energy—the video signal.

PINHOLE—(1) Term applied to tiny spots in a photographic negative; usually produced as the shadow of a dust particle during exposure, more rarely the result of chemical dust contamination or gas bubble formation in the gelatin layer due to improper processing. (2) Tiny or white or clear areas in a print or drawing material.

PINT, LIQUID—A unit of capacity equal to 16 fluid ounces, or 473.17 milliliters.

PIXEL—The smallest single picture element with which an image is constructed. The light-sensitive elements in a CCD (chip) camera.

PLANE—A surface which has no curvature; a perfectly flat surface.

POLARIZER—An optical device for converting unpolarized, or natural light, into polarized light.

POSITIVE, BLACK AND WHITE—A photographic image on film, plate, or paper in which light tones appear light and dark tones are rendered dark

POSITIVE FILM—Photographic film, designed for the printing of positive transparencies from negatives.

POSITIVE PRINT—A print in which the light and dark areas as they exist in the original.

POTASSIUM BROMIDE (BROMIDE OR POTASH), KBr—White crystals, very soluble in water. Used as a restrainer in developing solutions. Also used in bleaches and clearing solutions.

POTASSIUM HYDROXIDE KOH—Caustic alkali used as an accelerator in photographic developers. Concentrated solutions are quite caustic and will attack the skin, causing painful burns. Similar to sodium hydroxide.

POWER, RESOLVING—The measure of the ability of a lens, a photographic material, or a combination of both, to distinguish detail under certain specific conditions, among which are the shape and contrast of the target, the quantity of illumination, the exposure and the method of processing. The measure of this ability is expressed in lines per millimeter or in angular resolution of a lens.

PREROLL—To start a videotape and let it roll for a few seconds before it is put in the playback or record mode, so the electronic system has time to stabilize.

PRESERVATIVE—The ingredient of a photographic developer that protects it from rapid oxidation.

PRINTER, CONTACT—A photographic printer in which the negative is held in contact with print material during the exposure. The image of a print made with a contact printer is the same size as the image in the negative.

PRINTER, PROJECTION—A photographic printer in which the negative is positioned some distance from the print material; the image being projected onto the print material. The image of a print made with a projection printer is usually larger than the image in the negative.

RADIANT ENERGY—Energy in the form of an electromagnetic wave; for example, gamma rays, X rays, ultraviolet energy, light, infrared energy, radiant heat, and radio waves.

RADIATION—The process of emitting electromagnetic energy.

RECIPROCITY LAW—Exposure is equal to the intensity of the exposing light multiplied by the time during which it acts. The same density should be produced in a photosensitive material by an equal exposure obtained by doubling the intensity of the light and cutting the time of the exposure in half. This law is only approximately followed by photographic materials, and deviations from it are known as “reciprocity law failures.”

RECTILINEAR—In a straight line. When applied to a lens, it indicates that images of straight lines produced by the lens are not distorted.

REDUCING AGENT—A chemical constituent of a photographic developer that changes the exposed silver halide to metallic silver. Reducing agents must be combined with other chemicals to confine their activity to the silver grains that have been exposed, to control the rate of reaction, and to preserve the agent from combining with oxygen in the air before it can do the work of development. Reducing agents are also called photographic developers.

REFLECTED LIGHT—Light that has been deflected from an opaque surface; not having been absorbed.

RELATIVE APERTURE—The relative aperture is the ratio of equivalent focal length to the diameter of the effective aperture. The symbol for relative aperture written as a fraction is $f/$ followed by a numerical value. To illustrate, the expression $f/2$ signifies that the diameter of the effective aperture is one half of the focal length.

RELATIVE HUMIDITY—Ratio of aqueous vapor present in a space at a given temperature, as compared with the greatest amount it could possibly contain at that temperature.

REPLENISHER—An additional agent used to maintain the chemical strength of a processing solution at a constant level. (NMA)

RESOLUTION—In optics, the ability of a lens system to reproduce an image in its finest details. See RESOLVING POWER.

RESOLVING POWER—The degree to which a lens, optical system, or film emulsion is able to define the details of an image, expressed as the maximum number of black lines, with equal white interspaces per millimeter discernible in the image. Results obtainable for a given lens or emulsion vary with contrast of the original image and with development.

RESTRAINER—The ingredient of a photographic developer that prevents too rapid development and that minimizes chemical fog.

RETICULATION—A processing defect affecting gelatin layers on a photographic film which, upon drying, shows an irregular surface due to the formation of small, irregular scaly patterns. Sharp differences in the temperatures of successive processing solutions and insufficient hardening of the gelatin are the usual causes of reticulation.

RGB—The separate red, green, and blue color (chrominance), or “C”, video signals.

SCALE, FOCUSING—A calibrated scale that permits focusing a camera without the use of a range finder or ground glass.

SCRIM—Diffusing medium placed in front of lamps.

SEMIMATTE—A surface having a moderate, interrupted sheen midway between glossy and dull, or full matte.

SENSITIVITY—The degree to which an emulsion reacts by the formation of a latent image under given exposure conditions, especially as this relates to exposure by different wavelengths (colors) of light. (NMA)

SENSITIZING DYE—Any dyestuff used for sensitizing a photographic emulsion.

SENSITOMETER—An instrument with which a photographic emulsion is given a graduated series of exposures to light of controlled spectral quality, intensity, and duration.

SHADOW—General term for the thinner areas of a negative or the darker areas of an original.

SHOT—(1) Motion picture. The most basic unit of a film; a single scene; the continuous action occurring from the time the camera is turned on to the time it is turned off. (2) Still picture. A single exposure or photograph.

SHUTTER, BETWEEN-THE-LENS—A shutter whose blades operate between two elements of the

lens, as differentiated from the focal plane or behind-the-lens shutters. Sometimes applied to an iris diaphragm whose blades operate between lens elements.

SHUTTER, FOCAL-PLANE—A shutter located near the focal plane and consisting of a curtain with a slot that is pulled across the focal plane to make the exposure. The width of the slit and the speed it is moved determine the duration of the exposure.

SHUTTER RELEASE—A device to actuate a camera shutter.

SHUTTER SPEED—The length of time that light is permitted to act upon film or paper as a result of the shutter having opened and closed.

SILHOUETTE—An art term for the outline of a form in black or white that is offset by a background of the contrasting color. (PIA)

SILVER HALIDE—A compound of silver and one of the following elements known as halogens: chlorine, bromide, iodine, and fluorine. (NMA)

SLANT TRACK—Same as helical scan.

SODIUM HYDROXIDE (CAUSTIC SODA, SODIUM HYDRATE), NaOH—A deliquescent white material usually available as pellets, flakes, or sticks. Soluble in water with the liberation of heat. A very active accelerator used in high-energy developers. Concentrated solutions are quite caustic and will attack the skin, causing painful burns.

SODIUM THIOSULFATE (THIOSULFATE OF SODA, HYPO) $\text{Na}_2\text{S}_2\text{O}_3 \cdot 5\text{H}_2\text{O}$ —Colorless crystals, very soluble in water. It is the principal constituent of most fixing solutions. It may be available in the anhydrous form.

SOFT—(1) As applied to a photographic emulsion or developer, having a low contrast. (2) As applied to the lighting of a set, diffuse, giving a flat scene in which the brightness difference between highlights and shadows is small.

SOFT FOCUS—An unsharp photographic image or a special lens or exposing technique by means of which it is produced. (PIA)

SPECIFIC GRAVITY (LIQUID AND SOLID)—The ratio of the weight of a substance to the weight of an equal volume of distilled water.

SPECULAR—Like a mirror, reflecting in a regular manner so that clear images may be formed, nondiffusing.

SPOT—A contraction of “spotlight”; a lamp which projects a narrow, strong beam of light. (Verb) To remove spots from photographic prints, sometimes called “positive retouching” or “print retouching.”

SQUEEGEE—(1) A rubber blade mounted in a holder which, when drawn over the surface of a wet film or paper, removes the surface liquid. (2) Rollers used for the same purpose. (3) On continuous processing machines, air squeegees may be used that remove surface liquid by either suction or by blowing air against material being processed.

STAIN—A local or general discoloration of negatives and prints.

STEP TEST—(1) A series of exposures made with gradual increases in illumination used to determine proper exposure conditions. (2) To test for contrast or latitude, you can use a step wedge in a single exposure. (NMA)

STOP BATH—A stop bath is an acid solution used to arrest development by neutralizing the alkaline developer with which the photographic material is saturated as it leaves the developing bath.

STROBE—Designates an electronic flash lamp.

SUBTRACTIVE PRIMARIES—The three printing colors used in three-color subtractive color processes: magenta (minus green), cyan (minus red), and yellow (minus blue-violet). (PIA)

SYNCHROFLASH—Photographic arrangement whereby a photoflash lamp is timed to provide illumination at the instant when the camera shutter is wide open.

TIME BASE CORRECTOR (TBC)—An electronic accessory to a videotape recorder that helps make playbacks or transfers electronically stable. A TBC helps to maintain picture stability even in dubbing-up operations.

TIME TEMPERATURE CHART—A table showing the optimum time of development at the standard temperature for various photographic materials in a given developer or for different times of development in order to obtain equivalent development at nonstandard temperatures. (PIA)

TONE—(1) In a photographic negative or print, the degree of lightness or darkness of the various parts of the image. (2) A term applied to the color of the image in a photographic print; that is, warm, cold, sepia, and so forth.

TRANSILLUMINATE –To illuminate through a document, from the side opposite the camera.

UNDERDEVELOPMENT –Insufficient development; due to developing for too short a time, use of a weakened developer or, occasionally, too low a temperature.

UNDEREXPOSURE–Insufficient exposure of a photographic material, causing thin or weak images and a corresponding loss of detail. (PIA)

VANISHING POINT–In a perspective view, the point where parallel lines receding from the observer seem to come together.

VELOCITY OF LIGHT–Term applied to the speed of light waves in a vacuum (Co); 229,792.5 kilometers per second, or approximately 186,000 miles per second. In all other media, light travels at a slower rate.

VIDEO CASSETTE–A plastic container in which a videotape moves from a supply reel to a take-up reel. Used in all but the 1-inch VTRs.

VISIBLE SPECTRUM–The portion of the electromagnetic spectrum to which the retina is sensitive and by which we see. Extends from about 400 to 750 millimicrons in wavelengths of radiation.

VTR–Videotape recorder or recording. Includes video cassette recorders.

WASHING–Act of removing soluble chemicals from photographic layers through the agency of water, especially the removal of fixation products and hypo in order to avoid subsequent fading or discoloration of the silver image.

WATER SPOTS–Deformation of photographic gelatin layers on a film or plate due to differential drying when water drops stand on the surface and keep the gelatin wet and swollen after the surrounding gelatin has become dried and compressed. The spots have a characteristic appearance when a negative on which they occur is printed. Viscose sponges and wetting solutions (detergents) are commonly used to avoid such defects. (PIA)

WAVELENGTH–Length of a wave measured from any point on one wave to the corresponding point on the next wave; usually measured from crest to crest. Wavelength determines whether radiant energy is classed as gamma rays, X rays, or ultraviolet, visible, infrared radiant energy, or radio. Wavelength of visible radiant energy is the chief determinant of its perceived color.

WETTING AGENT–A chemical added to water to reduce surface tension, thereby improving wetting characteristics and reducing the formation of water drops. (NMA)

Y/C–The separate processing of the luminance (Y) and chrominance (C) signals.

APPENDIX II

FORMULAS

Relative Aperture: $f = \frac{F}{D}$

Hyperfocal Distance: $H = \frac{F^2}{f \times C}$

Near Distance: $ND = \frac{H \times D}{H + D}$

Far Distance: $FD = \frac{H \times D}{H - D}$

Ratio between image size and object (subject) size: $R = \frac{\text{Image size}}{\text{Object size}}$

Object Focal Distance: $F + (F \times R)$

Image Focal Distance: $F + (F \times R)$

IFGA: $\frac{I}{F} = \frac{G}{A}$

Filter Factor Exposure Compensation: $\frac{\text{ISO}}{\text{Filter Factor}}$
or
 $\text{Shutter Speed} \times \text{Filter Factor}$

Exposure: $E = I \times T$ or $H = E \times T$

Bellows Extension:

New Exposure Time $\left(\frac{BE}{FL}\right)^2 \times T$
or

Adjusted f/stop: $\frac{\text{indicated f/stop} \times \text{focal length}}{\text{lens-to-film distance}}$

Fahrenheit to Celsius: $^{\circ}F - 32 \times \frac{5}{9}$

Celsius to Fahrenheit: $^{\circ}\text{C} \times \frac{9}{5} + 32$

Changing Solution Strength: $\frac{\text{Amount Wanted} \times \text{Strength Desired}}{\text{Strength on Hand}}$

Exposure Time (in seconds) for Motion-Picture Camera: $\frac{\text{Shutter-Degree Opening}}{360 \times \text{fps}}$

APPENDIX III

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Assignment Questions

<p><u>Information:</u> The text pages that you are to study are provided at the beginning of the assignment questions.</p>

ASSIGNMENT 1

Textbook Assignment: "Theory of Light and Optical Principles." Pages 1-1 through 1-37.

- | | |
|---|--|
| <p>Learning Objective: Identify principles and characteristics of light.</p> <hr/> | |
| 1-1. In what range of the electro-magnetic spectrum does light exist? | 1-6. The distance from the crest of one wave to the crest of the next wave of light describes what term? |
| 1. 1nm to 100,000nm
2. 10nm to 10,000nm
3. 100nm to 1,000nm
4. 400nm to 700nm | 1. Frequency
2. Speed
3. Wavelength
4. Distribution |
| 1-2. What theory was published by Max Planck to explain X ray, radiation, and photoelectricity? | 1-7. What color of light is made up of an even mixture of all the visible wavelengths? |
| 1. Wave motion
2. Quantum
3. Raster
4. Electromagnetic | 1. White
2. Black
3. Blue
4. Green |
| 1-3. What theory explains reflection, refraction, diffraction, and polarization? | 1-8. The spectral energy of a light source is represented by |
| 1. Wave motion
2. Quantum
3. Photo optics
4. Electromagnetic | 1. speed
2. frequency
3. wavelength
4. color temperature |
| 1-4. A nanometer is equal to what number of millimeters? | 1-9. The color temperature of red light is less than the color temperature of blue light. |
| 1. 1/10
2. 1/100
3. 1/1,000
4. 1/1,000,000 | 1. True
2. False |
| 1-5. The speed of light is always constant. | 1-10. What scale is used to measure the color temperature of light? |
| 1. True
2. False | 1. Fahrenheit
2. Celsius
3. Kelvin
4. Chromaticity |
| | 1-11. Color hue is defined as what property of color? |
| | 1. Brightness
2. Purity
3. Saturation
4. Color |

1-12. The terms dull, bright, vivid, and brilliant are used to describe what color characteristic?

1. Hue
2. Brightness
3. Saturation
4. Purity

Learning Objective: Identify ways in which light reacts with various mediums.

1-13. When light waves encounter an object, which of the following actions may take place?

1. Reflection
2. Absorption
3. Transmission
4. Each of the above

1-14. Specular light strikes a smooth surface at 60 degrees. At what angle is the light reflected?

1. 30 degrees
2. 60 degrees
3. 90 degrees
4. 120 degrees

1-15. Which of the following descriptors best defines an object that is opaque?

1. Very hard
2. Highly reflective
3. Light stopping
4. Each of the above

1-16. A change in direction that occurs when light passes from one transparent medium into another is known by what term?

1. Refraction
2. Reflection
3. Diffraction
4. Dispersion

1-17. What characteristic of light allows a lens to form an image?

1. Reflection
2. Diffraction
3. Refraction
4. Dispersion

1-18. Of the following wavelengths, which one has its speed reduced the most when it enters a medium of higher density?

1. Red
2. Yellow
3. Green
4. Blue

1-19. What term describes the ability of a prism to break up white light into its component colors?

1. Refraction
2. Diffraction
3. Dispersion
4. Polarization

1-20. A light ray is bent as it passes very close to an opaque object. What term is used to describe this event?

1. Dispersion
2. Refraction
3. Polarization
4. Diffraction

1-21. When the motion a light wave is in one direction only, the light is

1. parallel
2. polarized
3. planed
4. directionless

1-22. What type of light is seen as glare?

1. Plane polarized
2. Diffused
3. Tungsten
4. Fluorescent

Learning Objective: Recognize various sources of light and the differences between them.

- 1-23. What color of light is scattered the most by the atmosphere?
1. Red
 2. Green
 3. Yellow
 4. Blue
- 1-24. What is the approximate color temperature of overhead sunlight on a clear day?
1. 2000 K
 2. 3200 K
 3. 5400 K
 4. 60000 K
- 1-25. You have exposed daylight balanced color slide film under fluorescent light without a filter. What color cast do the finished slides have?
1. Blue
 2. Green
 3. Yellow
 4. Red
- 1-26. What is the main purpose of a lamp reflector?
1. To increase the amount of light emitted by a lamp
 2. To diffuse light
 3. To polarize light
 4. To redirect light
- 1-27. Most electronic-flash units are designed to be most efficient when they are at what distance from the subject?
1. 3 to 10 feet
 2. 6 to 12 feet
 3. 10 to 18 feet
 4. 12 to 36 feet

Learning Objective: Identify basic characteristics of photographic lenses.

- 1-28. The inherent errors of a lens are known by what term?
1. Faults
 2. Defects
 3. Aberrations
 4. Parallax
- 1-29. The inability of a lens to focus sharply both horizontal and vertical lines on the same plane is what lens aberration?
1. Astigmatism
 2. Coma
 3. Spherical
 4. Chromatic
- 1-30. The distance from the optical center of the lens to the film plane is 150mm. The image on the film is in sharp focus. The lens is focused on an object at infinity or 640 feet away. What is the focal length of this lens?
1. 50mm
 2. 85mm
 3. 135mm
 4. 150mm
- 1-31. The focal length can be changed in what type of lens?
1. Mirror
 2. Zoom
 3. Macro
 4. Anamorphic
- 1-32. What factor determines the normal focal-length lens for a camera?
1. Film size
 2. Shutter type
 3. Camera size
 4. Lens-to-film distance
- 1-33. Providing the camera-to-subject distance remains unchanged, which of the following focal-length lenses provides the greatest subject area?
1. 200mm
 2. 100mm
 3. 50mm
 4. 25mm

1-34. Which of the following focal-length lenses used at the same lens-to-film distance will produce the largest image of the subject?

1. 135mm
2. 80mm
3. 50mm
4. 25mm

1-35. The angle of field for a normal lens is within a range of how many degrees?

1. 25° to 35°
2. 45° to 55°
3. 75° to 85°
4. 95° to 105°

1-36. What type of lens has an angle of view greater than 55 degrees?

1. Telephoto
2. Mirror
3. Wide angle
4. Long-focal length

1-37. What is the final result when an image is recorded with a lens that has a large diaphragm opening?

1. Moving objects appear sharp
2. All objects within the scene appear sharp
3. Angle of view is increased
4. Only the object the lens is focused on appears sharp

1-38. Photographic perspective depends on the focal length of the lens.

1. True
2. False

1-39. The lens you are using is focused on infinity and set at f/8. The size of the aperture is 1/2 inch. What is the focal length, in inches?

1. 1
2. 2
3. 8
4. 4

Learning Objective: Recognize the function and the effects of the aperture of a lens.

1-40. The lens you are using is set at f/16 and is focused less than infinity. What is the relative aperture of the lens?

1. f/8
2. f/11
3. f/16
4. f/22

1-41. What is the relative aperture of a 6-inch lens with an effective aperture of 1.5 inches?

1. f/4
2. f/5.6
3. f/8
4. f/11

1-42. Three lenses of different focal lengths are used at the same f/stop to photograph the same subject. What lens, if any, produces the brightest image on the film plane?

1. 200mm
2. 50mm
3. 28mm
4. None

1-43. Which of the following terms describes the device within a lens that controls the amount of light passed by the lens to the film plane?

1. Concentricizer
2. Diaphragm
3. Adjuster
4. Obstructor

1-44. What term is used to describe the largest aperture of a lens?

1. Refraction index
2. Closed-down aperture
3. Lens speed
4. Optimum aperture

1-45. Which of the following f/stops represents the largest aperture?

1. f/5.6
2. f/8
3. f/22
4. f/32

1-46. You have changed the lens setting from f/5.6 to f/16. What term describes the action you have taken?

1. Stopping down
2. Opening up
3. Racking out
4. Sliding back

1-47. You have changed the f/stop setting from f/16 to f/8. What amount of light is admitted to the film plane?

1. One half
2. Two times
3. One quarter
4. Four times

1-48. A lens set to f/8 produced a correct exposure in 1 second. When you set the lens at f/4, what is the correct exposure time, in seconds?

1. 1
2. 2
3. 1/2
4. 1/4

1-49. Of the following f/stops, which one is not a standard, full f/stop?

1. f/1
2. f/2.5
3. f/5.6
4. f/45

Learning Objective: Identify factors that affect the means in which a lens focuses an image.

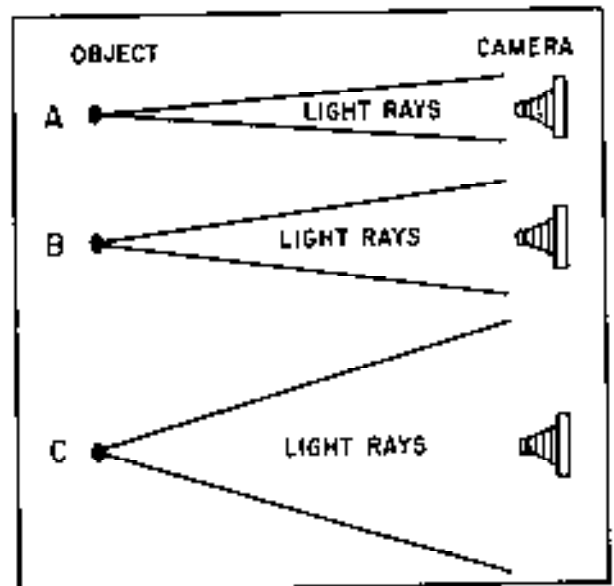


Figure 1A

IN ANSWERING QUESTION 1-50, REFER TO FIGURE 1A.

1-50. What object is represented as being the greatest distance from the camera?

1. A
2. B
3. C

1-51. The principal focal plane is located a total of how many inches behind a 3-inch focal-length lens?

1. 1.5
2. 6
3. 3
4. 4

1-52. As an object moves closer to the lens, what distance, if any, must the film plane to the lens change in order to keep the image in sharp focus?

1. It must be increased
2. It must be decreased
3. None

- 1-53. What distance is required between the lens and the focal plane so the image formed by a 2-inch focal-length lens is the same size as the subject?
1. 1 inch
 2. 2 inches
 3. 1.4 inches
 4. 4 inches
- 1-54. The distance the focal plane can be moved forward or backward from the plane of sharp focus and still record an acceptably sharp image is known by what term?
1. Depth of field
 2. Circle of confusion
 3. Depth of focus
 4. Hyperfocal distance
- 1-55. What term describes the distance from the lens beyond which all objects are rendered in acceptably sharp focus when the lens is set at infinity?
1. Hyperfocal distance
 2. Depth of field
 3. Depth of focus
 4. Near distance
- 1-56. What is the hyperfocal distance of a 6-inch lens set at $f/11$ when the permissible circle of confusion is 0.006 inches?
1. 2.38 feet
 2. 36.72 feet
 3. 545.45 feet
 4. 3361.11 feet
- 1-57. Your lens is set at $f/11$, the hyperfocal distance is 71 feet, and your subject is 112 feet from the camera. You should focus at what distance for maximum depth of field?
1. 35.5 feet
 2. 56.0 feet
 3. 71.0 feet
 4. 112.0 feet
- 1-58. Of the following lenses, which one provides the greatest depth of field when set at $f/5.6$ and focused on an object 6 feet from the lens?
1. 35mm
 2. 50mm
 3. 80mm
 4. 135mm
- 1-59. Which of the following factors affects depth of field?
1. Lens focal length
 2. Lens f /stop
 3. Camera-to-subject distance
 4. All of the above
- 1-60. You are using a lens focused on the hyperfocal distance which is 50 feet. What is the approximate depth-of-field range?
1. 25 feet to 75 feet only
 2. 25 feet to infinity
 3. 50 feet to infinity only
 4. 75 feet to infinity only
- 1-61. What is the depth of field of a 50mm lens set at $f/8$ with a permissible circle of confusion of 0.002 inches when it is focused on an object 20 feet from the lens?
1. 10.0 feet to 20.0 feet
 2. 15.7 feet to 23.4 feet
 3. 18.6 feet to 21.7 feet only
 4. 20.0 feet to 23.8 feet only
-
- Learning Objective: Determine the relationship between the subject/image size.
-
- 1-62. A document is 1-inch square. You must photograph it to produce a 4-inch-square image on the film. Using a 6-inch lens, what image focal distance is required?
1. 10 inches
 2. 12 inches
 3. 24 inches
 4. 30 inches

- 1-63. The size of the image formed by a lens depends on which of the following factors?
1. The size of the subject
 2. The lens-to-subject distance
 3. The lens focal length
 4. All of the above
- 1-64. A 10-inch focal-length lens is used to photograph an object 8 feet high from a distance of 28 feet. What image size is on the film plane?
1. 1.25 inches
 2. 2.50 inches
 3. 2.85 inches
 4. 5.70 inches
- 1-65. You are assigned to photograph an object 10 feet wide using a 4x5-inch camera with a 7-inch lens. You must position your camera what distance from the object to produce a 3-inch image?
1. 1.40 feet
 2. 11.65 feet
 3. 23.30 feet
 4. 46.60 feet
- 1-66. Using a 35mm camera with a 50mm lens, you have photographed a subject. However, the shooting-crew supervisor informs you that a 4x5-inch negative is required. You cannot change your shooting position. What focal-length lens should you use on the 4x5 camera to obtain approximately the same coverage produced with the 35mm camera?
1. 360mm
 2. 210mm
 3. 90mm
 4. 65mm

Learning Objective: Identify various types of lenses and their characteristics.

- 1-67. Which of the following are characteristics of a long-focal-length lens?
1. They have a reduced depth of field
 2. They decrease the apparent distance between subjects on different planes
 3. Both 1 and 2 above
 4. They introduce image distortion
- 1-68. A wide-angle lens has which of the following characteristics?
1. Increased depth of field
 2. Exaggerated linear perspective
 3. Increased apparent distance between planes
 4. All of the above
- 1-69. When photographing a building, you notice in the viewfinder that the sides of the building appear to be bending toward the center of the image area. What type of lens is on your camera?
1. Rectilinear
 2. Wide angle
 3. Normal
 4. Telephoto
- 1-70. The distortion caused by wide-angle lenses actually changes perspective.
1. True
 2. False
- 1-71. Which of the following lenses is very useful for taking pictures of extreme closeups shots?
1. Fisheye
 2. Rectilinear
 3. Telephoto
 4. Macro
- 1-72. Of the following lenses, which one is best for taking informal portraits with a 35mm camera?
1. 100mm
 2. 50mm
 3. 35mm
 4. 17mm

- 1-73. You are photographing a row of aircraft on the flight deck. Using a medium-format camera, you should use which of the following lenses to make the aircraft appear to be parked very close to each other?
1. 500mm
 2. 150mm
 3. 75mm
 4. 40mm
- 1-74. Of the following characteristics, which one is NOT representative of a mirror lens?
1. Shorter physical size
 2. Out-of-focus highlights that record as rings of light
 3. Wide range of f/stops
 4. Limited depth of field
- 1-75. What type of lens is used to change the image size without changing the lens-to-film distance?
1. Macro
 2. Zoom
 3. Mirror
 4. Telephoto

ASSIGNMENT 2

Textbook Assignment: "Light-Sensitive Materials" and "Photographic Filters." Pages 2-1 through 3-12.

<hr/> <p>Learning Objective: Identify basic characteristics of light-sensitive materials.</p> <hr/>	
2-1. What type of salts is used to make photographic film?	2-6. Exposure to light causes what invisible change to a photographic emulsion?
<ol style="list-style-type: none">1. Gelatin2. Halide3. Oxide4. Silver	<ol style="list-style-type: none">1. Film speed2. Development3. Black-metallic silver4. Latent image
2-2. Undyed silver halides are sensitive to what color of light?	<hr/> <p>Learning Objective: Identify film characteristics that you must take into consideration when selecting a type of film for a photographic assignment.</p> <hr/>
<ol style="list-style-type: none">1. Blue2. Green3. Yellow4. Red	2-7. The inherent property of a film emulsion to respond to light is known by what term?
2-3. What portion of photographic film or paper is light sensitive?	<ol style="list-style-type: none">1. Film speed2. Spectral sensitivity3. Exposure latitude4. Emulsion definition
<ol style="list-style-type: none">1. Base2. Emulsion3. Antihalation backing4. Overcoating	2-8. What organization is responsible for the approval of a uniform set of film-speed standards?
2-4. What is the primary purpose of the base portion of photographic film and paper?	<ol style="list-style-type: none">1. Eastman Kodak Company2. Morgan and Morgan Corporation3. International Standards Organization4. Film Speed Organization of America
<ol style="list-style-type: none">1. It prevents the emulsion from being damaged2. It suspends the silver halides3. It supports the emulsion4. It contains sensitizing dyes	2-9. A film may be assigned more than one film speed for which of the following reasons?
2-5. Because of the nature of the recording medium used in still video and digital cameras, they must be loaded in complete darkness.	<ol style="list-style-type: none">1. Because the film may be used in hot or cold weather2. For use with fast or slow shutter speeds3. Because the emulsion may respond differently to different qualities of light4. To provide the photographer with an option of shooting fast or slow subject motion
<ol style="list-style-type: none">1. True2. False	

- 2-10. What is/are the numerical value(s) assigned to film for exposure calculation?
1. ISO
 2. Exposure Index
 3. Both 1 and 2
 4. Light-meter Index
- 2-11. What does the term "spectral sensitivity" refer to in photographic emulsions?
1. The manner that the film responds to light only
 2. The intensity of light required to produce the proper exposure
 3. The duration of light or radiant energy required to produce a visible color image
 4. The way the emulsion responds to specific colors of light and invisible radiations
- 2-12. Colorblind emulsions are sensitive to which of the following colors of light?
1. Blue
 2. Green
 3. Red
 4. Yellow
- 2-13. Which of the following is NOT a classification of black-and white film?
1. Infrared
 2. Ultraviolet
 3. Panchromatic
 4. Orthochromatic
- 2-14. Red records on an orthochromatic film in what manner?
1. As a light-blue color
 2. As a dense deposit of silver
 3. As a clear area
 4. As a light-red color
- 2-15. To what type of radiation is a panchromatic emulsion NOT sensitive?
1. Infrared
 2. Ultraviolet
 3. Blue light
 4. Green light
- 2-16. To prevent the exposure of infrared film by UV radiation, you should use what color filter?
1. Blue
 2. Red
 3. Green
 4. Yellow
- 2-17. What areas of a black-and-white negative have the greatest amount of silver deposits?
1. Contrast points
 2. Midtones
 3. Highlights
 4. Shadows
- 2-18. What term describes the amount of silver deposit present in any area of a negative?
1. Highlight
 2. Contrast
 3. Midtone
 4. Density
- 2-19. What term describes the difference in densities between areas of a negative?
1. Contrast
 2. Latitude
 3. Emulsion definition
 4. Resolving power

2-20. Which of the following definitions best describes "emulsion latitude"?

1. The ability of a film to reproduce brightness differences
2. The amount of deviation from the correct exposure that will still produce acceptable densities
3. The evenness of the emulsion thickness applied to the film base
4. The variation in film processing time that still permits the emulsion to respond to the action of the fixing bath

2-21. What is exposure latitude?

1. The difference in negative densities
2. The amount of exposure variation that will still produce an acceptable image
3. The minimum exposure required to produce sufficient shadow detail
4. The amount of density produced by a given exposure

2-22. What factor(s) determine(s) the graininess of a negative?

1. Manufacturing
2. Exposure
3. Development
4. All of the above

2-23. All processed black-and-white film produces images with metallic silver.

1. True
2. False

2-24. The ability of a emulsion to record fine detail is known by what term?

1. Clumping action
2. Resolving power
3. Acutance
4. Graininess

2-25. The ability of an emulsion to produce sharp edges between differences in density is known by what term?

1. Clumping action
2. Resolving power
3. Acutance
4. Graininess

Learning Objective: Recognize components of black-and-white and color films.

2-26. Film is protected from friction, scratches, and abrasions before development by what part of the film?

1. Overcoating
2. Base
3. Antihalation backing
4. Noncurl coating

2-27. What part of the film prevents light from reflecting back from the base and affecting the light-sensitive silver halides?

1. Overcoating
2. Emulsion
3. Antihalation backing
4. Noncurl coating

2-28. The top emulsion layer of color film is sensitive to what color of light?

1. Blue
2. Green
3. Red
4. Yellow

2-29. What is the purpose of the yellow filter incorporated between the blue and green emulsion layers of color film?

1. To enhance the contrast
2. To prevent blue light from affecting the middle and bottom emulsion layers
3. To prevent the film from being affected by UV radiation
4. To aid in printing color negatives

- 2-30. In a color negative, what color is the image of a red subject?
1. Blue
 2. Magenta
 3. Red
 4. Cyan
- 2-31. In color-reversal film, what color is the image of a red subject?
1. Red
 2. Magenta
 3. Blue
 4. Cyan
- 2-32. Daylight color film may be used without filtration under which of the following light sources?
1. Sunlight
 2. Electronic flash
 3. Both 1 and 2
 4. "Daylight" fluorescent lights
- 2-33. As a Navy Photographer's Mate, you should only use a professional type of film.
1. True
 2. False
- 2-34. Instant picture film is very useful when used in which of the following situations?
1. Passport photographs
 2. Identification photographs
 3. Determining test exposures
 4. All of the above

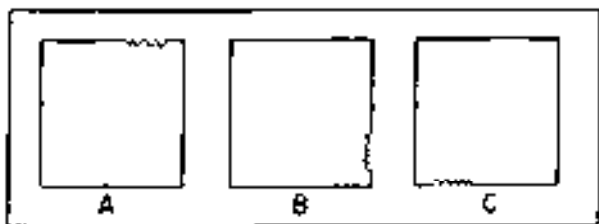


Figure 2A

IN ANSWERING QUESTION 2-35, REFER TO FIGURE 2A.

- 2-35. What segment(s) of figure 2A represent(s) a sheet of film with the emulsion facing you?
1. A
 2. B
 3. C
 4. Each of the above
- 2-36. When images are stored on a still-video floppy disk, what mode(s), if any, provide(s) the highest quality image?
1. Frame only
 2. Field only
 3. Both frame and field modes provide the same image quality
 4. None
- 2-37. What number of images can be stored on a floppy disk when used in a still-video camera set on the "field" setting?
1. 20
 2. 36
 3. 50
 4. 100

Learning Objective: Identify characteristics of photographic papers.

- 2-38. When, if ever, is panchromatic printing paper used in making black-and-white prints?
1. When printing high-contrast negatives
 2. When printing low-contrast negatives
 3. When using color negatives to produce black-and-white prints
 4. Never, panchromatic papers are only used for making color prints

2-39. The top emulsion layer of variable contrast, black-and-white paper is sensitive to (a) what color of light and produces (b) what type of contrast?

1. (a) Blue (b) high
2. (a) Green (b) low
3. (a) Blue (b) low
4. (a) Green (b) high

2-40. You are using variable contrast, black-and-white printing paper. The contrast of the print is primarily controlled by what stage of printing.

1. By different exposure times
2. By manipulating the processing time
3. By changing the angle of the projected image
4. By using filters

2-41. Which of the following color papers does NOT directly make a positive image from a color negative?

1. Ektacolor
2. Fujicolor
3. Ektachrome
4. Each of the above

2-42. The top emulsion layer of color paper produces what color of dye?

1. Red
2. Cyan
3. Blue
4. Yellow

2-43. Which of the following paper surfaces should you use to show fine detail in a print?

1. Matte
2. Semimatte
3. Pearl
4. Glossy

2-44. Photographic paper and film should be stored in a location that does not exceed what (a) temperature and (b) relative humidity?

1. (a) 75°F (b) 75%
2. (a) 50°F (b) 50%
3. (a) 75°F (b) 50%
4. (a) 50°F (b) 75%

2-45. You notice that the expiration date on a case of aerial film has expired. Which of the following actions should you take?

1. Discard the film immediately
2. Conduct photographic tests before using the film
3. Ignore the expiration date and use the film for an aerial mission
4. Freeze the film for 24 hours and then use it for Antarctic missions only

Learning Objective: Identify principal types of filters used in black-and-white and color photography.

2-46. What primary factor determines the effectiveness of a photographic filter?

1. The ability of the emulsion to respond to the light passed by the filter
2. The density of the filter
3. The color of the filter
4. The chemicals in which the light-sensitive emulsion is processed

2-47. It is not necessary to use color filters with black-and-white emulsions because only shades of gray are produced.

1. True
2. False

- 2-48. Contrast filters should be used for black-and-white photography for which of the following reasons?
1. To exaggerate a color
 2. To reduce a color
 3. To eliminate a color
 4. Each of the above
- 2-49. You are tasked to copy a document on white paper that contains red, green, and blue lines. You do not want the green lines to be noticeable in the final print. What color filter should you use?
1. Magenta
 2. Red
 3. Green
 4. Cyan
- 2-50. You are using black-and-white panchromatic film under daylight conditions. What color filter should you use to reproduce the colors of the scene with the same brightness relationship as seen by the human eye?
1. No. 8 (yellow)
 2. No. 23A (light Red)
 3. No. 34A (violet)
 4. No. 4 (cyan)
- 2-51. You are photographing a landscape scene with black-and-white panchromatic film. Which of the following filters should you use to reduce the appearance of haze in the final print?
1. Blue
 2. Cyan
 3. Red
 4. Magenta
- 2-52. Light balancing filters are available in what two colors?
1. Yellow and green
 2. Green and red
 3. Blue and red
 4. Blue and yellow
- 2-53. What color of light balancing filter should you use to lower the color temperature of light?
1. Yellow
 2. Green
 3. Red
 4. Blue
- 2-54. What color of light balancing filter should you use to raise the color temperature of light?
1. Yellow
 2. Green
 3. Red
 4. Blue
- 2-55. What type of filter should you use to make minor adjustments to the color quality of light used to expose film?
1. Light balancing
 2. Conversion
 3. Color compensating
 4. Correction
- 2-56. What instrument should you use to determine the color temperature of a light source?
1. Exposure meter
 2. Color analyzer
 3. Color temperature meter
 4. Spot meter
- 2-57. What are the two series of conversion filters?
1. 80 and 81
 2. 80 and 85
 3. 85 and 86
 4. 85 and 90
- 2-58. What color conversion filter is used to expose daylight-type film under tungsten light?
1. Blue
 2. Green
 3. Amber
 4. Cyan

- 2-59. When exposing color film under fluorescent light, you should use what type of filter?
1. Color compensating
 2. Conversion
 3. Correction
 4. Light balancing
- 2-60. What maximum number of CC filters can be used effectively on a camera lens?
1. One
 2. Two
 3. Three
 4. Four
- 2-61. A CC20M filter has a peak density of 0.20 to what color of light?
1. Yellow
 2. Blue
 3. Magenta
 4. Green
- 2-62. What is the complementary color of green?
1. Yellow
 2. Blue
 3. Cyan
 4. Magenta
- 2-63. What combination of complementary colors make up red?
1. Yellow and cyan
 2. Magenta and yellow
 3. Cyan and yellow
 4. Magenta and cyan
- 2-64. What is the equivalent filter pack of a 50G + 20R + 10B CC-filter pack?
1. 40G + 10R
 2. 50G + 20R + 0 ND
 3. 60G + 30R + 20B
 4. 80 ND
- 2-65. Which of the following filters is NOT selective in the color of light it absorbs?
1. Correction
 2. Neutral density
 3. Color compensating
 4. Conversion
- 2-66. What ND filter is used to reduce exposure by two f/stops?
1. .20
 2. 2.00
 3. .30
 4. .60
- 2-67. What color filter is most effective for cutting haze?
1. Red
 2. Yellow
 3. Blue
 4. Green
- 2-68. For which of the following situations may polarizing filters be used?
1. To reduce reflections from water
 2. To reduce the effect of haze
 3. To increase color saturation
 4. Each of the above
- 2-69. Your light meter indicates an exposure of 1/500 sec at f/11. You then add an orange filter with a filter factor of 4. What is your new exposure setting?
1. 1/500 sec at f/22
 2. 1/500 sec at f/8
 3. 1/250 sec at f/11
 4. 1/125 sec at f/11
-
- Learning Objective: Identify the uses for filters in photographic darkrooms.
-

- 2-70. Which of the following light sources is used as a safelight in black-and-white print rooms?
1. Mercury vapor
 2. Sodium vapor
 3. Quartz halogen
 4. Fluorescent
- 2-71. You have a black-and-white negative with high contrast. What color variable-contrast printing filter should you use to produce a print with normal contrast?
1. Blue
 2. Green
 3. Yellow
 4. Magenta
- 2-72. Which of the following filters should always be used in a color printing system?
1. Color compensating
 2. Dichroic
 3. Color printing
 4. Ultraviolet absorbing
- 2-73. What type of filter works on the principle of wavelength interference, rather than wavelength absorption?
1. Color compensating
 2. Color printing
 3. Safelight
 4. Dichroic
- 2-74. CP filters are used the same as CC filters in a color printing system.
1. True
 2. False
- 2-75. Photographic filters should not be exposed to heat above what maximum temperature?
1. 100°F
 2. 120°F
 3. 150°F
 4. 200°F

ASSIGNMENT 3

Textbook Assignment: "Still cameras and Controls." Pages 4-1 through 4-31.

Learning Objective: Recognize similarities and differences among the various categories of cameras and the advantages and disadvantages of each.

Learning Objective: Identify various focusing systems and the importance of subject focus within a scene.

- | | |
|---|--|
| <p>3-1. Which of the following size cameras is most suitable for an assignment that requires a large number of exposures that must be taken in rapid succession?</p> <ol style="list-style-type: none">1. 35mm2. 2 1/4 x 2 3/43. 4x54. 8x10 <p>3-2. Which of the following systems allows you to focus and compose with a picture-taking lens?</p> <ol style="list-style-type: none">1. Rangefinder2. TTL3. SLR4. PMS <p>3-3. On an SLR camera the focal length is fixed and cannot be changed.</p> <ol style="list-style-type: none">1. True2. False <p>3-4. What size film is used in a medium-format camera?</p> <ol style="list-style-type: none">1. 35mm only2. 120 only3. 220 only4. 120 and 220 <p>3-5. What size of camera is most suitable for retaining maximum detail in the negative?</p> <ol style="list-style-type: none">1. 35mm2. 6cn x 7cn3. 4x54. 8x10 | <p>3-6. Which of the following focusing systems should you use when the subject must be photographed to exact scale?</p> <ol style="list-style-type: none">1. TTL2. Ground glass3. SLR4. Rangefinder <p>3-7. Of the following focusing systems, which one is least suitable for photographing a football game?</p> <ol style="list-style-type: none">1. SLR2. Rangefinder3. Ground glass4. Focusing scale <p>3-8. Which of the following focusing systems does NOT permit you to see depth of field in the viewfinder?</p> <ol style="list-style-type: none">1. SLR2. TLR3. Ground glass4. Rangefinder <p>3-9. As a Navy Photographer's Mate, you want everything in your photographs to be in sharp focus.</p> <ol style="list-style-type: none">1. True2. False <p>3-10. What type of focusing should you use to draw attention to the subject in a photograph?</p> <ol style="list-style-type: none">1. Selective2. Chosen3. Pointed4. Impulse |
|---|--|

3-11. Which of the following focal-length lenses used at a given f/stop and lens-to-film distance provides the greatest selective focus affect?

1. 1000mm
2. 400mm
3. 135mm
4. 50mm

3-12. Which of the following factors does NOT affect depth of field?

1. f/stop
2. Lens focal length
3. Shutter speed
4. Subject distance

Learning Objective: Identify purpose and effects of the camera aperture.

3-13. Which of the following camera controls affects the intensity of light falling on the film plane?

1. Shutter
2. Aperture
3. Intensity compensator
4. Preview actuator

3-14. What is the most important factor in controlling depth of field?

1. Shutter speed
2. Subject distance
3. Lens focal length
4. f/stop

3-15. With a given camera and all camera controls remaining constant, what subject distance, in feet, results in the greatest depth of field?

1. 30
2. 20
3. 10
4. 5

3-16. What area of a lens produces the sharpest image?

1. The central part
2. The outer edges
3. Either 1 or 2 above

3-17. Stopping down a lens increases depth of field. In what way, if any, does this action affect image sharpness?

1. It increases overall image sharpness
2. It decreases overall image sharpness
3. None

3-18. The optimum or critical aperture of a lens is generally at what f/stop setting?

1. Wide open
2. Two f/stops from wide open
3. f/11
4. f/32

Learning Objective: Identify purpose and effects of the camera shutter.

3-19. What is the primary function of a camera shutter?

1. To limit the intensity of light emitted to the film
2. To control the quality of light passed to the film
3. To regulate the amount of time that light is permitted to act on the film
4. To stop image motion by limiting the frequency of wave motion permitted to pass through the lens

3-20. Which of the following shutter speeds can be used when a leaf shutter is used with an electronic flash?

1. 1/30 second
2. 1/125 second
3. 1/500 second
4. Each of the above

3-21. What is the primary function of the camera shutter?

1. To control the duration of exposure
2. To control subject movement
3. Both 1 and 2 above
4. To control depth of field

3-22. When increasing the camera shutter speed, you must take what action to expose the film properly?

1. Close down the aperture
2. Open up the aperture
3. Add an ND filter
4. Change the film-speed setting to a higher number

3-23. What sacrifice is made when you increase the camera shutter speed?

1. Camera movement is more apparent
2. A shorter focal-length lens must be used
3. Some depth of field is lost
4. Image sharpness

3-24. You must stop subject motion but cannot afford to loose depth of field. Which of the following actions should you take?

1. Select a faster film
2. Increase the camera-to-subject distance
3. Select a shorter focal-length lens
4. All of the above

3-25. A shutter speed of 1/250 second is required to freeze image motion acceptably. Which of the following shutter speeds can also be used to record the same image motion?

1. 1/30
2. 1/60
3. 1/125
4. 1/500

3-26. When handholding a camera with a 100mm lens, what is the slowest shutter speed you should use?

1. 1/30
2. 1/60
3. 1/125
4. 1/250

3-27. When you are photographing a moving object, which, if any, of the following shutter speeds stops image motion?

1. 1/250
2. 1/500
3. 1/1000
4. None of the above

3-28. Which of the following factors limits the time the image is allowed to move across the film plane?

1. The interval of exposure
2. The direction of subject movement
3. Subject speed
4. Lens focal length

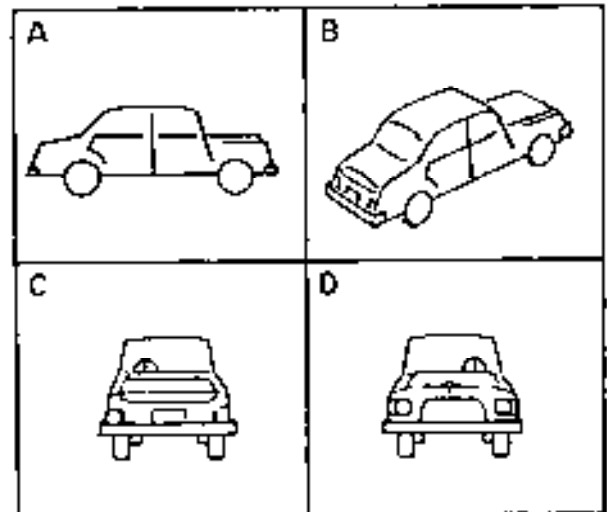


Figure 3A

IN ANSWERING QUESTION 3-29, REFER TO FIGURE 3A.

3-29. From a given camera-to-subject distance, what scene requires the fastest shutter speed to stop image movement?

1. A
2. B
3. C
4. D

Learning Objective: Recognize factors that affect the exposure of photographic film.

3-30. What two factors control camera exposure?

1. Lens speed and film speed
2. Shutter speed and lens aperture
3. Lens aperture and film speed
4. Film speed and reflected light quality

3-31. Your light meter indicates that 1/500 second at f/5.6 will properly expose the film. However, you prefer greater depth of field in the scene. Which of the following equivalent exposures should you use?

1. 1/1000 second at f/4
2. 1/250 second at f/11
3. 1/125 second at f/8
4. 1/60 second at f/16

3-32. Which of the following equations represents exposure?

1. $E = I + T$
2. $H = E \div T$
3. $E = I \times T$
4. $I = E \times T$

3-33. Your light meter indicates an exposure of 1/60 second at f/4 with Ektachrome ISO 100 film. You then change the film in the camera with Ektachrome ISO 400 film. When photographing the same subject under the same lighting conditions, which of the following camera settings should you make?

1. 1/60 second at f/5.6
2. 1/60 second at f/8
3. 1/500 second at f/4
4. 1/500 second at f/8

3-34. On a clear, bright, and cloudless day, the intensity of light remains constant.

1. True
2. False

DAYLIGHT CONDITIONS	
A.	Bright or hazy sun on light sand or snow
B.	Bright
C.	Cloudy bright
D.	Cloudy
E.	Heavy overcast or shade

Figure 3B

IN ANSWERING QUESTIONS 3-35 THROUGH 3-39, REFER TO FIGURE 3B AND SELECT THE DAYLIGHT CONDITION THAT BEST APPLIES TO THE STATEMENT USED AS THE QUESTION.

3-35. The type of daylight upon which basic exposure for an average scene is based:

1. A
2. B
3. C
4. D

3-36. Unobstructed daylight at the beach:

1. A
2. B
3. C
4. D

3-37. Completely diffused daylight:

1. A
2. B
3. C
4. D

3-38. Soft shadows:

1. A
2. B
3. C
4. E

3-39. The sun is not visible and eight times the basic exposure is required:

1. E
2. D
3. c
4. B

IN ANSWERING QUESTIONS 3-40 THROUGH 3-42, USE THE FOLLOWING INFORMATION: THE BASIC EXPOSURE FOR A SCENE IS 1/250 SECOND AT f/16 WITH FRONT SUN LIGHTING.

3-40. Using a shutter speed of 1/250 second, you should use which of the following f/stops when the scene is sidelighted?

1. f/4.5
2. f/5.6
3. f/8
4. f/11

3-41. Which of the following exposures can you use when the scene is backlighted?

1. 1/250 at f/8
2. 1/125 at f/11
3. 1/60 at f/16
4. Each of the above

3-42. Which of the following exposures should you use to produce a silhouette of the scene when it is backlighted?

1. 1/125 at f/32
2. 1/125 at f/22
3. 1/250 at f/16
4. 1/250 at f/11

3-43. You are copying a chart with a 5-inch focal-length lens and a bellows extension of 10 inches. Your handheld light meter indicates an exposure of 1/60 second at f/5.6. With the aperture remaining at f/5.6, you should use what exposure time to expose the film properly?

1. 1/60
2. 1/30
3. 1/15
4. 1/8

3-44. A 6-inch focal-length lens has a bellows extension of 16.5 inches. Your handheld light meter indicates an exposure of 1 second at f/22. What f/stop should you use to expose the film?

1. f/22
2. f/16
3. f/11
4. f/8

IN ANSWERING QUESTIONS 3-45 THROUGH 4-48, USE THE FOLLOWING INFORMATION: THE CORRECT EXPOSURE FOR A GIVEN SCENE IS 1/125 SECOND AT f/11 USING ISO 200 FILM.

3-45. Which of the following exposures should you use when the scene is photographed with ISO 100 film?

1. 1/250 at f/8
2. 1/250 at f/11
3. 1/125 at f/8
4. 1/125 at f/11

3-46. Which of the following f/stops should you use when the scene is photographed with ISO 100 film with a shutter speed of 1/250 second?

1. f/8
2. f/5.6
3. f/4.5
4. f/4

3-47. Which of the following f/stops can you use when the scene is photographed with ISO 400 film with a shutter speed of 1/125 second?

1. f/32
2. f/22
3. f/16
4. f/8

3-48. Which of the following exposures can you use when the scene is photographed with ISO 400 film?

1. 1/1000 at f/5.6
2. 1/500 at f/8
3. 1/250 at f/11
4. Each of the above

3-49. The f/16 rule for exposure calculation only applies to black-and-white photography.

1. True
2. False

Learning Objective: Identify various methods used in determining exposure with a light meter.

3-50. What means provides the most consistent way of determining film exposure?

1. Film data sheets
2. f/16 rule
3. Pocket calculator
4. Light meter

3-51. You are taking an incident light-meter reading. From what position should the light-meter reading be taken?

1. Subject
2. Camera
3. Light source

3-52. You are taking a reflected light-meter reading. You should point the camera in what direction?

1. Toward the subject
2. Toward the camera
3. Toward the light source

3-53. What type of light meter has a diffusing dome that covers the photoelectric cell?

1. Spot
2. Reflected
3. Incident
4. Inversion

3-54. You are using black-and-white film to photograph a green car. You take a reflected light-meter reading from the car. In a properly exposed and processed print, the car has what appearance?

1. Bright white
2. Middle gray
3. Dark black

3-55. You are photographing an average contrast scene and you base your camera exposure on a reflected light-meter reading from the shadow area. After it has been processed properly, the negative has what appearance?

1. Detail in the shadow areas only
2. Washed-out highlights only
3. Both 1 and 2 above
4. Very high contrast

- 3-56. You are taking an overall reflected light-meter reading of a subject that has almost equal areas of highlights and shadows. What type of light-meter reading are you taking?
1. Brightness range
 2. Darkest object
 3. Brightest object
 4. Integrated
- 3-57. You have taken an average light-meter reading of a predominately light scene. The meter indicates an exposure of 1/250 second at f/11. Which of the following exposures should you give the film to reproduce shadow detail?
1. 1/125 at f/11
 2. 1/500 at f/11
 3. 1/125 at f/8
 4. 1/1000 at f/5.6
- 3-58. You took two light-meter readings from a scene. One reading was taken from the darkest object with which you desire details and the other was taken from the lightest area where detail is desired. However, these two objects do not represent the darkest or lightest objects within the scene. What type of reflected light-meter reading did you take?
1. Integrated
 2. Brightness range
 3. Average
 4. Substitution
- 3-59. You are photographing a Navy ship that is probably too distant to get an accurate light-meter reading. You then base your exposure on a gray card. What method of light-meter reading did you use?
1. Average
 2. Integrated
 3. Brightness range
 4. Substitution
- 3-60. You are photographing an average scene but take a light-meter reading from a white card. You desire detail in both shadow and highlight areas. Which of the following exposure compensations should you take?
1. Close down two f/stops
 2. Close down one f/stop
 3. Open up two f/stops
 4. Open up one f/stop
- 3-61. Which of the following statements regarding exposure bracketing is NOT true?
1. Bracketing is permissible for all films, both black and white and color
 2. Bracketing produces varying exposures
 3. Bracketing can be used but precise exposure for color slide film is required
 4. Bracketing should not be used for black-and-white transparencies
- 3-62. You have overexposed color reversal film by one f/stop and have processed the film normally. The film has what general appearance?
1. It is very dark
 2. It is washed out
 3. It has more color saturation
 4. It has excessive contrast
- 3-63. You have processed a roll of negatives normally. Each frame of the roll appears to be overexposed by one f/stop. What is the probable cause?
1. The light meter was set to the wrong ISO
 2. Light entered the viewfinder while the light-meter reading was being taken
 3. A very bright area of the scene influenced the light meter
 4. The batteries in the light meter were too weak

Learning Objective: Recognize various functions of a view camera.

3-64. Of the following types of cameras, which one provides movements and adjustments that permit distortion correction?

1. Single-lens reflex
2. Twin-lens reflex
3. View
4. Direct-vision viewfinder

3-65. View cameras have all but which of the following parts?

1. Monorail
2. Bellows
3. Ground glass
4. Viewfinder

VIEW CAMERA CONTROL

- A. Front swing
- B. Rear swing
- C. Front tilt
- D. Rear tilt
- E. Rising and falling front
- F. Sliding front
- G. Sliding rear

Figure 3C

IN ANSWERING QUESTIONS 3-66 THROUGH 3-71, REFER TO FIGURE 3C AND SELECT THE VIEW-CAMERA CONTROL THAT PROVIDES THE CORRECTION USED AS THE QUESTION.

3-66. Centers the image vertically:

1. C
2. D
3. E
4. F

3-67. Centers the image horizontally:

1. A
2. C
3. E
4. G

3-68. Controls distortion of the vertical plane:

1. B
2. D
3. E
4. G

3-69. Controls distortion of the horizontal plane:

1. B
2. D
3. F
4. G

3-70. Increases depth of field of the horizontal plane:

1. A
2. C
3. E
4. F

3-71. Increases depth of field of the vertical plane:

1. A
2. C
3. E
4. G

3-72. When you are initially setting up the view camera, all controls are lined up and no corrective movements are set. What is this position called?

1. Set up
2. Initial
3. Neutral
4. Starting

3-73. What total number of vertical or horizontal planes can be corrected with a view camera?

1. One
2. Two
3. Three
4. Four

Learning Objective: Recognize differences and similarities of electronic and conventional cameras.

- 3-74. Which of the following electronic cameras provides the highest resolution?
1. Still video
 2. Digital
 3. Analog
 4. Each provides the same resolution
- 3-75. How does the angle of view of a DCS camera compare to the angle of view of a 35mm camera?
1. They are identical
 2. It is less than the 35mm
 3. It is greater than the 35mm

ASSIGNMENT 4

Textbook Assignment: "Basic Photographic Techniques." Pages 5-1 through 5-37.

Learning Objective: Identify general guidelines used in holding cameras steady.

- | | |
|--|---|
| <p>4-1. What is the best way to support a camera?</p> <ol style="list-style-type: none">1. By using a tripod2. By handholding it3. By holding it against a building4. By using a neck strap <p>4-2. Under normal circumstances, you should NOT handhold a camera at shutter speeds that exceed what exposure time?</p> <ol style="list-style-type: none">1. 1/500 sec2. 1/250 sec3. 1/125 sec4. 1/60 sec <p>4-3. Holding the camera steady is most critical when using what focal-length lens?</p> <ol style="list-style-type: none">1. 35mm2. 50mm3. 100mm4. 200mm <p>4-4. When handholding a camera with a 250mm focal-length lens, you should use which of the following shutter speeds?</p> <ol style="list-style-type: none">1. 1/250 sec2. 1/125 sec3. 1/60 sec4. 1/30 sec <p>4-5. What method(s) is/are used to prevent camera shake?</p> <ol style="list-style-type: none">1. Locking the mirror up on an SLR camera2. A tripod3. A cable release4. Each of the above | <p>4-6. To obtain high-quality photographs, you must always use a tripod.</p> <ol style="list-style-type: none">1. True2. False <p>4-7. The use of a monopod is NOT recommended below what shutter speed?</p> <ol style="list-style-type: none">1. 1/15 sec2. 1/30 sec3. 1/60 sec4. 1/125 sec <hr/> <p>Learning Objective: Identify elements of photographic composition.</p> <hr/> <p>4-8. For photographers to be creative, they must have which of the following attributes?</p> <ol style="list-style-type: none">1. An ability to select state of the art equipment2. An ability to handhold the camera at slow shutter speeds3. An ability to see what the camera sees4. An ability to selectively see only important details within a scene <p>4-9. Photographic composition can be improved by which of the following methods?</p> <ol style="list-style-type: none">1. By looking all around within the viewfinder2. By practice only3. By analyzing photographs used in various medias4. All of the above |
|--|---|

- 4-10. A photograph should have what maximum number of center(s) of interest?
1. One
 2. Two
 3. Three
 4. Four
- 4-11. Which of the following methods should you NOT use to draw viewer attention to the center of interest in a photograph?
1. Compose the subject with more than one object
 2. Use a contrasting background to separate the subject
 3. Place the subject in the center of the picture whenever possible
 4. Use lines to draw attention to the subject
- 4-12. You are photographing a scene and people are included, but they are not the center of interest. The people should be composed in the photograph in what manner?
1. In the foreground only
 2. Looking at the subject
 3. As far from the subject as possible
 4. Looking directly into the camera
- 4-13. Which of the following statements regarding simplicity in photographic composition is true?
1. Because of today's advanced technology, a photograph should not be simple
 2. Simple pictures are monotonous and are rejected by most viewers
 3. Simple pictures can be used to make a clear, strong statement
 4. The most successful photographers limit simplicity by having at least two points of interest in each picture
- 4-14. You are photographing the CO of your ship and want him to appear in the picture as a domineering man. What camera angle should you use?
1. Low
 2. High
 3. Eye level
- 4-15. You are photographing a person who is running. What viewpoint should you use to enhance the feeling of speed?
1. Low
 2. High
 3. Eye level
- 4-16. You are photographing a refugee child. From what viewpoint should you take the picture to emphasize the illusion of little strength?
1. Low
 2. High
 3. Eye level
- 4-17. In a photograph, two objects, one on each side of the picture, appear to have equal weight. However, the picture is not symmetrical. What type of balance, if any, has been achieved?
1. Asymmetrical
 2. Informal
 3. Formal
 4. None
- 4-18. A photograph shows several objects. There is an obvious difference in size and weight of the objects. However, the picture still gives the illusion of balance. What type of balance, if any, has been achieved?
1. Formal
 2. Informal
 3. Symmetrical
 4. None

4-19. Which of the following statements concerning photographic balance is NOT true?

1. Objects in the upper part of a picture appear to have more weight than objects in the lower part of the picture
2. Objects close to the middle of a picture appear lighter than objects at the edge of the picture
3. Irregular shapes give the impression of being lighter than regular shapes
4. When an object is isolated, the weight of the object appears to decrease

4-20. In most photographs, an object within the picture is first identified by

1. weight
2. tone
3. form
4. shape

4-21. What is the three-dimensional equivalent of shape?

1. Weight
2. Tone
3. Form
4. Balance

4-22. Which of the following photographic techniques best emphasizes the shape of an object?

1. Silhouette
2. Balance
3. Texturizing
4. Three-dimensional lighting

Learning Objective: Identify methods in which lines are used for photographic composition.

4-23. Lines that lead the eye or direct attention within a photograph are known by what term?

1. Lines of direction
2. Lines of unification
3. Leading lines
4. Linear-perspective lines

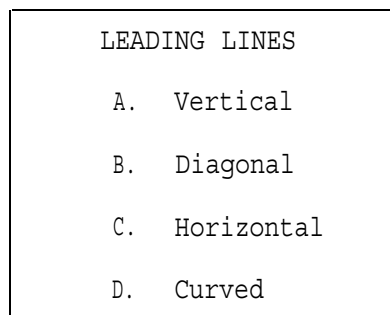


Figure 4A

IN ANSWERING QUESTIONS 4-24 THROUGH 4-36, REFER TO FIGURE 4A. SELECT THE LEADING LINE USED TO PRODUCE THE MOOD THAT IS USED AS THE QUESTION.

4-24. Strength:

1. A
2. B
3. C
4. D

4-25. Graceful movement:

1. A
2. B
3. C
4. D

4-26. Peace:

1. D
2. C
3. B
4. A

4-27. Dignity:

1. A
2. B
3. C
4. D

4-28. Action:

1. D
2. C
3. B
4. A

4-29. Rigidity:

1. A
2. B
3. C
4. D

4-30. Quietness:

1. D
2. C
3. B
4. A

4-31. Smoothness:

1. A
2. B
3. C
4. D

4-32. Grace:

1. D
2. C
3. B
4. A

4-33. Power:

1. D
2. C
3. B
4. A

4-34. Speed:

1. A
2. B
3. C
4. D

4-35. Tranquility:

1. A
2. B
3. C
4. D

4-36. Solidarity:

1. A
2. B
3. C
4. D

Learning Objective: Recognize compositional guidelines in which patterns are used for photography.

4-37. The use of patterns can provide which of the following effects in photographic composition?

1. Support of the elements within a picture
2. Add interest to the picture
3. Overwhelm the viewer
4. Each of the above

4-38. What is the most common pattern used in photographic composition?

1. Line
2. Shape
3. Color
4. Tone

4-39. What key element of composition provides apparent depth to photographs?

1. Lines
2. Shape
3. Shadows
4. Texture

Learning Objective: Identify methods used to draw viewer attention to the center of interest in a photograph.

4-40. Which of the following elements of photographic composition can you use to draw viewer attention to the center of interest?

1. Lighting
2. Texture
3. Contrast
4. All of the above

- 4-41. The view of a gray ship on a foggy morning is an example of what type of scene?
1. Low contrast
 2. Flat
 3. Both 1 and 2 above
 4. Contrasty
- 4-42. The view of a white sailboat in dark-blue water on a clear, sunny day is an example of what type of scene?
1. Low contrast
 2. Flat
 3. Both 1 and 2 above
 4. Contrasty
- 4-43. A photographic technique used to draw viewer attention to the center of interest by surrounding the subject with related objects is known by what term?
1. Keystoning
 2. Framing
 3. High keying
 4. Desegregation
- 4-44. Which of the following techniques can you use to separate the subject from the foreground or background?
1. A large f/stop
 2. Pan the subject
 3. Move in closer to the subject
 4. All of the above
- 4-45. What aspect of good composition is used when the viewer of a photograph gets a feeling of volume, space, depth, and distance?
1. Background
 2. Foreground
 3. Perspective
 4. Framing

Learning Objective: Recognize various types of perspectives and how they are used in photographic composition.

TYPES OF PERSPECTIVE

- A. Linear
- B. Rectilinear
- C. Vanishing Point
- D. Height
- E. Overlap
- F. Dwindling Size
- G. Volume
- H. Atmospheric

Figure 4B

IN ANSWERING QUESTIONS 5-46 THROUGH 5-54, REFER TO FIGURE 4B. SELECT THE TYPE OF PERSPECTIVE THAT BEST APPLIES TO THE STATEMENT USED AS THE QUESTION.

- 4-46. Two parallel roads seem to converge in the background of the picture:
1. A
 2. D
 3. F
 4. H
- 4-47. Straight, parallel, horizontal lines in the subject are recorded on the film as straight lines:
1. A
 2. B
 3. D
 4. H
- 4-48. Parallel lines in a photo seem to meet outside of the picture:
1. A
 2. C
 3. E
 4. H

- 4-49. The distance from the bottom of a picture where the base of an object on the ground begins:
1. D
 2. E
 3. F
 4. G
- 4-50. Several objects within a photograph partly hide one another:
1. C
 2. D
 3. E
 4. G
- 4-51. A number of similar objects within a photograph are shown as different sizes:
1. B
 2. D
 3. F
 4. G
- 4-52. The size of objects within a photograph gives the viewer a clue as to distance:
1. A
 2. C
 3. E
 4. F
- 4-53. The length of shadows provides an idea of the image size of the subject:
1. B
 2. D
 3. E
 4. G
- 4-54. A photograph shows distant objects somewhat obscured by haze:
1. H
 2. F
 3. D
 4. C
- 4-55. Which of the following factors affect linear perspective?
1. Lens-to-subject distance and lens focal length
 2. Lens-to-subject distance and object size
 3. Object size and lens focal length only
 4. Object size and object-to-camera distance
- 4-56. What type of perspective is produced by a panoramic lens?
1. Concave
 2. Cylindrical
 3. Rectilinear
 4. Convex
- 4-57. Two identical objects at different distances from the camera are recorded on film in different contrasts. This difference in contrast provides the viewer with what perception?
1. Color saturation
 2. Brightness
 3. Distance
 4. Sharpness
-
- Learning Objective: Identify that various lighting conditions affect the appearance of the subject.
-
- 4-58. Which of the following terms best describes color saturation?
1. Chroma
 2. Brightness
 3. Hue
 4. Value
- 4-59. Which of the following statements concerning front lighting on a clear day is true?
1. It gives an impression of depth to the photograph
 2. It adds a flattened effect
 3. It emphasizes the texture of the subject
 4. It aides in bringing out the finer details of the subject

4-60. You are tasked to photograph the flight deck of your ship after a new coat of non-skid has been applied. What time of day is best to photograph the flight deck to emphasize the texture of the newly applied non-skid?

1. 1000
2. Noon
3. 1400
4. Early morning

4-61. What type of lighting should you use outdoors to produce a silhouette photograph?

1. Back
2. Side
3. Front
4. 45 degree

4-62. You have processed a roll of daylight-balanced slide film. After removing the film from the dryer, you notice all of the frames taken indoors have a greenish cast. Which of the following light sources was most likely used to photograph the indoor scenes?

1. Electronic flash
2. Tungsten
3. Sodium vapor
4. Fluorescent

Learning Objective: Identify proper techniques used in producing images with electronic-flash units.

4-63. Which of the following factors pertaining to electronic-flash units always remains constant?

1. The f/stop being used
2. The effective candlepower seconds (ECPS)
3. The guide number
4. The film speed

4-64. What two factors are used to determine the guide number of an electronic flash?

1. ECPS and flash-to-subject distance
2. Film speed and flash-to-subject distance
3. ECPS and film speed only
4. f/stop and flash-to-subject distance

4-65. Which of the following is NOT a factor in obtaining correct exposures with an electronic flash and a lens with a leaf shutter?

1. Shutter speed
2. ISO of the film
3. Flash-to-subject distance
4. f/stop

4-66. Of the following flash techniques, which one is least desirable when you are photographing people?

1. Position the flash above the lens
2. Bounce the light from a white ceiling
3. Position the flash below the lens
4. Place diffusion material in front of the flash

4-67. Which of the following actions should you take to minimize the affect of red eye?

1. Have the subject look directly into the lens
2. Move the flash away from the lens axis
3. Move the flash closer to the lens axis
4. Reduce the ambient room light

4-68. You are using the bounce-lighting technique with an electronic flash set to "manual." The flash-to-ceiling-to-subject distance is 14 feet. The guide number of the flash is 220. What f/stop should you use to expose the film correctly?

1. f/16
2. f/11
3. f/8
4. f/5.6

4-69. You are using an electronic-flash unit. Which of the following techniques should you use to minimize distracting background shadows?

1. Hold the flash above the lens
2. Bounce the flash off the ceiling or bulkhead
3. Diffuse the light from the flash unit
4. Each of the above

4-70. What is the best general lighting ratio for both black-and-white and color photography?

1. 1:1
2. 2:1
3. 3:1
4. 5:1

4-71. You are using two flash units with the same ECPS to illuminate the subject. You should place (a) the main light and (b) the fill light at which of the following distances from the subject to achieve a 3:1 lighting ratio?

1. (a) 8 feet (b) 11 feet
2. (a) 6 feet (b) 6 feet
3. (a) 4 feet (b) 16 feet
4. (a) 4 feet (b) 8 feet

4-72. A common occurrence with the synchro-sunlight technique is it produces images of the subject that appear as though they were taken at night with a single flash unit. What is the most probable cause of this problem?

1. The flash unit was not powerful enough
2. The flash illumination overpowered the sunlight
3. The aperture used was too wide
4. The lens was not synchronized with the flash unit

4-73. What is the first step in calculating synchro-sunlight exposure?

1. Determine the correct daylight exposure
2. Determine the desired flash-to-subject distance
3. Establish the camera-to-subject distance
4. Establish the camera-to-flash distance

4-74. You are using an electronic flash unit to light a subject 20-feet away at night. The indicated f/stop on the flash unit is f/11. What f/stop should you use to expose the subject?

1. f/16
2. f/11
3. f/8
4. f/5.6

4-75. You are using two flash units of equal intensity that are equidistant from the subject to illuminate the same area of the subject. The calculated f/stop for one flash unit is f/16. What f/stop should you use to expose the image?

1. f/11
2. f/16
3. f/22
4. f/32

ASSIGNMENT 5

Textbook Assignment: "Photographic Assignments." Pages 6-1 through 6-44.

Learning Objective: Select equipment and techniques best suited for photographing people.

- 5-1. Which of the following statements will best determine your success as a Navy Photographer's Mate?
1. Use only state-of-the-art equipment
 2. Plan for each of your assignments
 3. Use professional film only
 4. Use a 4x5 view camera for the majority of your photographic assignments
- 5-2. The UIC of your imaging facility is 32509. Which of the following serial numbers best represents a local serial number for a camera assigned to your unit?
1. L-069
 2. L/S 32509-069
 3. 069-L-32509
 4. 32509-069
- 5-3. When photographing people, you should strive to achieve which of the following objectives?
1. Display the subject's character
 2. Identify the person clearly only
 3. Exaggerate the facial features of the subject
 4. Always portray the subject in a pleasing, flattering manner
- 5-4. For you to make a candid photograph of a person, the subject must not know that his/her photograph is being taken.
1. True
 2. False
- 5-5. You should normally select which of the following lenses for a 35mm camera to shoot candid photographs?
1. Fisheye
 2. 35mm
 3. 50mm
 4. 135mm
- 5-6. Which of the following statements regarding the technique of framing people in their environment is true?
1. The "frame" should be a subtle part of the photo
 2. The "frame" should be exaggerated
 3. The "frame" must completely surround the subject
 4. The "frame" should be in front of the subject
- 5-7. You are photographing people working in their environment. Which of the following aspects of the finished product is extremely important?
1. The face of the subject must be in full view
 2. The subject must be actually working
 3. The props used in the photograph must be technically correct
 4. A low angle should be used to portray the person in power
- 5-8. In a formal group picture, attention must not be drawn to any one individual in the photograph. However, in an informal group photograph, attention should be drawn toward the most senior member of the group.
1. True
 2. False

- 5-9. You are taking a formal group photograph of eight people. You should arrange them in a total of how many rows?
1. One
 2. Two
 3. Three
 4. Four
- 5-10. You are making a formal group picture of an admiral's staff. The staff consists of the admiral, three captains, seven commanders, two lieutenants, and three CPOs. The admiral should be placed in what location for the picture?
1. On the far right end of the first row
 2. In the center of the back row
 3. In the center of the middle row
 4. In the center of the first row
- 5-11. Which of the following elements of a group photograph is the most difficult to control?
1. The viewpoint
 2. The composition
 3. The people
 4. The distracting background
- 5-12. To take action photographs successfully, you should perform which of the following actions?
1. Anticipate the action
 2. Know the photographic equipment being used
 3. Learn something about the action
 4. All of the above
- 5-13. Action should always be photographed at what time?
1. At the peak
 2. Directly after the peak
 3. Immediately before the peak
- 5-14. You are photographing the Secretary of the Navy presenting a Purple-Heart Medal to an Airman Recruit. Your battle group flag officer and your CO are also involved in the award ceremony. What person should you concentrate on as the center of interest?
1. Secretary of the Navy
 2. Admiral
 3. Commanding Officer
 4. Airman Recruit
-
- Learning Objective: Recognize basic principles of caption writing.
-
- 5-15. Which of the following elements is NOT a basic requirement in caption writing?
1. Explanation
 2. Identification
 3. Credit line
 4. Background information
- 5-16. In a picture caption, what sentence is most important?
1. First
 2. Middle
 3. Last
 4. Closing
- 5-17. When you are writing captions, they should always be written in what (a) voice and (b) tense?
1. (a) Passive (b) past
 2. (a) Active (b) past
 3. (a) Passive (b) present
 4. (a) Active (b) present
- 5-18. The amount of background information included in a caption is determined primarily by which of the following factors?
1. The way the final picture is to be used
 2. The location in which the final picture is to be used
 3. Both 1 and 2 above
 4. The ethnic background of the subject

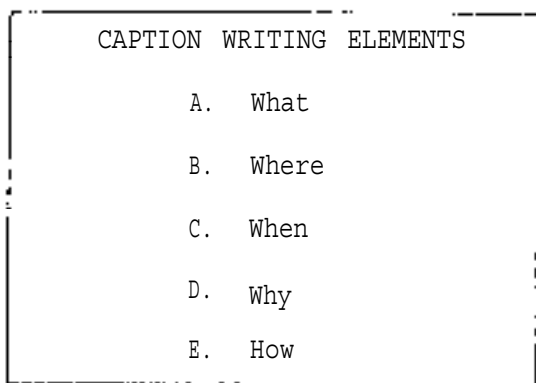


Figure 5A

IN ANSWERING QUESTIONS 5-19 THROUGH 5-22, SELECT THE CAPTION WRITING ELEMENT THAT BEST APPLIES TO THE STATEMENT USED AS THE QUESTION.

5-19. Testing squadron readiness:

1. A
2. B
3. D
4. E

5-20. During July and September:

1. E
2. C
3. B
4. A

5-21. Falling in for muster:

1. A
2. B
3. C
4. D

5-22. On board the USS *Lincoln*:

1. D
2. C
3. B
4. A

5-23. When following the general guidelines for caption writing, you should limit the words to what number?

1. 12
2. 25
3. 50
4. 100

5-24. What element is the most important part of caption writing?

1. Explaining the action
2. Caption length
3. Identifying principal subjects
4. Credit line

5-25. Of the four methods of identifying persons in writing a caption, what method is best?

1. Obvious contrast
2. Elimination
3. From the left
4. Action

5-26. What is the least desirable method of identification used in caption writing?

1. From the left
2. Elimination
3. Obvious contrast
4. Action

Learning Objective: Recognize methods used for investigative photography.

5-27. When photographing a scene as part of an investigation, you should always include which of the following items?

1. The investigative team
2. An overall shot of the scene
3. Close-up photographs of each object in the scene
4. Fingerprints

5-28. You are assigned to take photographs for an investigation. You trip accidentally and knock over several items. Which of the following actions should you take?

1. Photograph the items as they now appear
2. Rearrange the objects as they were and then photograph them
3. Inform the investigative team of your accidental act
4. Say nothing unless asked

5-29. Using color film to photograph the scene of a fire has what primary advantage over black-and-white film?

1. It can be processed faster
2. It records finer detail
3. It can assist in identifying the types of materials being burned
4. It records blackened and charred objects better

5-30. You are taking photographs of a burned-out building. Your basic flash exposure indicates an exposure of f/11. Which of the following aperture settings should you use?

1. f/16
2. f/11
3. f/8
4. f/5.6

5-31. What is the primary purpose of aircraft-accident photography?

1. To identify the person(s) at fault
2. To prevent future accidents
3. To establish the primary cause of the accident
4. To provide photographs for safety grams

5-32. What type of information is NOT required on photographs of an aircraft accident?

1. Type of aircraft
2. Date of accident
3. Name of pilot(s)
4. Type of accident

Learning Objective: Select equipment and methods used in product photography.

5-33. When used properly, which of the following cameras provides the best results when you are photographing small parts in a studio?

1. 35mm SLR
2. Medium-format SLR
3. Medium-format TLR
4. 4x5 view

5-34. The most effective main light for product photography is provided by which of the following light sources?

1. Spotlight
2. Floodlight
3. Fluorescent bulbs
4. Plane reflectors

5-35. In product photography, where is the main light generally located?

1. High and in front of the subject
2. Below and to the side of the subject
3. High and behind the subject
4. Directly above the subject

5-36. In product photography, the subject should appear as though it is illuminated by what number of light source(s)?

1. One
2. Two
3. Three
4. Four

5-37. In the studio, which of the following types of lighting can be used to simulate the light from an overcast sky?

1. Spot
2. Tent
3. Key
4. Flood

- 5-38. When establishing the lighting for a product, you should view the subject from what position?
1. The main light
 2. The fill light
 3. Above the subject
 4. The camera
- 5-39. What type of lighting is used to emphasize the texture of a product?
1. Tent
 2. Fill
 3. Cross
 4. 45 degree
- 5-40. You are using color film for product photography. The areas between the highlights and shadows where you want to record detail should not exceed what number of f/stops?
1. Seven
 2. Six
 3. Five
 4. Four
- 5-41. Your light meter indicates an exposure of 7 seconds at f/8. What is your exposure using the painted light technique?
1. 7 seconds at f/8
 2. 14 seconds at f/4
 3. 14 seconds at f/8
 4. 21 seconds at f/8
- 5-42. When using the painted-light technique, you should use what minimum exposure time?
1. 5 seconds
 2. 10 seconds
 3. 20 seconds
 4. 25 seconds
- 5-43. You are using a mirror to photograph a broken fitting in the wheel well of an aircraft. The broken fitting-to-camera distance is 27 inches, the mirror-to-fitting distance is 19 inches, and the camera-to-mirror distance is 33 inches. What focusing distance, in inches, should you set on the camera lens?
1. 79
 2. 60
 3. 52
 4. 46
- 5-44. You are photographing an arrangement of glassware in the studio using color negative film. Your light-meter reading taken from the background indicates an exposure of 4 seconds at f/16. While at f/16, you should use which of the following camera settings to expose the film?
1. 16 seconds
 2. 12 seconds
 3. 8 seconds
 4. 4 seconds
- 5-45. You are photographing an object in the studio and are using a continuous-tone film (ISO 100) and a high-contrast film (ISO 8) to eliminate an unwanted background. Your exposure for the continuous-tone film is 24 seconds at f/16. What f/stop should you use to expose the slow, high-contrast film?
1. f/16
 2. f/11
 3. f/8
 4. f/5.6

Learning Objective: Recognize equipment and techniques used for photographing buildings and structures.

5-46. What type of camera is best suited for photographing architectural structures?

1. 35mm SLR
2. Medium-format TLR
3. Medium-format SLR
4. View camera

5-47. You are tasked to photograph a new Navy Lodge on board a local NAS. Which of the following weather conditions should you avoid when taking this photograph?

1. Bright day with clear skies
2. Slightly overcast day
3. Cloudy day
4. Bright day with large, puffy clouds

5-48. You are tasked to photograph the interior of a building that has a number of large windows. What time of day should you make the exposures?

1. Early Morning
2. Mid Morning
3. Noon
4. After dark

5-49. A lens shade should always be used over camera lenses.

1. True
2. False

Learning Objective: Identify basic principles used in intelligence-gathering photography.

5-50. What black-and-white film is best suited for taking intelligence-gathering pictures?

1. Kodak Tri-X
2. Kodak Tech Pan
3. Ilford XP-1
4. Kodak Plus-X

5-51. What color film is best suited for taking intelligence-gathering pictures?

1. Kodak Gold
2. Kodak Ektar
3. 3M HR
4. Kodak Vericolor Professional

5-52. Because the resolution of videotape is inferior to film, it should not be used for intelligence-gathering purposes.

1. True
2. False

5-53. What type of shot is most helpful to analysts in determining the overall dimensions of a ship?

1. Starboard beam
2. Stern
3. Port quarter
4. Bow

5-54. Which of the following light-meter reading techniques should you use to photograph an aircraft that is airborne?

1. Integrated
2. Brightest object
3. Incident
4. Substitution

5-55. Intelligence photographs of foreign ports are seldom taken from Navy ships because an ample supply of these images are provided by satellites.

1. True
2. False

ASSIGNMENT 6

Textbook Assignment: "Portraiture." Pages 7-1 through 7-20.

Learning Objective: Identify proper equipment and techniques used in photographing portraits.

6-1. A portrait should emphasize which of the following aspects about a person?

1. Their environment
2. A recognizable likeness only
3. Their personality
4. Their flattering characteristics only

6-2. Which of the following factors can help you succeed in portrait photography?

1. An understanding of the techniques involved
2. An artistic ability
3. The ability to direct subjects
4. All of the above

6-3. What is/are the most important feature(s) of the face?

1. Nose
2. Eyes
3. Mouth
4. Ears

6-4. What is/are the most expressive feature(s) of a face?

1. Eyes
2. Mouth
3. Cheeks
4. Forehead

6-5. You are using a camera that produces a 6x7 cm negative to shoot a head-and-shoulders portrait. Which of the following lenses should you use?

1. 50mm
2. 75mm
3. 150mm
4. 250mm

6-6. What type of background is best suited for official Navy portraits?

1. Bright colored
2. Light, neutral colored
3. Dark colored
4. Glossy surfaced

6-7. Your studio is set up with a brightly colored background and you are shooting color film for a portrait session. What is/are the disadvantage(s) of using this colored background?

1. It can distract from the subject
2. Reflected light may affect the tone of the subject's face
3. It may alter the mood you want to represent
4. Each of the above

6-8. As a minimum, what two colors of backgrounds available should a Navy portrait studio have?

1. White and gray
2. Black and gray
3. Black and white
4. Gray and black

Learning Objective: Select various lighting sources and accessories used in portrait photography.

- 6-9. What light source is best for portrait photography?
1. Sunlight
 2. Daylight
 3. Incandescent light
 4. Electronic flash
- 6-10. You want to produce deep, well-defined shadows on the face of a portrait. What type of light source should you use?
1. Reflected light
 2. Spotlight
 3. Floodlight
 4. Diffused light
- 6-11. The technique that allows only the softer, outer part of a light beam to fall on the subject is known by what term?
1. Diffusing
 2. Snooting
 3. Feathering
 4. Spotting
- 6-12. Which of the following lighting accessories is used to soften specular light?
1. Fresnel lens
 2. Barn door
 3. Snoot
 4. Diffusers
- 6-13. What lighting accessory is used to feather light?
1. Snoot
 2. Barn door
 3. Diffuser
 4. Umbrella
- 6-14. What lighting accessory is used to control spill light?
1. Barn door
 2. Diffuser
 3. Umbrella
 4. Reflector
- 6-15. What lighting accessory is used to control the size of the light beam falling on the subject?
1. Barn door
 2. Snoot
 3. Diffuser
 4. Umbrella
- 6-16. What lighting accessory is used to spread light over a larger area than that provided from the original source?
1. Barn door
 2. Snoot
 3. Diffuser
 4. Umbrella
-
- Learning Objective: Identify camera- and subject-handling techniques used in portrait photography.
-
- 6-17. What type of black-and-white film should you use to emphasize the texture of a man's skin in a portrait?
1. Panchromatic
 2. Colorblind
 3. Orthochromatic
 4. Infrared
- 6-18. Which of the following f/stops is generally better suited for taking portraits?
1. f/8
 2. f/16
 3. f/32
 4. f/64
- 6-19. Portrait appointments should be scheduled no closer than how many minutes apart?
1. 5
 2. 10
 3. 15
 4. 20

- 6-20. People should generally have their portraits taken during what part of the day?
1. Morning
 2. Afternoon
 3. Evening
 4. Night
- 6-21. Which of the following methods helps to provide a natural expression of the subject?
1. Tell them to "just act natural"
 2. Show them an example of how you want them to look
 3. Carry on a conversation with the subject to help them feel at ease
 4. Tell a joke at the time of exposure
- 6-22. When directing the subject for a portrait pose, you, as the photographer, should be in what location?
1. Behind the camera
 2. At the subject's side
 3. Behind the subject
 4. In front of the camera within the circle of light
- 6-23. What is the best average height of a camera for a head-and-shoulders portrait?
1. Chest level
 2. Slightly above the subject's eyes
 3. Slightly below the subject's chin
 4. Nose level
- 6-24. When shooting a full-length portrait, you should begin with your camera at what level to the subject?
1. Waist
 2. Chest
 3. Shoulder
 4. Head
- 6-25. You are shooting a portrait and want the subject to appear to be looking, but not staring at the viewer in the finished print. To create this effect, you should have the subject look in what direction during the camera exposure?
1. Into the camera lens
 2. Slightly above the camera lens
 3. Below the camera lens
 4. At the modeling light
- 6-26. To create the feeling of motion in a head-and-shoulders portrait, you should have the subject sit in what position in relation to the camera?
1. At an angle and leaning slightly forward
 2. At an angle and leaning slightly backward
 3. Square and leaning slightly forward
 4. Square and leaning slightly backward
- 6-27. What is the point of interest in a military portrait?
1. The national ensign
 2. The subject's rank or rating insignia
 3. The subject's awards
 4. The subject's face
-
- Learning Objective: Recognize different types of portrait lighting and their corresponding effects.
-

<p>PORTRAIT LIGHTING</p> <p>A. Rembrandt</p> <p>B. Short</p> <p>C. Broad</p> <p>D. Rim</p>
--

Figure 6A

IN ANSWERING QUESTIONS 6-28 THROUGH 6-31, REFER TO FIGURE 6A AND SELECT THE TYPE OF PORTRAIT LIGHTING USED TO CREATE THE EFFECT USED AS THE QUESTION.

6-28. The side of the face away from the camera is fully lighted:

1. A
2. B
3. C
4. D

6-29. The side of the face away from the camera is lighted by a high main light:

1. A
2. B
3. C
4. D

6-30. The entire face is in shadow:

1. A
2. B
3. C
4. D

6-31. The side of the face toward the camera is well-lighted:

1. A
2. B
3. C
4. D

6-32. What type of lighting produces a shadow directly under the nose?

1. Broad
2. Butterfly
3. Short
4. Rembrandt

6-33. What type of lighting is used to illuminate one side of the face while placing the opposite side completely in shadow?

1. Rim
2. Short
3. Split
4. Broad

Learning Objective: Identify methods used to determine the placement of portrait lights.

6-34. What light source in a portrait-lighting situation is the most influential?

1. Fill
2. Hair
3. Background
4. Modeling

6-35. In military portraits, what type of lighting is used for subjects with a normal shape face?

1. Short
2. Broad
3. Butterfly
4. Spit

6-36. What type of lighting should you use for a subject with a narrow face?

1. Short
2. Broad
3. Spit
4. Rembrandt

6-37. Which of the following lighting effects causes too much light to be reflected from the subject's forehead in a portrait?

1. The fill light is too bright
2. The main light is too far from the fill light
3. The main light is too close to the subject
4. The intensity of the fill light is greater than the main light

- 6-38. What light creates the facial highlights in portrait lighting?
1. Background
 2. Hair
 3. Fill
 4. Main
- 6-39. What factors are used to determine the required direction of the main light in three-quarter portrait lighting?
1. The distance of the main light from the fill light
 2. The size and shape of the subject's nose
 3. The size and intensity of the main light as compared to the fill light
 4. The relationship of the nose shadow to the upper lip
- 6-40. What facial highlight is used to determine the distance of the main light?
1. Nose
 2. Forehead
 3. Chin
 4. Cheek
- 6-41. When naval officers have their portrait made with their cover on, the shadow cast by the visor must not fall across their eyes.
1. True
 2. False
- 6-42. What is the purpose of the fill light in portrait lighting?
1. To provide shadow detail
 2. To increase the level of illumination necessary to obtain greater depth of field
 3. To provide modeling and highlight contrast
 4. To increase the lighting ratio
- 6-43. In three-quarter portrait lighting, the fill light should be in what location?
1. Directly behind the main light
 2. On the same side of the camera as the main light
 3. On the opposite side of the camera from the main light
 4. Behind the subject
- 6-44. The shadow cast under the subject's chin by the fill light helps to separate the head from the neck in portrait lighting, and therefore should be quite dark.
1. True
 2. False
- 6-45. In a portrait subject's eye, what is the small reflection caused by the main light called?
1. Highlight
 2. Star light
 3. Bright light
 4. Catch light
- 6-46. What number of catch lights should be in each eye?
1. One
 2. Two
 3. Three
 4. Four
- 6-47. In broad lighting, the catch light should be in what approximate position?
1. One o'clock
 2. Six o'clock
 3. Three o'clock
 4. Eleven o'clock
- 6-48. In short lighting, the catch light should be in what approximate position?
1. One o'clock
 2. Six o'clock
 3. Three o'clock
 4. Eleven o'clock

- 6-49. What is the maximum lighting ratio for color portraits?
1. 1:1
 2. 2:1
 3. 3:1
 4. 5:1
- 6-50. In portrait lighting, what light is used to provide tonal separation between the subject and the background?
1. Main
 2. Catch
 3. Fill
 4. Background
- 6-51. You are shooting a color portrait for a command roster board. To reproduce the background in its true color, you should ensure what amount of incident light is falling on it?
1. The same as the subject
 2. Twice as much as the subject
 3. One half as much as the subject
 4. Four times as much as the subject
- 6-52. You position the background light so the illumination falls off gradually into the corners of the frame. This produces what effect?
1. It hides uneven borders
 2. It provides image balance
 3. It "locks" the image into the frame
 4. It helps direct attention to the subject's face
- 6-53. Light-meter readings for portraits should be taken with the hair light turned off.
1. True
 2. False
- 6-54. When setting up a portrait using side lighting, you should start with the main light in what position?
1. Very close to the lens axis
 2. 45 degrees from the lens axis
 3. 90 degrees from the lens axis
 4. 180 degrees from the lens axis
- 6-55. What type of portrait lighting should you use to subdue lines and wrinkles in the subject's face?
1. Spit
 2. Broad
 3. Butterfly
 4. Rembrandt
- 6-56. What facial shadow should you use to determine the height of the main light for butterfly lighting?
1. Eyebrow
 2. Nose
 3. Lip
 4. Chin
- 6-57. You are taking a portrait of a female admiral using butterfly lighting. In what position should you place the fill-in light?
1. Close to the lens axis and on the opposite side from the main light
 2. 45 degrees from the lens axis and on the same side as the main light
 3. 45 degrees from the lens axis and on the opposite side of the main light
 4. Directly below the main light and close to the lens axis
-
- Learning Objective: Identify the basic setup used for taking full-length portraits.
-

- 6-58. What background color is best suited for a full-length portrait of an officer wearing khakis?
1. Gray
 2. Light blue
 3. Beige
 4. White
- 6-59. You are taking a full-length officer promotion portrait of a CDR. You should pose the subject in what manner?
1. Square to the camera
 2. Facing your left
 3. Three quarters with the left shoulder forward
 4. One that makes him appear thin
- 6-60. Because all military portraits are standardized, they should be taken with the same pose, camera height, and lighting setup.
1. True
 2. False

Learning Objective: Identify corrective techniques used in portrait photography.

PORTRAIT PROBLEM AREAS

- A. Protruding lips
- B. Glasses
- C. Baldness
- D. Fat, round face
- E. Deep-set eyes
- F. Wide forehead

Figure 6B

IN ANSWERING QUESTIONS 6-61 THROUGH 6-66, REFER TO FIGURE 6B AND SELECT THE PORTRAIT PROBLEM AREA THAT BEST MATCHES THE CORRECTIVE ACTION USED AS THE QUESTION.

- 6-61. Low-camera viewpoint and front-lighting:
1. B
 2. C
 3. D
 4. E
- 6-62. Shoot three-quarter view. Short or sidelighting:
1. A
 2. C
 3. D
 4. F
- 6-63. Low main light:
1. A
 2. B
 3. D
 4. F
- 6-64. Low-camera viewpoint. Light to blend head with background:
1. B
 2. C
 3. D
 4. F
- 6-65. High, three-quarter or front-lighting. Tilt head downward:
1. A
 2. B
 3. C
 4. E
- 6-66. Low-camera viewpoint. Tilt chin upward:
1. A
 2. B
 3. D
 4. F
- 6-67. Film exposure for portraits should be based on the intensity of
1. the fill light only
 2. the main light only
 3. the fill and main lights only
 4. all lights used

Learning Objective: Recognize principles used for taking passport photographs.

- 6-68. All active-duty military personnel are entitled to no cost tourist passport photographs taken in Navy imaging facilities.
1. True
 2. False
- 6-69. The head size for passport photographs must be what size, in inches?
1. 1 to 1 3/8
 2. 1/2 to 1
 3. 3/4 to 1 1/4
 4. 1 3/8 to 2
- 6-70. A Navy lieutenant enters your imaging facility for a passport photograph wearing prescription aviator sunglasses. He normally wears glasses but does not have glaucoma. Which of the following actions should you take?
1. Ask him to put on his regular glasses and then take the photograph
 2. Have him remove the sunglasses and take the photograph
 3. Say nothing and take the photograph with the sunglasses on

ASSIGNMENT 7

Textbook Assignment: "Copying" and "Chemical Mixing." Pages 8-1 through 9-12.

Learning Objective: Recognize different types of copy originals.

COPY TERMS

- A. Line Originals
- B. Reproduction
- C. Halftone
- D. Continuous-Tone Original
- E. Duplication

Figure 7A

IN ANSWERING QUESTIONS 7-1 THROUGH 7-4, SELECT THE COPY TERM THAT BEST APPLIES TO THE DEFINITION USED AS THE QUESTION.

7-1. A photograph comprised of many different gray, white, and black tones:

- 1. A
- 2. B
- 3. D
- 4. E

7-2. The product of copying:

- 1. A
- 2. B
- 3. C
- 4. D

7-3. A black-and-white printed page:

- 1. A
- 2. B
- 3. C
- 4. D

7-4. A picture made of various size dots:

- 1. A
- 2. B
- 3. C
- 4. D

Learning Objective: Identify conditions of copyrighted materials.

7-5. Copyright laws apply only to works published and made available for sale.

- 1. True
- 2. False

7-6. To play it safe as a Navy Photographer's Mate, you should abide by which of the following rules regarding copyright information?

- 1. Never copy information that is copyrighted
- 2. You may copy any copyrighted material if it will be used one time only and the copy is marked "For Official Use Only"
- 3. Be sure permission from the copyright holder is obtained before copying copyrighted materials
- 4. If it is used for training purposes, it may be copied

7-7. Which of the following items may be copyrighted?

- 1. Compact disks
- 2. Videotapes
- 3. Photographs
- 4. Each of the above

- 7-8. At what point in time does a photograph legally become copyrighted?
1. When it is processed
 2. When it is submitted to the Copyright Office
 3. When it is published
 4. When it is sold
- 7-9. Which of the following statements regarding copyright is true?
1. A notice of copyright is marked conspicuously on all copyrighted documents
 2. Although a publication does not carry a notice of copyright, it may still be copyrighted
 3. Without permission from the copyright owner, you may still copy publications from foreign countries
 4. All of the above
- 7-10. A literary work was created by two authors in 1980. Neither of the authors worked for hire. The first author died in 1981, and the second author died in 1885. What year does the copyright expire for this work?
1. 2031
 2. 2035
 3. 2056
 4. 2085
- 7-11. What, if anything, is meant by "international copyright?"
1. The material is copyrighted throughout the world
 2. The copyright applies to UCC countries only
 3. All UCC countries have agreed to copyright the material
 4. There is no such thing as "international copyright"
- 7-12. A Navy pilot takes some air-to-air photographs of an aircraft just introduced to the fleet. As assistant PAO, this is a part of his duty. These photographs are copyright protected for what length of time, if any?
1. 50 years after his death
 2. 75 years after his death
 3. 100 years from the date the photographs were processed
 4. None
- 7-13. Which of the following statements concerning copyright information and the principle of "fair use" is NOT true?
1. For educational purposes, a teacher can make a single copy of a document for each student and use the copies from year to year
 2. A single copy of an article from a magazine may be used for research purposes
 3. There is no limit to the number of copies that can be made of a table of weights and measures
 4. A teacher may make a single copy of a chapter in a book if the material is used in preparation for teaching a class
- 7-14. What instruction provides information on the use of copyrighted material for official Navy use?
1. OPNAVINST 5290.1
 2. SECNAVINST 5870.5
 3. SECNAVINST 5216.5
 4. COPYRITINST 10700.3

7-15. You are standing "duty PH" alone at a base imaging facility. The CO of the base personally brings in a copyrighted document that he needs copied to a 35mm slide at once. What action should you take?

1. Tell the CO you cannot copy the document because it is copyrighted
2. Mask the copyright notice, then copy the document
3. Ensure the CO knows that the document is copyrighted before you begin the job
4. Make an extra slide of the document and forward it to the CNO

7-16. It is illegal to photograph United States currency.

1. True
2. False

Learning Objective: Recognize equipment, film, and lighting techniques used for photographic copying.

7-17. For an imaging facility that performs a large quantity of copy work, what focusing system is best?

1. SLR
2. Rangefinder
3. Ground glass
4. Split level

7-18. What is the minimum desired bellows extension for a copy camera?

1. The lens focal length
2. Twice the lens focal length
3. Three times the lens focal length
4. Four times the lens focal length

7-19. What type of lens is designed specifically for copying?

1. Process
2. Convertible
3. High resolve
- Two dimensional

7-20. What primary factor determines the focal-length lens you should use for copy work?

1. The lens-to-original distance
2. The size of the original
3. The distance from the light source to the original
4. The size of the negative

7-21. For copy work, you should use which of the following lenses, in inches, on a camera that produces an 8x10-inch negative?

1. 8
2. 10
3. 12
4. 18

7-22. The copyboard of a copy camera should not be white or a light color for which of the following reasons?

1. The film will be overexposed
2. The film will be underexposed
3. The reproduced image will lack good contrast
4. The reproduced image will have excessive contrast

7-23. What is the color temperature rating of tungsten lamps?

1. 3200 K and 3400 K
2. 5400 K and 7200 K
3. 7400 K and 9600 K
4. 10,000 K and 21,000 K

7-24. What is the approximate lifetime, in hours, of a 3400 K lamp?

1. 5
2. 9
3. 3
4. 34

7-25. What type of light source is best suited for copying a painting with rough surface?

1. 3200 K tungsten lamp
2. Fluorescent lamp
3. Electronic flash
4. Quartz-halogen lamp

- 7-26. You are copying charts to 35mm color slides on an MP-4 copy camera. The right-rear lamp burns out. What lamp(s) should you replace?
1. The right-rear lamp only
 2. The right-rear and the right-front lamps only
 3. The right-rear and the left-rear lamps only
 4. All four lamps
- 7-27. What type of film should you use to copy a black-and-white line original?
1. Kodalith
 2. Plus-X
 3. HP5 Plus
 4. XP2
- 7-28. Which, if any, of the following types of film should you use to make a black-and-white copy of a colored line original?
1. Colorblind
 2. Orthochromatic
 3. Panchromatic
 4. None of the above
- 7-29. To copy a black-and-white continuous-tone original, you should use which of the following films??
1. Kodalith
 2. Contrast Process Pan
 3. Kodak Commercial
 4. Tri-X
- 7-30. Which of the following films should you use to produce a color negative of a color photographic print?
1. Vericolor III Professional
 2. Kodak Internegative
 3. Ektachrome
 4. Kodacolor
- 7-31. You are printing a number of color prints that will later be copied to color slides. What surface paper should you use to make the prints?
1. Glossy
 2. Matte
 3. Semimatte
 4. Pearl
- 7-32. At what angle to the original should the copy lights be positioned for general, routine copy work?
1. 90°
 2. 45°
 3. 30°
 4. 10°
- 7-33. You have produced a copy negative that you know was lighted evenly, but the negative still has less density at the edges than at the center. What factor most probably caused this problem?
1. A wide-angle lens was used
 2. A telephoto lens was used
 3. The film was overexposed
 4. The film was underexposed
- 7-34. What type of film requires the most critical exposure?
1. High contrast
 2. Moderate contrast
 3. Normal contrast
 4. Low contrast
- 7-35. Many bright reflections are occurring from high points of brush strokes on an oil painting that you are copying. What may be the end result?
1. Increased contrast
 2. Reduced contrast
 3. Underexposure
 4. Overexposure

- 7-36. Polarizing screens are being used over copy lights. Approximately how much of an increase in exposure is required as compared to using the lights unscreened?
1. 5 times
 2. 2 times
 3. 12 times
 4. 20 times
- 7-37. You are using an ISO 100 speed film to make copies. Your exposure meter reading is taken from an 18-percent gray card. What ISO speed should you set into the meter?
1. 25
 2. 50
 3. 100
 4. 200
- 7-38. You are producing copies using a 14-inch bellows extension. The lens focal length is 6 inches and the indicated exposure is 3 seconds. What exposure time, in seconds, should you use?
1. 6
 2. 12
 3. 16
 4. 32
- 7-39. When photographing images of a CRT, you must be aware of which of the following requirements?
1. The shutter speed is extremely critical when photographing radarscopes
 2. The screen brightness must be adjusted to maximum so the brightest possible images are provided
 3. To shoot a computer monitor, you must set the camera shutter speed to 1/250 second
 4. The optical axis of the lens must be centered and perpendicular to the monitor
- 7-40. For slide duplication, what side of the film should face the camera?
1. Emulsion
 2. Base
- 7-41. You have copied a number of slides and all of the processed images on the roll are extremely yellow. What action should you take first?
1. Subtract 50Y from the filter pack
 2. Add 50B to the filter pack
 3. Add 50M and 50C to the filter pack
 4. Check the duplicating system to ensure the CC filters were in the proper position when the slides were exposed
- 7-42. When trying to determine the color correction necessary for a duplicate color slide, you should examine what tones?
1. Midtones
 2. Shadows
 3. Highlights
- 7-43. By viewing a color slide through a CC10R filter, you determined that the color looks correct. Which of the following adjustments should you make to your filter pack?
1. Subtract CC10R only
 2. Subtract CC10M and CC10Y
 3. Add CC10C only
 4. Subtract CC10C only

Learning Objective: Identify methods used to duplicate slides.

Learning Objective: Identify proper mixing and storage procedures for photographic chemicals.

7-44. What is the most important reason for ensuring that photographic chemicals are mixed properly?

1. using improperly mixed chemicals is always hazardous to the user's health
2. Improperly mixed chemicals may ruin the film from an important mission
3. The mixing equipment may be damaged

7-45. The storage of unmixed chemicals should be at what approximate temperature and relative humidity, respectively?

1. 20°F; 68 percent
2. 40°F; 75 percent
3. 68°F; 20 percent
4. 75°F; 40 percent

7-46. Containers made from what material are best for storing liquid developer?

1. Hard rubber
2. Plastic
3. Glass
4. Stainless steel

7-47. Air space should never be left in a large bottle used for storing developer replenisher.

1. True
2. False

7-48. Floating lids are used for storage of large volumes of solution in tanks for what primary purpose?

1. To prevent dust from settling on the surface of the solution
2. To prevent water in the solution from evaporating
3. To prevent unauthorized use of the solution
4. To protect the solution from aerial oxidation

7-49. Which of the following materials is NOT suitable for a photographic chemical storage tank?

1. Aluminum
2. Glass
3. 316 Stainless Steel
4. Polyethylene

7-50. When washed well between uses, wooden paddles make excellent chemical mixing tools.

1. True
2. False

7-51. The curved surface at the top of a solution is known by what term?

1. Convexation
2. Concavation
3. Meniscus
4. Mantissa

7-52. An increase in temperature has what effect, if any, on chemical action?

1. It increases
2. It decreases
3. None

Learning Objective: Identify items of equipment used in Navy imaging facilities to test or verify chemical solutions.

7-53. What instrument is used to measure the specific gravity of a solution?

1. Densitometer
2. pH meter
3. Hydrometer
4. Thermometer

- 7-54. The specific gravity measurement of a solution is below the lower limit. This may be an indication of which of the following errors?
1. The solution is diluted with too much water
 2. Not enough water was added
 3. Too much of an ingredient has been added
 4. The solution may be highly acidic
- 7-55. A hydrometer used to measure the silver content of a fixing bath is calibrated in grams of silver per
1. ounce
 2. milliliter
 3. gallon
 4. liter
- 7-56. Specific gravity is a measurement of what property of a liquid?
1. Composition
 2. Strength
 3. Opacity
 4. Density
- 7-57. What part of the meniscus, if any, at the stem of the hydrometer indicates the ratio of the density of a solution to the density of distilled water?
1. The top
 2. The center
 3. The bottom
 4. None
- 7-58. Acidity and alkalinity of solutions are measured with what instrument?
1. Hydrometer
 2. pH meter
 3. Activity indicator
 4. Sensitometer
- 7-59. Photographic developing solutions have which of the following pH values?
1. 3.1 to 5.0
 2. 5.0 to 8.0
 3. 8.0 to 12.0
 4. 12.0 to 14.0
- 7-60. An alkali may have which of the following pH values?
1. 1.0
 2. 5.0
 3. 7.0
 4. 9.0
- 7-61. A pH value of 7.0 is
1. acidic
 2. alkaline
 3. neutral
- 7-62. A pH value of 1.0 is how many times stronger than a pH value of 3.0?
1. One
 2. Two
 3. Ten
 4. One hundred
- 7-63. The solution used to standardize a pH meter is known as what type of solution?
1. Acid
 2. Alkali
 3. Buffer
 4. Neutral
- 7-64. You are standardizing a pH meter before taking the pH reading of a black-and-white fixer. You should use a buffer solution with what pH value to standardize the meter?
1. 14.0
 2. 10.0
 3. 7.0
 4. 4.0
-
- Learning Objective: Identify procedures used in mixing photographic chemicals.
-

7-65. You have set up an impeller type of mixer to mix a developer solution, but you have adjusted the clamp improperly so the shaft is vertical and in the center of the container. What is the most probable end result?

1. The motor bearings are damaged
2. Too much air was whipped into the solution
3. The mixer vibrated enough to mix the chemicals sufficiently
4. The solution was churned from top to bottom, rather than from bottom to top

7-66. How many degrees Celsius equate to 68°F?

1. 10°C
2. 20°C
3. 30°C
4. 40°C

7-67. You are mixing a developing solution and the directions call for water at 23.8°C. This is equal to how many degrees Fahrenheit?

1. 18.75°F
2. 37.50°F
3. 75.00°F
4. 125.50°F

7-68. You are preparing a working solution of developer from a stock solution. The instructions call for 1 part of stock solution and 3 parts water. You need a total of 1 gallon of working solution. What amount of water, in ounces, should you add to the solution?

1. 32
2. 64
3. 96
4. 128

7-69. For adequate ventilation in a chemical mixing area, there should be one complete air change every

1. 15 minutes
2. 30 minutes
3. 3 minutes
4. 45 minutes

7-70. It is permissible to mix photographic chemicals in a photographic print room that has adequate ventilation.

1. True
2. False

7-71. You need 32 ounces of developer solution. The only size package of dry, prepackaged chemicals you have on hand makes 128 ounces. Should you mix the entire package to make 128 ounces and, if so, why?

1. Yes; when only part of the package is mixed, some of the ingredients may be left out of the resulting solution
2. Yes; when only part of the package is mixed, the resulting solution will not develop film
3. No; dry, packaged chemicals are homogenized
4. No; dry, packaged chemicals are formulated to be mixed either in part or in whole

7-72. You should follow what procedure when mixing chemicals?

1. Add water to dry chemicals and acid to water
2. Add dry chemicals to water and acid to water
3. Add water to dry chemicals and water to acid
4. Add dry chemicals to water and water to acid

Learning Objective: Recognize safety precautions required in chemical mixing areas.

7-73. Labels on chemical storage tanks must include the name of the solution, hazardous chemicals contained, the name of the person who mixed it, and what other information?

1. The water-mixing temperature
2. The date mixed
3. The antidote
4. The name of the chemical-mixing supervisor

- 7-74. What rule(s) is/are important to remember whenever you are working around chemicals?
1. An antidote is for emergency use only
 2. Ingestion of a poisonous chemical may be induced by smoking
 3. A person who has spilled acid on himself should seek medical attention immediately
 4. All of the above
- 7-75. Which of the following personnel must be completely familiar with Material Safety Data Sheets (MSDS)?
1. The division officer only
 2. The division officer and LCPO only
 3. The division officer, LCPO, and production PO only
 4. All persons within an imaging facility

ASSIGNMENT 8

Textbook Assignment: "Image Processing and Control." Pages 10-1 through 10-30.

Learning Objective: Recognize functions of the various solutions used to process light-sensitive materials.

- | | |
|--|--|
| <p>8-1. What process is most commonly used for film development?</p> <ol style="list-style-type: none">1. Physical2. Chemical3. Intensification4. Latent conversion <p>8-2. When performed correctly, the chemical development process reduces exposed silver halides to what composition?</p> <ol style="list-style-type: none">1. Black metallic silver2. Soluble-silver salt3. Dye-image salt4. Gray-tone dye <p>8-3. All silver halides, both exposed and unexposed, can be reduced to metallic silver in the development process.</p> <ol style="list-style-type: none">1. True2. False <p>8-4. What term describes the amount of silver in a film emulsion that has been reduced to black metallic silver?</p> <ol style="list-style-type: none">1. Light struck2. Rate phenomenon3. Density4. Primary silver <p>8-5. What is the most important ingredient in a developing solution?</p> <ol style="list-style-type: none">1. Preservative2. Accelerator3. Restrainer4. Reducing agent | <p>8-6. What is the purpose of the preservative in a developing solution?</p> <ol style="list-style-type: none">1. It makes the image permanent2. It retards oxidation3. It prevents the formation of poisonous gas4. It prevents the reducing agent from attacking the unexposed silver halides <p>8-7. Which of the following chemicals may be used as a preservative?</p> <ol style="list-style-type: none">1. Hydroquinone2. Metol3. Sodium hydroxide4. Sodium sulfite <p>8-8. What ingredient in a developing solution makes it alkaline?</p> <ol style="list-style-type: none">1. Reducing agent2. Accelerator3. Preservative4. Restrainer <p>8-9. What two functions does the accelerator in a developing agent serve?</p> <ol style="list-style-type: none">1. It constricts the emulsion and prevents aerial oxidation2. It constricts the emulsion and increases the rate of development3. It swells the emulsion and absorbs the halide elements freed from the silver4. It swells the emulsion and retards the rate of development <p>8-10. A developer with which of the following pH values will most likely produce an image with a finer grain?</p> <ol style="list-style-type: none">1. 1.52. 5.53. 8.54. 11.0 |
|--|--|

- 8-11. The restrainer in a developing solution serves what purpose?
1. It slows down the action of the reducing agent
 2. It prevents the preservative from etching the silver grains
 3. It reduces image contrast
 4. It prevents the solution from oxidizing

- 8-12. Which of the following developer ingredients is used to prevent chemical fog?

1. Metol
2. Hydroquinone
3. Sodium sulfite
4. Potassium bromide

Learning Objective: Identify different types of black-and-white developers and their uses.

- 8-13. In the development stage of film processing, what areas of the negative are converted to black metallic silver first?

1. Highlights
2. Mid-tones
3. Shadows

- 8-14. Which of the following factors does NOT determine the type of developer you choose to process film?

1. Film size
2. Type of process
3. Exposure conditions
4. Type of film

- 8-15. When black-and-white film is processed in a fine-grain developer, the grain structure cannot be seen even in prints made at high magnifications.

1. True
2. False

- 8-16. What type of developer should you use to process a line copy film?

1. High definition
2. Fine grain
3. High contrast
4. General purpose

- 8-17. Which of the following statements is NOT a property of a compensating developer?

1. It increases image sharpness
2. It may produce acceptable negatives that are one or two f/stops underexposed
3. It is recommended for use with fine-grain emulsions only
4. It produces extremely fine grain

- 8-18. What effect, if any, does the by-products caused by the reduction of silver halides have on the pH of a developing solution?

1. It increases
2. It decreases
3. None

- 8-19. Which of the following actions should you take to compensate for the additional bromide present in a used developer?

1. Increase the developing time
2. Decrease the developing time
3. Add more restrainer
4. Lower the temperature of the developer

- 8-20. Which of the following ingredients is NOT included in a developer replenisher?

1. Reducing agent
2. Preservative
3. Restrainer
4. Water

- 8-21. What is the primary reason for using a developer replenisher?
1. To allow use of the same developing solution indefinitely
 2. To maintain the composition of a developer
 3. To extract the used developer
 4. To keep the developer activity constant

- 8-22. What replenishment method is used to maintain solution volume only?

1. Bleed
2. Topping off
3. Titration

- 8-23. The processing characteristics of a developer remains more consistent when what replenishment method is used?

1. Bleed
2. Topping off
3. Titration

Learning Objective: Identify procedures carried out after film is developed.

- 8-24. A water-rinse bath stops the action of the developer.

1. True
2. False

- 8-25. What property of a stop bath prevents further development?

1. Temperature
2. Volume
3. Penetrating action
4. pH

- 8-26. A solution with which of the following pH readings should be used as a stop bath?

1. 2.0
2. 5.0
3. 7.0
4. 9.0

- 8-27. A stop bath should be made up of a weak acid for which of the following reasons?

1. To prevent damage to the film emulsion
2. To prevent the fixing bath from sulphurizing
3. Both 1 and 2 above
4. To prevent darkroom workers from inhaling strong acid fumes

- 8-28. What type of acid is commonly used as a stop bath and in what strength (percentage)?

1. Sulfuric; 28.0%
2. Acetic; 99.5%
3. Sulfuric; 99.5%
4. Acetic; 28.0%

- 8-29. Glacial acetic acid freezes at what temperature, in degrees Fahrenheit?

1. 61°F
2. 32°F
3. 10°F
4. 0°F

- 8-30. For a normal stop bath, you should mix a total of how many ounces of 28 percent acetic acid with 32 ounces of water?

1. 1
2. 1/2
3. 16
4. 28

- 8-31. Once film is treated in a stop bath, it is no longer sensitive to light?

1. True
2. False

- 8-32. What step in film processing makes the silver salts that are not affected by the developer water soluble?

1. Water rinse
2. Stop bath
3. Fixer
4. Wash

- 8-33. Which of the following chemicals is used commonly as a silver-halide solvent?
1. Acetic acid
 2. Sodium thiosulfate
 3. Sodium sulfite
 4. Borax
- 8-34. Which of the following chemicals is added to fixing solutions to prevent sulfurization and discoloration as well as aiding in prevention of stains?
1. Sodium thiosulfate
 2. Ammonium thiosulfate
 3. Sodium sulfite
 4. Potassium alum
- 8-35. Which of the following films requires the longest fixing time?
1. Very fine grain
 2. Fine grain
 3. Medium grain
 4. Coarse grain
- 8-36. You used an undeveloped piece of film to determine the proper fixing time. The film took 2 minutes to clear. After development, what length of time, in minutes, should you fix the same type of film?
1. 1
 2. 2
 3. 8
 4. 4
- 8-37. A fresh fixer used to process black-and-white film takes 4 minutes to clear a piece of undeveloped film. The fixer should be considered exhausted when it takes a total of how many minutes to clear undeveloped film?
1. 5
 2. 6
 3. 7
 4. 8
- 8-38. The purpose of washing film is to remove which of the following elements?
1. Black metallic silver
 2. Fixer
 3. Developer
 4. Silver halides
- 8-39. For black-and-white film, the maximum recommended wash water is what temperature, in degrees Fahrenheit?
1. 65°F
 2. 70°F
 3. 75°F
 4. 80°F
- 8-40. The time required to wash negatives in a large tank is 20 minutes. However, halfway through the wash cycle a PH Striker from the deck department puts his fixer-covered hand into the wash tank. You should wash the negatives what additional amount of time?
1. 5 minutes
 2. 10 minutes
 3. 20 minutes
 4. 30 minutes
- 8-41. The final stage in film processing is what step?
1. Drying
 2. Washing
 3. Fixing
 4. Captioning
- 8-42. Which of the following statements is correct regarding the wetting agent used in film processing?
1. It promotes even drying
 2. It helps wash the film because it is made of a soaplike substance
 3. It retards vigorous drying that causes film curl
 4. It shrinks the swollen gelatin

- 8-43. You place a long roll of 35mm film in a film dryer to dry. What action should you take to prevent the film from curling?
1. Attach a film clip to the bottom of the roll
 2. Cut the film into six-frame segments
 3. Dry the film on the film reel
 4. Hang the film in a U-shape loop

8-44. What is the best "cure" for film-drying problems?

1. Rewashing
2. Retouching
3. Prevention
4. Using a wetting agent

8-45. Film that is overdried can be identified by what characteristic?

1. The film curls toward the emulsion
2. The film curls toward the base
3. The base of the film turns pink
4. The images on the film appear faded

8-46. Film dryers use air impingement for what reason?

1. To help harden the gelatin
2. To cause the metallic silver to "set"
3. To prevent film curl
4. To promote faster drying

Learning Objective: Recognize equipment used in film processing.

8-47. Duckboards used in photographic processing sinks serve what purpose?

1. They rock trays and tanks to provide even agitation
2. They allow water to drain completely
3. They allow tanks or trays to float in the water bath
4. They allow water to circulate under and around tanks and trays to maintain chemical temperatures

8-48. What factor has the greatest bearing on selecting a safelight filter to use with a given photographic material?

1. The wattage of the light bulb
2. The working distance from the safelight to the light-sensitive material
3. The color sensitivity of the light-sensitive material
4. The length of time the light-sensitive material must be exposed to the safelight illumination

8-49. It takes 6 minutes to process a given light-sensitive material. To carry out the entire process of this material under the illumination of a safelight, you must ensure the safelight does NOT cause any evidence of fogging for what minimum length of time, in minutes?

1. 6
2. 8
3. 12
4. 24

8-50. What type of roll film reel is used most commonly in Navy imaging facilities?

1. Thumb-feed plastic
2. Center-feed plastic
3. Thumb-feed stainless steel
4. Center-feed stainless steel

8-51. A total of how many sheets of film can be washed properly at one time in a tray?

1. One
2. Two
3. Three
4. Four

8-52. What is the most effective method of washing film or paper in a tray?

1. Allow the water to fall directly on the film
2. Dump or change the water in the tray every 5 minutes
3. Rock the tray constantly
4. Use a siphon system

8-53. On board ships, a backflow preventer must be installed in the plumbing system when potable water is used to wash negatives and prints with a siphon system.

1. True
2. False

Learning Objective: Recognize procedures used in processing photographic film.

LIGHTING CONDITION
1. Dark
2. White light

Figure 8A

IN ANSWERING QUESTIONS 8-54 THROUGH 8-58, REFER TO FIGURE 8A. SELECT THE LIGHTING CONDITION USED TO CARRY OUT THE PROCESSING STEP USED AS THE QUESTION.

8-54. Fixing:

1. 1
2. 2

8-55. Drying:

1. 1
2. 2

8-56. Washing:

1. 1
2. 2

8-57. Developing:

1. 1
2. 2

8-58. Stop bath:

1. 1
2. 2

8-59. Which of the following factors affect film development?

1. Time
2. Temperature
3. Agitation
4. Each of the above

8-60. Which of the following publications provides complete processing information for all light-sensitive materials used in your imaging facility?

1. *Navy Visual Information Management and Operations Manual*
2. *Manual of Photography*
3. *Photo-Lab-Index*
4. *Kodak Guide to Film Processing*

8-61. For hand processing black-and-white film, you should agitate the film in what manner when (a) tray processing and (b) tank processing.

1. (a) constantly
(b) constantly
2. (a) constantly
(b) intermittently
3. (a) intermittently
(b) intermittently
4. (a) intermittently
(b) constantly

8-62. You are hand processing four rolls of 35mm film in a small tank designed to hold five 35mm reels. What action should you take before processing the film?

1. Place an empty 35mm reel in the bottom of the tank before placing the loaded reels
2. Place an empty 35mm reel on top of the loaded reels in the processing tank
3. Place an empty 35mm reel in the center of the processing tank in between the second and the third loaded reels
4. Process the film leaving empty space in the processing tank

8-63. When processing roll film in the tank-and-reel system, you should dislodge air bubbles from roll film in what manner?

1. Roll the tank along the bottom of the sink
2. Invert the tank several times
3. Shake the tank
4. Bang the tank on the edge of a hard surface

8-64. Which of the following processes is used to process color and some monochrome negative film in Navy imaging facilities?

1. Kodak E-6
2. Kodak Flexicolor
3. Kodak EP-2
4. Kodak RA-4

8-65. You are processing color negatives. During what processing step is temperature the most critical?

1. Color developer
2. Bleach
3. Fixer
4. Stabilizer

8-66. The Kodak E-6 process has what number of chemical steps?

1. Eight
2. Seven
3. Six
4. Four

8-67. You are processing color reversal film in the E-6 process. During what step is your first opportunity to subject the film to white light without fogging the film?

1. Final rinse
2. Fixer
3. Bleach
4. Reversal bath

8-68. You are hand processing a roll of Ektachrome film. The entire roll of film was underexposed by one f/stop. What alteration to the process should you make to compensate for the underexposure?

1. Increase the time in the first developer only
2. Increase the time in the first developer and the color developer only
3. Increase the time in the bleach by 2 minutes only
4. Increase the time of all processing steps by 20 percent

Learning Objective: Identify advantages and disadvantages of machine processing.

8-69. Which of the following advantages apply to photographic machine processors?

1. They can process a high volume of production efficiently
2. They provide more consistent results than hand processing
3. Both 1 and 2 above
4. They require very little maintenance

8-70. Which of the following factors is an advantage of the Image Maker processor?

1. It requires no maintenance
2. Operator error is impossible
3. It is capable of processing a number of different films and papers
4. The chemicals can be easily replenished and used indefinitely

8-71. What factor(s) determine(s) the processing time required on a roller--transport processor?

1. The depth of the processing tanks
2. The distance the film must travel
3. The machine speed
4. All of the above

- 8-72. You should consult which of the following publications for specifications on installing an automatic film processor?
1. The U.S. Navy Standard Installation Manual
 2. The Kodak Processing Standards Manual
 3. The manufacturer's installation and service manual
 4. The Photo-Lab-Index
- 8-73. What unit of measure is used to express film processing time in an automatic roller-transport processing machine?
1. Feet per minute
 2. Time in/out
 3. Rate of travel
 4. Roller rack rotation
- 8-74. The roller assembly in the fixing tank of a roller-transport processor holds 18 feet of film. The machine is operated at 7.5 feet per minute. What is the fixing time, in minutes?
1. 1.8
 2. 2.4
 3. 3.2
 4. 4.1
- 8-75. The film exiting the dryer of an automatic processor is curled excessively. What action should you take?
1. Increase the transport speed
 2. Decrease the transport speed
 3. Increase the dryer temperature
 4. Decrease the dryer temperature

ASSIGNMENT 9

Textbook Assignment: "Image Processing and Control," "Black--and-White Printing," and "Color Printing." Pages 10-31 through 12-17.

Learning Objective: Identify characteristics of high-quality negatives.

9-1. A black-and--white negative should make a good print when printed with what contrast printing filter?

1. No. 1
2. No. 2
3. No. 0
4. No. 4

9-2. What areas have the most density on a negative?

1. Highlights
2. Shadows
3. Midtones

9-3. The difference between the highlight and shadow densities describes what characteristic of a negative?

1. Opacity
2. Tonal gradation
3. Density
4. Contrast

9-4. Which of the following combined factors will produce a thin negative?

1. Underexposure and underdevelopment
2. Underexposure and overdevelopment
3. Overexposure and underdevelopment
4. Overexposure and overdevelopment

9-5. Which of the following areas in a photographed scene will produce the most density on a negative?

1. A shadow
2. A red car
3. A black sailor in winter blues
4. A white road sign

9-6. A processed black-and-white negative has good shadow detail but lacks good contrast and highlight densities. What is the most probable cause of these negative characteristics?

1. Normal exposure and overdevelopment
2. Normal exposure and underdevelopment
3. Underexposure and underdevelopment
4. Underexposure and normal development

9-7. Which of the following factors contribute to the graininess of a negative?

1. The type of emulsion
2. Development
3. Exposure
4. Each of the above

Learning Objective: Recognize equipment and the method used to monitor photographic processes.

9-8. What instrument provides consistent, repeatable exposures and is used to produce test strips?

1. Densitometer
2. Sensitometer
3. Photo sensitizier
4. Grier film exposier

- 9-9. A step tablet provides a range of what number of f/stops?
1. 21
 2. 11
 3. 10
 4. 7
- 9-10. On a 21-step tablet, the difference in density between each step is what number of f/stops?
1. One
 2. Two
 3. One half
 4. One third
- 9-11. What instrument is used to read densities from photographic papers and film?
1. Sensitometer
 2. Densitometer
 3. Emulsion meter
 4. pH meter
- 9-12. You are reading the densities of a Kodacolor test strip. The filter setting should be set to what status?
1. M
 2. K
 3. C
 4. A
- 9-13. When reading a control strip on a densitometer, you should take the readings from (a) what area of the step with (b) the emulsion facing in what direction?
1. (a) Center (b) down
 2. (a) Center (b) up
 4. (a) Edge (b) down
 4. (a) Edge (b) up
- 9-14. On a process control chart, what does the symbol \bar{X} represent?
1. The center line
 2. The mean
 3. The average
 4. Each of the above
- 9-15. You plotted a Kodacolor control strip at the beginning of the production day. The HD reading plotted 0.10 units above the UCL. What action should you take?
1. Process the film normally
 2. Speed up the processor by 10 percent
 3. Add 1000 ml of developer replenisher
 4. Notify your supervisor
-
- Learning Objective: Recognize factors affecting the production and quality of contact black-and-white prints.
-
- 9-16. The most familiar type of photographic print has what type of base?
1. Paper
 2. Film
 3. Resin
 4. Ester
- 9-17. What are the two primary methods of making photographic prints?
1. Positive and negative reproduction
 2. Contact and projection printing
 3. Precision and fallacious reduction
 4. Enlargement and reduction printing
- 9-18. What printing method(s) can be used to produce print images that are the same size as the negative images?
1. Contact
 2. Projection
 3. Both 1 and 2 above
 4. Precision
- 9-19. Variable-contrast photographic papers are not sensitive to which of the following colors of light?
1. Blue
 2. Green
 3. Red
 4. Cyan

9-20. When hand processing black-and-white prints, you should use what minimum number of trays?

1. One
2. Two
3. Three
4. Four

9-21. What number of trays is recommended for hand processing black-and-white prints?

1. Five
2. Seven
3. Three
4. Four

9-22. Contact printing produces what negative to print ratio?

1. 1:1
2. 2:1
3. 1:2
4. 2:2

9-23. What grade of glass should be used when making color contact prints?

1. White
2. Neutral
3. Crystal
4. Clear Al

9-24. When using a proof printer, you should place the emulsion side of (a) paper and (b) film in what direction?

1. (a) Down (b) down
2. (a) Down (b) up
3. (a) Up (b) up
4. (a) Up (b) down

9-25. What is the main purpose of a masking device in a contact printer?

1. It protects the glass from scratches
2. It allows the prints to be produced with white borders
3. It holds the paper in place
4. It separates the negative from the glass

9-26. When viewed under a light source, the emulsion side of (a) film and (b) paper have what appearance?

1. (a) Shiny (b) shiny
2. (a) Shiny (b) dull
3. (a) Dull (b) dull
4. (a) Dull (b) shiny

9-27. What affect occurs when the material used to mask a contact print is too thick?

1. The print requires an excessive amount of exposure
2. The print image is reversed
3. The image is blurred along the edges
4. The paper does not get exposed

9-28. What term describes the guide on a contact printer that aides quick and proper paper alignment?

1. Mask
2. Goldenrod
3. Paper stop
4. Print border mark

Learning Objective: Identify steps used to process black-and-white paper and control the contrast of black-and-white prints.

9-29. When hand processing black-and-white prints, the image on the paper should appear in what length of time, in seconds?

1. 30
2. 15
3. 10
4. 5

9-30. You made a contact print with a number 3 contrast printing filter, but the print lacks adequate contrast. Which of the following filters should you use to make the reprint?

1. No. 1
2. No. 2
3. No. 1 1/2
4. No. 4

- 9-31. In hand processing, the term "pull" refers to what action?
1. Pulling the print through the entire process
 2. Removing the print from the developer prematurely
 3. Pouring chemical solutions
 4. Removing prints from the dryer
- 9-32. A negative with normal contrast was printed with a No. 4 printing filter. Which of the following statements best describes the appearance of the prints?
1. The number of tones, reproduced matches the original scene tones closely
 2. The print shows an abundance of middle tones with few shadow areas
 3. The print is very flat
 4. The print has high contrast
- 9-33. When developing prints in a tray, you should ensure they are agitated in what manner?
1. Frequently
 2. Intermittently
 3. Constantly
 4. Infrequently
- 9-34. Which of the following statements is most accurate regarding print quality?
1. Print quality depends upon correct exposure only
 2. Print quality depends upon correct development only
 3. Print quality depends upon correct exposure and development
 4. Print quality is governed by the working characteristics of the paper and developer
- 9-35. You are hand processing a single black-and-white print. The print should be treated in the stop bath for what number of seconds?
1. 20
 2. 15
 3. 10
 4. 5
- 9-36. What is the most probable result of a fixing bath that is diluted less than recommended?
1. The prints sink
 2. The prints float
 3. The prints blister
 4. The prints separate from the base
- 9-37. When hand processing photographic film and paper, it is common practice to work in what direction?
1. From right to left
 2. From left to right
 3. From top to bottom
 4. From bottom to top
- 9-38. You are hand processing 26 8x10-inch prints at one time in a tray. You should agitate the prints in what manner?
1. Move the bottom print to the top of the stack
 2. Move the top print to the bottom of the stack
 3. Turn all the prints at one time and fan them quickly
 4. Remove each print in succession from the developer, drain it for 5 seconds, then place the print at the bottom of the stack
- 9-39. You are processing several black-and-white prints at one time. You should treat the prints in the stop bath for what number of seconds?
1. 15
 2. 30
 3. 60
 4. 90

9-40. After you remove a series of black-and-white prints from the dryer, you notice several of the prints have white fingerprints on them. What is the most probable cause of these fingerprints?

1. Fingerprints on the negative
2. Hands with developer on them touched the paper emulsion before processing
3. Hands with fixer on them touched the paper emulsion before processing
4. Dryer temperature was set too high and pressure from fingers made an indentation in the softened emulsion

9-41. To economize on the quantity of developer, you should use only enough solution to barely cover the paper.

1. True
2. False

Learning Objective: Identify methods used in projection printing.

9-42. "Dodging" and "burning in" are terms that best describe what type of control?

1. Contrast
2. Process
3. Exposure
4. Sensitivity

9-43. What method of printing allows you to correct for distortion?

1. Contact
2. Projection

9-44. A 4x5-inch negative is enlarged so the entire negative image is reproduced on an 8x10-inch print. What is the image magnification of this print?

1. 1x
2. 2x
3. 3x
4. 4x

9-45. All other factors being equal, what type of enlarger produces the greatest print contrast?

1. Condenser
2. Diffusion
3. Condenser-diffusion

9-46. What type of enlarger should you use to obscure negative defects?

1. Condenser
2. Diffusion
3. Condenser-diffusion

9-47. What type of black-and-white enlarger is used most commonly for general printing in Navy imaging facilities?

1. Condenser
2. Diffusion
3. Condenser-diffusion

9-48. Any high-quality camera lens can be used on an enlarger to produce high-quality prints.

1. True
2. False

9-49. You are printing a 4x5-inch negative. Which of the following focal-length enlarger lenses should you use?

1. 50mm
2. 75mm
3. 105mm
4. 150mm

9-50. With a lens-to-paper distance of 24 inches and all other factors being equal, which of the following focal-length lenses provides the greatest image magnification?

1. 50mm
2. 75mm
3. 105mm
4. 150mm

9-51. When photographic enlargements are being made, the term "cropping" is used to describe what procedure?

1. Setting the timer
2. Setting the aperture
3. Composing the image
4. Processing the prints

9-52. You made a test print without a contrast printing filter using an exposure of 10 seconds at f/11. The test print looks flat and you are going to make another test print using a No. 4 Ilford Multigrade printing filter. Keeping the timer on 10 seconds, you should make the new test print at what f/stop?

1. f/16
2. f/11
3. f/8
4. f/5.6

9-53. Which of the following printing techniques should you use to subdue facial blemishes;?

1. Dodging
2. Burning in
3. Diffusing
4. Vignetting

9-54. A negative you are printing has objectional grain structure. Which of the following techniques should you use to minimize this affect to the greatest extent?

1. Use a diffusion enlarger and glossy paper
2. Use a diffusion enlarger with matte-surfaced paper
3. Use a condenser enlarger and glossy paper
4. Use a condenser enlarger with matte-surfaced paper

9-55. In which of the following circumstances might you be concerned with depth of field when making enlargements?

1. When using dodging techniques
2. When using variable contrast papers
3. When printing a 35mm negative of a tall building
4. When the negative image shows shallow depth of field

Learning Objective: Recognize basic principles used in color printing.

9-56. What is the resulting color when blue is removed from white light?

1. Yellow
2. Green
3. Red
4. Magenta

9-57. What are the colors of the additive primaries?

1. White, gray, and black
2. Cyan, magenta, and yellow
3. Red, green, and yellow
4. Red, green, and blue

9-58. What are the colors of the additive secondaries and the subtractive primaries?

1. Red, green, and blue
2. Cyan, magenta, and yellow
3. Red, green, and yellow
4. White, gray, and black

9-59. The middle emulsion layer of color paper is sensitive to what color(s)?

1. Yellow
2. Red
3. Green
4. Each of the above

COLOR	
1.	Green
2.	Blue
3.	Red
4.	Orange

Figure 9A

IN ANSWERING QUESTIONS 9-60 THROUGH 9-62, REFER TO FIGURE 9A AND SELECT THE COLOR THAT RESULTS BY MIXING THE COLORS USED AS THE QUESTION.

9-60. Magenta and yellow:

1. 1
2. 2
3. 3
4. 4

9-61. Cyan and yellow:

1. 1
2. 2
3. 3
4. 4

9-62. Magenta and cyan:

1. 1
2. 2
3. 3
4. 4

9-63. What filter is used to remove ultraviolet radiation emitted by the light source of a color enlarger?

1. CC red
2. CP yellow
3. IR7
4. CP2B

9-64. A color enlarger lamp is designed to operate on 115 volts but is only receiving 95 volts. The color change of the output of the lamp is equivalent to what No. CC filter?

1. 05
2. 10
3. 15
4. 20

9-65. During exposure, the color paper received an excessive amount of green light. The processed print has what color cast?

1. Green
2. Magenta
3. Cyan
4. Yellow

9-66. When you are evaluating a color test print, the viewing light source should produce (a) what Kelvin temperature at (b) what number of footcandles of illuminance, and (c) what should the CRI be?

1. (a) 3950 (b) 55 (c) 90
2. (a) 4000 (b) 195 (c) 130
3. (a) 5000 (b) 100 (c) 95
4. (a) 5400 (b) 130 (c) 100

9-67. You are using color printing viewing filters to determine the color balance of a test print. On what areas of the print should you base your judgment?

1. Highlights
2. Shadows
3. Borders
4. Middle tones

9-68. The gray area in a color print has a red cast to it. Therefore, the light used to expose the print was deficient in what color?

1. Yellow
2. Red
3. Cyan
4. Blue

- 9-69. A color test print has a yellow color cast. Using a subtractive type of printer, you should make what modification to the filter pack?
1. Subtract yellow only
 2. Add yellow only
 3. Add blue only
 4. Add magenta and cyan
- 9-70. Your calculated color printing filter pack is CC10Y + CC15M + CC05C. What should the actual filter pack be for the reprint?
1. CC15Y + CC25M only
 2. CC15Y + CC25M + CC10C
 3. CC05Y + CC15M only
 4. CC05Y + CC15M + CC05C
- 9-71. A color test print has a blue color cast. Using an additive type of printer, you should make which of the following adjustments?
1. Add blue
 2. Subtract blue
 3. Add yellow
 4. Either 2 or 3 above
- 9-72. What is the purpose of a standard negative?
1. It is used as a comparison of negative printing qualities
 2. It serves as a tool to compare the printing characteristics of different emulsions
 3. It can be used to program color analyzers and automated printers
 4. Each of the above
- 9-73. You took portraits of four sailors. Each sailor had distinctly different skin tones; however, after the negatives were printed, all the skin tones were depicted alike. What is the most probable cause of error?
1. A skin tone was used for negative evaluation
 2. The studio lights were the wrong Kelvin temperature
 3. The same portrait lights were used to photograph all four sailors
 4. The characteristics of the negative-positive system are such that all skin tones are reproduced alike
- 9-74. You are processing color prints using the RA-4 process. What is the approximate total processing time in minutes?
1. 2 3/4
 2. 4 1/2
 3. 8 1/4
 4. 12
- 9-75. Which of the following characteristics apply to a minilab system?
1. It requires maintenance
 2. It is capable of producing a high volume of prints
 3. It is operated under normal lighting conditions
 4. Each of the above

ASSIGNMENT 10

Textbook Assignment: "Motion Media," and "Job Control and Photographic Finishing." Pages 13-1 through 14-13.

Learning Objective: Identify basic principles of motion-picture photography.

- 10-1. What is the normal frames-per-second rate for motion pictures?
1. 12
 2. 24
 3. 48
 4. 96
- 10-2. What characteristic of human vision contributes to the illusion of motion in motion-picture photography?
1. Persistence of vision
 2. Image perception
 3. Chromatic stimulation
 4. Visual frequency response
- 10-3. With normal persistence of vision, the "after image" lasts approximately what length of time?
1. $\frac{1}{2}$
 2. $\frac{1}{4}$
 3. $\frac{1}{10}$
 4. $\frac{1}{50}$
- 10-4. Each picture area on a strip of motion-picture film is referred to by what term?
1. Cut
 2. Shot
 3. Frame
 4. Clip
- 10-5. What is the standard projection speed for a motion-picture film?
1. 8 fps
 2. 16 fps
 3. 24 fps
 4. 36 fps
- 10-6. A motion-picture film shot at which of the following fps rates produces the illusion of slow motion?
1. 6 fps
 2. 12 fps
 3. 24 fps
 4. 48 fps
- 10-7. What is the normal focal-length lens for a 16mm camera?
1. 50mm
 2. 35mm
 3. 25mm
 4. 16mm
- 10-8. What is the result when a motion-picture camera is panned with a polarizing filter over the lens?
1. Variable darkening of the sky as the camera is panned
 2. The polarizing grids cause the image to flicker
 3. Excessive sky contrast results from the inability of the filter to rotate at the same rate as the camera is panned
 4. Interference lines caused by the polarizing grids and the frame lines being out of synchronization
- 10-9. Which of the following is NOT an exposure controlling factor in motion-picture photography?
1. Film speed
 2. Shutter speed
 3. f/stop
 4. Lens filter

10-10. A motion-picture camera operating at the standard speed with a shutter degree opening of 168 degrees has what approximate shutter speed?

1. 1/500 second
2. 1/250 second
3. 1/100 second
4. 1/50 second

Learning Objective: Recognize basic principles of motion video.

10-11. Motion video has which of the following advantages over motion-picture photography?

1. Film processing is not required
2. It is edited more quickly
3. Videotape is easily duplicated
4. Each of the above

10-12. In a color video camera, what device separates white light into the three primary colors?

1. The color separator
2. The beam splitter
3. The automatic gain control
4. The frequency generator

10-13. What is the aspect ratio of a motion-video frame?

1. 2:1
2. 2:3
3. 3:4
4. 3:5

10-14. What term describes unwanted sounds or electrical interference in an audio or video signal?

1. Dropout
2. Capstan
3. Dub
4. Noise

10-15. What term depicts the smallest single picture element from which an image is constructed?

1. Frame
2. Field
3. Pixel
4. Composite

10-16. In a composite video signal, what does "Y" represent?

1. Yellow
2. Luminance
3. Color
4. Sound

10-17. What is/are the main cause(s) of dropout?

1. Poor microphone connection
2. Dirty heads
3. Imperfections in the tape
4. Both 2 and 3 above

10-18. What component in a video camera serves the same purpose as film in a motion-picture camera?

1. The cathode-ray tube
2. The charged-coupled imaging device
3. The beam splitter
4. The character generator

10-19. One complete television image is composed of what number of fields?

1. One
2. Two
3. Three
4. Four

10-20. A complete charge-forming-and-scanning process within a motion-video camera occurs what number of times per second?

1. 10
2. 20
3. 30
4. 60

10-21. Information from what section of a videotape allows the tape to be played on different but similar types of video players?

1. Control track
2. Video monitor
3. Video synchronizer
4. Helical control

10-22. The Hi8 system is completely compatible with all other recording systems.

1. True
2. False

Learning Objective: Identify guidelines used when shooting motion-picture photography.

10-23. You recorded a scene on a camcorder and the image appears grainy and flat. This appearance probably occurred due to which of the following causes?

1. A high-speed videotape was used
2. The scene brightness level was too high
3. The scene brightness level was too low
4. The gain was accidentally increased during recording

10-24. In which of the following situations should you manually focus a camcorder while recording a scene?

1. When the subject is extremely backlit
2. When the scene contains little contrast
3. When moving objects pass between the camera and the subject
4. Each of the above

10-25. Which of the following focal-length lenses should you use while shooting a motion-media scene from a moving boat?

1. 15mm
2. 25mm
3. 50mm
4. 75mm

10-26. What is the first rule of panning with a motion-media camera?

1. Pan from left to right
2. Pan only when using a fast shutter speed
3. Pan only when necessary
4. Pan with a short focal-length lens

10-27. Primary movement refers to the visual effect of motion that is created by what source?

1. Single camera
2. Multiple cameras
3. Computer graphics
4. The subject

10-28. What motion-media shot is used to tell where the action takes place?

1. ELS
2. LS
3. MS
4. CU

10-29. What motion-media shot is used to tell what action is taking place?

1. ELS
2. LS
3. MS
4. CU

10-30. What motion-media shot is used to present only action of primary interest?

1. ELS
2. LS
3. MS
4. CU

- 10-31. You made several shots of a subject using different camera angles. However, in one shot the background appears much different and looks as though it was shot in a different location. What rule of videography did you violate?
1. Action match
 2. Shot variety
 3. Continuity
 4. Sequential shooting
- 10-32. The subject of a video is shown moving directly toward the viewer. What type of screen direction is portrayed?
1. Forward
 2. Neutral
 3. Head on
 4. Nondirectional
- 10-33. What type of shot is made when the video camera is moved to follow a subject creating neutral screen direction?
1. Traveling abreast
 2. Constant screen direction
 3. Tracking
 4. Direction of travel
- 10-34. You are videotaping a baseball game. During the game, you shot several scenes of a boy eating a hot dog. This is what type of shot?
1. Reestablishing
 2. Establishing
 3. Cutaway
 4. Cut in
- 10-35. You are videotaping a soccer game. During the game, one of the players kicks the ball into the face of the referee. During halftime, you shoot a reenactment of the event. This is what type of shot?
1. Reestablishing
 2. Establishing
 3. Cutaway
 4. Cut in
- 10-36. As a Navy Photographer's Mate, you can expect most of your motion-media work to be of the uncontrolled-action type.
1. True
 2. False
- 10-37. What is the purpose of slating videotape?
1. To identify the film
 2. To ensure the camera is operating at the proper speed
 3. To take up slack in the cassette
 4. To color balance the camera on a neutral-gray colored object
- 10-38. A slate should be recorded for what minimum number of seconds?
1. 30
 2. 20
 3. 3
 4. 10
- 10-39. What form must accompany all media products forwarded to a Still and Motion-Media Records Center?
1. Video/film data sheet
 2. Visual information caption sheet
 3. Photographic job order
 4. NAVAIR form 12700
- 10-40. Videotapes should be stored in what manner?
1. Upright only
 2. Horizontally but not more than five high
 3. Horizontally but not more than ten high
 4. It makes no difference since videotapes are extremely durable

Learning Objective: Recognize security procedures used in Navy imaging facilities.

- 10-41. Security-related information pertaining to the Navy is contained in what instruction?
1. OPNAVINST 5290.1
 2. OPNAVINST 5510.1
 3. SECNAVINST 3150.6
 4. SECNAVINST 5212.5
- 10-42. Only those Photographer's Mates with a security clearance are responsible for safeguarding classified material.
1. True
 2. False
- 10-43. Security classifications are categorized in what number of designations?
1. One
 2. Two
 3. Three
 4. Four
- 10-44. What is the highest security classification?
1. Cryptographic
 2. Cosmic
 3. Exclusion
 4. Top Secret
- 10-45. At a Las Vegas hotel, you shot several rolls of film about sailors conducting themselves in actions that are unbecoming. These photographs could be detrimental to their careers and cause them much embarrassment. What classification, if any, should these photographs bear?
1. Secret
 2. Confidential
 3. For Official Use Only
 4. None

- 10-46. A roll of film that contains images of classified information should be marked in what manner?
1. On the emulsion side beneath each frame
 2. On the emulsion side at the beginning and end of the roll
 3. On the base side beneath each frame
 4. On the base side at the beginning and end of the roll
- 10-47. Classified 8x10-inch prints should be marked with the appropriate classification in what number of places?
1. One
 2. Two
 3. Three
 4. Four
- 10-48. A classified videotape should be marked appropriately in what location(s)?
1. At the beginning of the videotape only
 2. At the end of the videotape only
 3. On the tape case only
 4. At the beginning and end of the videotape as well as on the tape case
- 10-49. As a Photographer's Mate, you must protect classified material by what means?
1. Censorship and transmission
 2. Cryptographic and transmission
 3. Censorship and physical
 4. Physical and cryptographic
- 10-50. A record of destruction of Top Secret material must be retained for what number of years?
1. 1
 2. 2
 3. 3
 4. 4

- 10-51. What type of security area requires the strictest access control?
1. Restricted
 2. Controlled
 3. Limited
 4. Exclusion
- 10-52. What person is directly responsible for safeguarding classified material in an imaging facility?
1. The division officer
 2. The department head
 3. The commanding officer
 4. The security manager
- 10-53. Which of the following items should NOT be stored in a class A vault?
1. Top Secret
 2. Secret
 3. Confidential
 4. Imprest funds
- 10-54. The combination to a safe used to store classified material must be changed at an interval not to exceed what period of time?
1. 1 year
 2. 6 months
 3. 3 months
 4. 1 month
- 10-55. Which of the following combinations should NOT be used for a safe containing classified material?
1. 6-37-50
 2. 5-10-15
 3. 22-47-9
 4. 2-53-12
- 10-56. When a safe is taken out of service, it should be reset to what combination?
1. 50-25-50
 2. 25-50-25
 3. 10-20-30
 4. 5-10-15
-
- Learning Objective: Recognize administrative procedures used in Navy imaging facilities.
-
- 10-57. Navy imaging administrative and operating procedures are contained in what instruction?
1. OPNAVINST 5290.1
 2. NAVEDTRA 13014
 3. SECNAVINST 3150.6
 4. NAVAIRSYSCOMINST 10700.2
- 10-58. The job order number in the job order log should be reset annually to 000001 on what date?
1. 1 January
 2. 1 April
 3. 1 August
 4. 1 October
- 10-59. The job order form serves what purpose?
1. As a customer receipt
 2. As an authority to perform work
 3. As a record of expenditures
 4. Each of the above
- 10-60. A color negative is identified by what VIRIN code?
1. SCN
 2. VPS
 3. CLN
 4. CLR
- 10-61. You are preparing the VIRIN for an unclassified, color slide that was shot on 10OCT93. Which of the following examples is appropriate for the slide?
1. N0341-SPT-93-000020
 2. N0341-SPT-94-000020
 3. N0341-SPT-93-000020-UC
 4. N0341-SCS-94-000020

10-62. The VIRIN of a videotape cassette should be recorded at the beginning of the tape for a minimum of what viewing time, in seconds?

1. 5
2. 10
3. 15
4. 30

10-63. All Navy imaging products forwarded to a Visual Information Records Center for preaccessioning must be accompanied by what form?

1. DD Form 10700
2. DD Form 2537
3. DD Form 1348
4. OPNAV 5290/1

Learning Objective: Identify methods used to mount prints.

10-64. Normally, prints are mounted in which of the following ways?

1. With all borders equal
2. With the top border being the widest
3. With the bottom border being the widest
4. With a mounting board that has loud, contrasting color

10-65. Which of the following adhesives should you use to mount photographic prints on a mounting board?

1. Rubber cement
2. Gum arabic
3. Paste
4. Glue



NONRESIDENT TRAINING COURSE



Journalist Basic

NAVEDTRA 14321

NOTICE

Page 11-15 must be printed on a
COLOR printer.

PREFACE

About this course:

This is a self-study course. By studying this course, you can improve your professional/military knowledge, as well as prepare for the Navywide advancement-in-rate examination. It contains subject matter about day-to-day occupational knowledge and skill requirements and includes text, tables, and illustrations to help you understand the information. An additional important feature of this course is its references to useful information to be found in other publications. The well-prepared Sailor will take the time to look up the additional information.

Any errata for this course can be found at <https://www.advancement.cnet.navy.mil> under Products.

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- Apr 2002: Original edition released.
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CHAPTER 1

THE NAVY JOURNALIST

To the young man or woman choosing a Navy career field, whether for one enlistment or for 30 years, the journalist rating offers endless avenues for an imaginative, yet mature, thinker.

Many of the duties and responsibilities of the journalist rank among Americans' favorite hobbies and pastimes, such as writing, broadcasting and photography. The Navy Journalist learns and practices a distinguished profession and becomes an official representative of the Navy in public affairs matters (fig 1-1).

The first enlisted specialists to work full-time in the field of Navy Journalism were Naval Reserve personnel selected during the early years of World War II. They were designated Specialist X (Naval Correspondents). In 1948, under a major overhaul affecting almost every enlisted rating, the Journalist (JO) rating was established.

MAJOR TASKS AND RESPONSIBILITIES

LEARNING OBJECTIVE: Identify the major tasks and responsibilities of the Navy Journalist, the personal traits required for one to best perform the duties of the rating, the applicable NECs, and the purpose of the JO Basic Nonresident Training Course (NRTC).



Figure 1-1.—A Navy Journalist is a representative of the Navy in public affairs matters.

In our democratic society, government depends on the consent of the governed. This important principle means that, in the long run, the United States government does only what the people want it to do. Therefore, we can have a Navy only if the people know and understand the importance of the Navy and support it.

The Navy, like the other services, depends on this country's citizens for the four key tools of its trade—personnel, money, materials and the authority to carry out its mission. As a Navy Journalist, your main function will be to make the facts about your Navy available to the Navy's three main publics—the people at your ship or station, Navy people in general and the people of the United States as a whole.

Your CO is responsible for informing the Navy's publics. Your responsibility is to assist your command's public affairs officer (PAO) in accomplishing the Navy's and the command's public affairs goals.

Some of the key assignments for Navy Journalists include the following:

- Writing Navy news releases and feature articles from personal interviews, examination of messages or witnessing events
- Taking and processing news photographs and writing cutlines
- Preparing material for commercial radio and television use
- Serving on the staff of an American Forces Radio and Television (AFRTS) station or Naval Media Center (NMC) Broadcasting detachment as an interviewer or announcer (subject to the requirements for voice quality, public speaking, presence and sense of timing)
- Preparing command histories and CO, XO and C/MC biographies
- Rewriting and localizing news releases received from the Navy Internal Relations Activity (NIRA) and other sources throughout the naval establishment
- Coordinating special events

- Editing material and preparing copy, art and layouts for the printing of Navy publications, such as ship and station newspapers, command information brochures, welcome aboard brochures, cruisebooks and fact sheets
- Assisting in the preparation of speeches and other presentations on naval topics
- Preparing material on individual Navy members for release to the Navy's Fleet Home Town News Center
- Preparing official correspondence and directives and performing other administrative functions in a public affairs office
- Design, update and implement command World Wide Web sites and Internet homepages

To perform these duties well, you need to master verbal, oral and visual communication techniques. You must be a constant reader who is always abreast of current events in and out of the Navy. You must know enough about the Navy to interpret and translate its activities and actions intelligently to the civilian public. In the performance of their duties, journalists are expected to produce smooth copies of their own material. Therefore, you must be a qualified typist who meets the established standards for speed and accuracy. You also must be computer literate.

Finally, you as a journalist must have the ability to learn, and your main learning objective must be learning to write well. You must be better than average in your use of the English language. You must learn to write quickly, plainly and accurately. Your aim is to turn out news copy that can be used by a newspaper or radio/television station with a minimal need for editing or rewriting.

The major areas in which you will be expected to develop knowledge and skills include newswriting, editing and the layout and makeup of Navy publications. Other areas are the principles of printing, radio and television, still and digital photography and administration.

As you progress in experience, maturity and service seniority, you likely will become the trusted executive of the PAO. As such, you will find yourself performing many of the functions of a PAO. This will be particularly true if your boss is a collateral-duty PAO. Collateral duty means that the officer has other assignments that are considered primary duties. In such cases his primary responsibilities often allow only minimum time for public affairs work. Therefore,

you also must learn the theory and practice of public affairs policy.

A COMMON MISPERCEPTION

There is a tendency for Navy Journalists to believe they are part of America's free press and thus part of the investigative journalist corps. This notion could not be further from the truth.

The moniker "Navy Journalist" is misleading because the JO is a **public information specialist**—not a free press journalist. Navy Journalists are assigned to command information, public information and community relations duties. When assigned to public information staffs, Navy Journalists write releases to tell the Navy story and to respond to queries by the investigative free press. When assigned to command information staffs, Navy Journalists may write for civilian enterprise (CE) or funded command newspapers—what the industry terms "in-house" publications.

Just as a writer for commercial industry would not write investigative articles concerning his company for the in-house publication, Navy Journalists would not write investigatively concerning their own individual commands or the Navy. Navy Journalists may tackle controversial social issues in print or on videotape, but they must avoid works that attack or injure, or that give the impression of attacking or injuring their commands or the Navy.

NEWS IN THE NAVY COMMUNITY

New Navy Journalists are often confused about their role in the Navy community. Most are familiar with the print and electronic media back home. They are used to the civilian reporter investigating, or reporting on the investigation of fraud, waste or abuse in the local, county or state government.

In arriving at their first duty assignment, they find a community that seems to be somewhat similar to that of their hometown. The CO seems to be the mayor, and the chief master-at-arms represents the chief of police. The CO's staff fills the rest of the government positions. There are schools, stores, businesses and recreational services.

However, Navy Journalists must learn that the CO is not so much a mayor as he is the president of a company. Likewise, the Navy community is really much like a company town. Your job within this community is to enhance morale, to increase readiness

and productivity, to be the voice of the CO to his community, and to inform, educate and entertain the Navy's internal audience.

PERSONAL TRAITS

To accomplish the assignments previously mentioned, the Navy Journalist must have certain personal characteristics. Some are general characteristics that contribute to success in any rating, but others are an integral part of the public affairs profession. The characteristics of appearance, voice, military bearing, courtesy and personality will become more evident as you read and complete this Nonresident Training Course (NRTC).

APPEARANCE

Good personal appearance is especially important to the Navy Journalist. Most of your work will be relatively clean in nature, so it is possible to work hard and still look neat. Since your duties place you in a position to meet visitors, escort reporters, interview VIPs, act as a tour guide, and so forth, good appearance is more necessary than in some other jobs in the Navy. Always make sure every aspect of your personal appearance, from your haircut to the edge dressing on your shoes, is first-rate.

VOICE

Voice and manner of speaking are important. You should avoid an overly loud voice; but likewise, you should avoid speaking too low or indistinctly. Localisms of vocabulary or accent may be merely pleasant marks of individuality, or they may be hindrances because they make the speaker hard to understand. If you have conspicuous speech habits of this sort, you should attempt to correct them. Your attention to pronunciation of words will always be worthwhile.

MILITARY BEARING

All petty officers have an obligation to conduct themselves with dignity and in such a manner as to reflect credit on the naval service. Dignity exists only where the individual has a proper sense of his own worth and of the worthiness of his cause. The person who possesses true dignity also will respect the dignity of others.

Military bearing is dignity within military relationships. It exists when the individual is proud of his military organization and of his part in it. He respects his seniors and is guided by the example of those he admires most among them. He also respects his juniors and tries to provide an example they will be proud to follow. Whether he is squaring his hat, rendering a salute, carrying on the work of his office, or going on liberty, his manner says that he is proud of the Navy and is doing his best to make the Navy proud of him.

COURTESY

The qualifications for advancement do not list courtesy as a requirement, but they imply it. Most situations require a certain minimum standard in terms of manners, and unless we display this standard, we are in trouble. Courtesy goes far beyond that. It is in fact totally different in character, because courtesy comes from within and is a voluntary expression of respect for the rights and feelings of others. How your job as a journalist involves your interaction with others is emphasized throughout this NRTC. More than any other rating in the Navy, you will be associated primarily with people in the civilian populace. Courtesy on your part will smooth the way not only for you, but also for your command, your seniors and the people who work for you.

PERSONALITY

A pleasing personality is a must in the journalist rating. You must be able to get along with your shipmates, because their cooperation is necessary before you can carry out your duties. Always strive to establish a good name for the JO community. When you have the confidence of your shipmates, your job will be 100 percent easier.

NAVY ENLISTED CLASSIFICATIONS

Navy Enlisted Classifications (NECs) are four-digit numbers that indicate special qualifications earned by an individual. Currently, there are three NECs available to Navy Journalists, as described in the following text.

JO-3251—BROADCAST OPERATIONS DIRECTOR

Individuals with this NEC direct the operations of radio, television, satellite, cable and SITE support

systems as coordinated elements of the command information broadcasting function. Other key tasks include conducting research and planning programming, production, budgeting, training and maintenance.

This NEC could be part of your long-range career planning. You earn this NEC by graduating from the Broadcast Managers Course (BMC) at the Defense Information School (DINFOS); see fig 1-2.

PH-8147—PHOTOJOURNALISM SPECIALIST

Although this is primarily a Photographer's Mate NEC, members of the JO rating also may earn it. Sailors with this NEC cover and photograph events of news or documentary interest, while supporting and effectively meeting the public affairs objectives and programs of the military services. They apply layout and design principles, news and feature writing, basic and advanced photographic techniques and production, and demonstrate writing and photographic skills.

To earn this NEC, you must first complete the eight-week Intermediate Photojournalism Course (IPC) offered at the DINFOS (JO "B" School), then perform as a photojournalist in the field for one year. Your CO must forward an endorsement to the DINFOS before the NEC is approved and awarded.

PH-8148—PHOTOJOURNALIST

Sailors with the PH-8148 NEC photograph newsworthy events, prepare photography in news form, write captions and text for news stories, and maintain liaison with their counterparts in the news media. They also train personnel in photojournalism techniques.

You can earn this NEC by applying for acceptance to PH/JO "C" School at the Syracuse University. This fully accredited curriculum includes a minimum of 18 semester hours (30 quarter hours) of advanced



Figure 1-2.—An individual with a JO-3251 NEC can direct the operations of radio, television, satellite, cable and SITE support system.

photojournalism techniques and practices, including picture editing, newswriting and reporting, feature article writing, graphic arts, layouts, design, ethics in journalism, and many others. The NEC is awarded after your successful completion of the course.

You may obtain further information on all 3 NECs by consulting the *Manual of Navy Enlisted Manpower and Personnel Classifications and Occupational Standards, Volume I (Navy Enlisted Classifications)*, NAVPERS 18068F.

NRTC PURPOSE

The purpose of this NRTC is to ensure the quality and integrity of Navy Journalist training. It is based on the most current (at the time of this writing) journalist occupational standards (OCCSTDS). Since OCCSTDS change periodically, be sure you check with your Educational Services Officer (ESO) for the most up-to-date OCCSTDS.

This NRTC will not make you an accomplished writer or a public affairs specialist overnight, but it can help. It contains many useful rules and tips that, if you learn and practice, will lead you down the path of success in one of the most exciting and rewarding ratings in the U.S. Navy.

CHAPTER 2

BASIC NEWSWRITING

What elements make a news story and how are they used to construct a story?

If you were to pose these questions to a group of reporters, it is probable that no two of them would give the same responses. However, all would most likely include in their answers a similar list of elements they consider necessary for a story to be newsworthy.

This chapter will include a list of elements and other essentials that will help you be successful in writing a basic news story (fig 2-1).

BASIC ELEMENTS OF A NEWS STORY

LEARNING OBJECTIVE: *Identify the basic elements of a news story.*

For the purposes of this NRTC, we will use the following 10 categories as those covering the major elements of news:

- Immediacy
- Proximity
- Consequence
- Conflict
- Oddity
- Sex

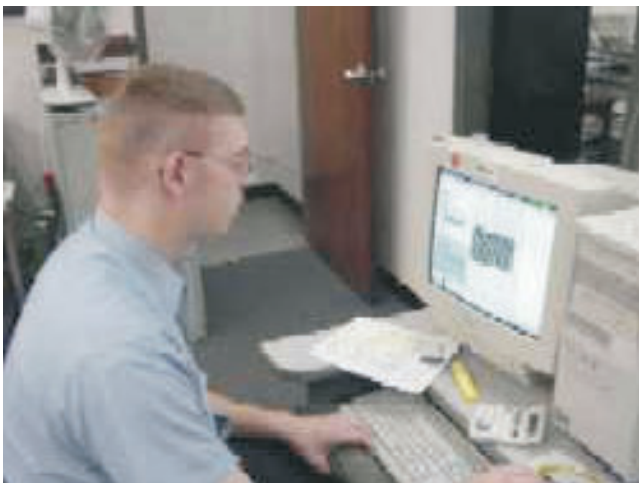


Figure 2-1.—Journalists apply skills they learn at the Defense Information School in the fleet.
(Photo by JOC Pricilla Krish)

- Emotion
- Prominence
- Suspense
- Progress

If any one of these elements is present, a story has news value. However, many stories contain more than one element. Remember this latter fact as you study the material that follows because even though the 10 elements are used as the framework of this discussion, several of the examples given might just as well be discussed under different elements.

Remember, too, this is just one possible classification; another textbook might have classified these elements in slightly different categories. Rather than memorizing a set of categories, your chief concern should be to develop your understanding of what constitutes an interesting news story.

IMMEDIACY

A story that has just happened is news; one that happened a few days ago is history. Immediacy is timeliness. Few events of major significance can stand up as news if they fail to meet the test of timeliness. There is no point in submitting a news release on a routine change of command that occurred 4 days ago; the event is not big enough to overcome the time lag. A newspaper looks foolish if it publishes a news story, and after reading it, a subscriber says, “I heard about that 2 days ago.”

However, an event that occurred some time ago may still be timely if it has just been revealed. Examples are a newly discovered diary of John Paul Jones or the disclosure of a startling scientific accomplishment that occurred months ago, but has just been declassified. In these cases, the immediacy element revolves around the fact that the news was revealed or disclosed **today**. An up-to-the-minute touch is provided by words such as “newly disclosed,” “revealed,” “divulged” or “announced today.”

PROXIMITY

Readers are interested in what happens close to them. Proximity is the nearness of an event to the readers or listeners and how closely it touches their lives. People are interested mainly in themselves, their families, their ships or stations, their friends, and their hometowns. If Captian Gunn relieves Captian Stone as commanding officer of Naval Station Annapolis, it is news in the Annapolis, Baltimore and Washington areas and in the two officers' hometowns. It is not news in Huntsville, Ala., where no one knows either captain or cares particularly who commands a naval station in Maryland. Improvement or progress stories are important in their degree of proximity.

The Navy's hometown news program is based on this element. When Thomas Katt, Seaman Apprentice, USN, reports to USS *Pine*, it is news for his hometown paper. Back home in Hialeah, Fla., he is not Navy Seaman Apprentice Thomas Katt. He is Mr. Michael Katt's son, Thomas, who used to help his father rebuild homes devastated by Hurricane Andrew. He is someone the readers know. The element of proximity is present to a high degree. Further information on hometown news is in chapter 17.

CONSEQUENCE

News of change or news that affects human relations is news of consequence. The more people affected, the greater the news value. A story on the advancement of 1,500 petty officers has consequence within the Navy, especially to those who took the exams. A congressional act that raises the pay of everyone in the armed forces is of great consequence both to the Navy and to the public.

CONFLICT

Sporting events, wars and revolutions are the most common examples of conflict in the news. Man may be pitted against man, team against team, nation against nation or man against the natural elements. A story about a pilot struggling to land a crippled plane or a coxswain's heroic efforts to keep his crowded boat from swamping in heavy seas are other examples.

ODDITY

The unusual or strange event will help lift a story out of the ordinary. If an ordinary pilot parachuted out of an ordinary plane with an ordinary parachute and makes an ordinary landing, there is no real news value.

However, if the aviator has only one leg, this is news; or if the parachute fails to open and the pilot lands safely, this is news. A Sailor named B. A. Sailor is a good angle. So is the helicopter that towed a ship, the man that bit his dog or the plane that landed even though the pilot had bailed out.

SEX

Sometimes sex is the biggest single element in news, or at least it appears to be the element that attracts readers the most. Consider all the stories in papers that involve men and women—sports, financial news, society and crime. Sex, in discussing news elements, covers far more than a Hollywood star's impending visit to your command. The element of sex ranges from front-page sensationalism to news involving engagements and marriages.

Stories and accompanying pictures of movie stars or other prominent celebrities visiting your ship or station can be loaded with sex. Nevertheless, any type of news that overemphasizes the sexual element is in poor taste for an official Navy release and must be avoided.

EMOTION

The emotional element, sometimes called the human-interest element, covers all the feelings that human beings have, including happiness, sadness, anger, sympathy, ambition, hate, love, envy, generosity and humor. Emotion is comedy; emotion is tragedy; it is the interest man has in mankind. A good human-interest story can range from a real "tear jerker" to a rollicking farce.

PROMINENCE

Prominence is a one-word way of saying "names make news." When a person is prominent, like the President of the United States, almost anything he does is newsworthy—even his church attendance. Several hundred civilians may visit your ship or station in the course of a month without raising a stir. Yet, if one happens to be the governor of the state, you have a news story packed with prominence. Prominence is not restricted or reserved for VIPs only. Some places, things and events have prominence. For example, the White House (a place), the Hope Diamond (a thing) and Christmas (an event) all awaken interest.

SUSPENSE

You most often see the suspense element presented in a day-by-day or hour-by-hour account of some high-visibility event. Examples are a desperate search for a lost submarine, or a story of rescue operations in a mine where workers are trapped, or in the efforts made to rescue a Navy diver trapped in the wreckage of a sunken ship. A news story does not build to a climax as a mystery does. But, still cite the most important facts first. This practice helps to heighten the suspense of many stories because the ultimate outcome is unknown and is usually revealed through progressive, periodic installments.

PROGRESS

In our technologically advanced society, we are interested in space exploration. Therefore, developments of more powerful and advanced rockets to propel manned space flights are of great interest to most Americans.

Progress does not have to be dramatic. For example, an improvement in mooring lines, shoe leather or paper clips can be significant progress. There is a great deal of progress in Navy news stories. The Navy is constantly making progress in seamanship, weapons systems, aeronautics, nuclear propulsion, medicine, habitability, education, human relations, leadership and other fields.

IDENTIFICATION OF DOMINANT NEWS ELEMENTS

LEARNING OBJECTIVE: *Distinguish the dominant news elements in basic news stories.*

Just how are these key elements applied in judging the newsworthiness of an event?

First of all, the newsworthiness of a story depends on the strength or intensity of the news elements it contains—the more intense the elements, the more newsworthy the story.

After gathering material for a news story, you normally find that one or more elements overshadow the others in intensity. These are the **dominant elements**. This is sometimes referred to as the **news peg**.

NEWS PEG

A news peg is the most significant or interesting fact in a story. It is featured in the first paragraph, and all other facts revolve around it. In other words, it is a foundation around which you construct the facts of your story.

For just a few moments, put yourself in this hypothetical situation and assume that you are a JO assigned to the Public Affairs Office, NAS Moffett Field, Calif. The facts of the story, for which you have been given the task of readying for a 1400 release to the local media, are as follows:

1. Navy Lt John R. Doe, son of Mr. and Mrs. John Q. Doe of 1234 C St., Long Boat Calif., is a pilot attached to Fighter Squadron 44 at NAS Miramar.
2. At 9 a.m. (always use civilian terminology for civilian media), Lt Doe took off from the naval air station in a supersonic F-14 "Tomcat" for gunnery practice over the Mojave Desert.
3. At 9:20 a.m., while flying at an altitude of 13,000 feet, Lt Doe put his plane into a shallow dive and fired a few bursts from his cannon. When he pulled out of the dive a few seconds later, hydraulic warning lights lighted up like a Christmas tree.
4. Lt Doe fought desperately to control his damaged plane, but had to bail out.
5. Amazingly, the Tomcat landed in the desert. The plane's wings sheared off causing considerable damage, but the pilot escaped serious injury. He walked away from the crash, but collapsed from shock and loss of blood.
6. After an emergency blood transfusion and treatment for shock, Lt Doe is recovering at the NAS hospital. Doctors report that his condition is good.
7. A preliminary investigation into the cause of the accident revealed that Lt Doe's jet had lost hydraulic pressure.

Now that we know the facts in the story, let us see if we can determine the most dominant elements. Table 2-1 will help you analyze them. Elements have been classified in degrees of **very strong**, **strong**, **weak**, **very weak** and **none**.

As you can see, the elements of immediacy, proximity and oddity are listed as strong. They are dominant elements in this story, with oddity taking a decided edge over the other two. They will be combined in the news peg, which will be featured in the

Table 2-1.—Analyzing News Elements

News Element	Degree of Intensity	Justification
Immediacy	Strong	Accident occurred this morning. Story will be released this afternoon.
Proximity	Strong	Accident occurred locally. Squadron and pilot are attached locally.
Consequence	Weak	Measures will undoubtedly be taken to prevent further recurrence of this type, but this one incident in itself does not affect a great number of people.
Conflict	Weak	The pilot's struggle for survival is worth mentioning, but more details are necessary to make this element strong.
Oddity	Very Strong	Nothing like this has been recorded before.
Sex	None	-----
Emotion	Very Weak	The reader will sympathize with the pilot, but not beyond the extent one human being sympathizes for another human being in an unfortunate situation.
Prominence	None	The pilot is not widely known.
Suspense	Weak	Although the facts, as presented here, do not lend themselves to suspended interest, the story has a certain amount of drama and suspense.
Progress	Weak	Progress in aviation may eventually result from this situation, but there is nothing in the facts that will improve mankind's health, comfort or happiness.

beginning of the story. The news peg for this story could be written as follows:

"A Navy plane was shot down by its own gunfire near San Jose today. The plane, piloted by Lt. John R. Doe,...."

As the story is developed, the other facts are introduced to complement or supplement the dominant elements featured in the news peg.

Table 2-2 lists a few other examples of analyzing dominant elements for the news peg. The first element listed is the strongest. The others, if there are any, are supporting elements.

Note that immediacy and proximity are not listed as dominant elements, unless they actually overshadow the other elements. Immediacy is present in practically every story because the facts must be **new** to be considered **news**. Proximity also is present in practically every local story.

SPOT AND CREATED NEWS

Most Navy news (and all other news as well) can be classified as either **spot news** or **created news**.

Spot news just happens. A ship runs aground. A plane crashes. A heroic rescue takes place in a

Table 2-2.—Identifying Dominant News Elements

News Item	Dominant Element
Today is the final day for filing your annual income tax return.	Immediacy Consequence
A Navy flier, who braved enemy ground fire to locate a downed fellow airman over hostile territory, has been posthumously presented the Navy Cross.	Emotion
The Administration is near a final decision —perhaps it will come next week —on how much of a pay raise it will seek for the armed forces.	Consequence
The President of the United States submitted the names of 50 flag rank selectees to the senate for confirmation, including the name of Captian Mary Chairman. Captian Chairman, a Nurse Corps selectee, will be the Navy’s first woman flag officer.	Prominence/sex
Seaman A. B. Smith, son of Mr. and Mrs. A. C. Smith of Route 2, Fayetteville, Tenn., is currently patrolling the Western Pacific with the Seventh Fleet aboard the aircraft carrier USS <i>Kitty Hawk</i> .	Proximity (in the Fayetteville area)
A Navy officer, who had never taken control of an aircraft, brought an Air Force spotter plane in for a rough but successful landing recently. The incident came about after the pilot was killed by ground fire during a routine observation mission over enemy territory.	Oddity/Suspense
More new weapons systems than before, an improved retention rate, better housing and an increase in minority recruiting were some of the accomplishments that Paul T. Boate was proud to list from his 3 1/2 years as Secretary of the Navy.	Progress/Prominence
Navy sank Delaware, 24-3 today in the first ever Blue Crab Bowl at Navy-Marine Corps Memorial Stadium.	Conflict
The first female seaman qualified today as a deep-sea diver at the Navy Diving and Salvage School.	Sex/Oddity

storm-tossed sea. These are just a few examples. Your job is to provide a full account of a spot news story as soon as possible—even in cases where the general effect is unfavorable to the Navy.

Created news is generally concerned with something the Navy has done or plans to do that the public should know about. Examples include air shows, command public visitations, changes of command, unveiling new ships, planes or weapons, construction programs, special achievements, ship arrivals and many of the other daily events of Navy life.

Your job is to bring the information to the attention of news media, usually through a Navy news release.

CLASSES OF NEWS STORIES

Most Navy news stories fall into four main categories—hard news, feature, sports and social. They are described in the following text.

Hard News

The hard news story is designed primarily to inform. It usually concerns a news item involving or affecting the

readers, listeners or viewers. The hard news story has usually taken place since a previous issue of a newspaper radio or television newscast. Much of the material found in daily papers (especially front-page items) or newscasts are in the hard news category.

Feature News

The feature news story is about an event or situation that stirs the emotions or imagination. The event may or may not have taken place, or the situation may or may not have arisen since the last issue of a periodical or delivery of a newscast. The feature story is designed primarily to entertain, but it also serves to create interest or to inform the reader. It may be about a Sailor with the unusual hobby of collecting 18th-century etchings, a command that has adopted a stray goat as a mascot, a Navy cook who worked in a leading French restaurant before enlisting or, in a serious vein, the plight of a child who has been orphaned by an automobile accident.

Sports News

The sports news story may be handled as either hard news or a feature. These stories chronicle the activities of athletic teams, discuss upcoming games and detail the accomplishments of sports figures. In most cases of Navy sports, unless teams are prominent (such as that of the U.S. Naval Academy), the material is aimed at ship and station publications.

Social News

The social story, which may also be handled as either hard news or as a feature, primarily concerns wives, daughters and family activities. Most often Navy social stories deal with the activities of officers and enlisted wives' clubs, the happenings of the teen-age set, weddings and local charity events.

Other Categories

Other categories of stories frequently used in metropolitan newspapers include interpretive, science, consumer and financial.

INTERPRETIVE.—In an interpretive story, the reporter attempts to give an in-depth analysis and survey of the causes or possible consequences of important news events.

SCIENCE.—With this story, the reporter attempts to explain, in layman's language, scientific and technological news.

CONSUMER.—The writer of a consumer story attempts to help his audience buy more wisely, maintain products and homes better, cook or garden better and so forth.

FINANCIAL.—Writers of financial news focus on business, commercial or investment stories.

Writers of these stories are usually expected to have an academic background or experience in their subject matter, as well as the ability to observe and write well.

NEWS STYLE VS. LITERARY ENGLISH

LEARNING OBJECTIVE: *Recognize the differences between the news and literary English writing styles; identify the ABCs of journalism.*

Many great writers have been known for their dramatic styles, vivid descriptions, and the eloquent conversation of their characters. It is obvious, however, that these great writers were not concerned with news style writing or the fundamentals of newswriting. Consider the following quotation for example:

“It is a thing well known to both American and English whalers, and as well a thing placed upon authoritative record years ago by Scoresby, that some whales have been captured far north in the Pacific, in whose bodies have been found the barbs of harpoons darted in the Greenland seas. Nor is it to be gainsaid, that in some of these instances two assaults could not have exceeded very many days. Hence, the inference, it has been believed by some whalers, that the North West Passage, so long a problem to men, was never a problem to the whale.”

Perhaps this quotation is familiar to you. It is from *Moby Dick*, which is one of the greatest sea stories ever written. It was published more than 100 years ago and is still read today. Its author, Herman Melville, was known for his moving literary style.

A modern journalist writing this piece for a newspaper might put it on paper as follows:

“The Northwest Passage, long sought by man, may be known and used by whales.”

“American and British Sailors have reported finding the barbs of harpoons from Greenland in the bodies of whales killed in the

North Pacific. In some cases, the wounds were only a few days old. This has led some whalers to believe that whales must use some shortcut from the North Atlantic to the North Pacific.”

The preceding contrast shows the difference between literary writing of more than 100 years ago and newspaper English today.

Media writing is geared to the public, not the professor. The purpose is to inform, not to impress. All the frills are stripped away. Unnecessary wording costs the media money in terms of time (electronic) or space (print).

Newspapers are read in a hurry. They are read at breakfast, on the subway, against the blare of radio or television, or over someone’s shoulder. Many readers scan the headlines and read only the opening paragraphs of a few articles. These readers have neither the time nor the desire to wade through literary writing. Many may have limited educations. Surveys show that the average newspaper reader has the reading ability of a 12-year-old child.

Does this mean that you have to write for 12-year olds? No, it does not. We are not speaking of the readers’ ability to grasp ideas, but rather of their ability to understand difficult words. There is a great difference. For example, consider the following paragraph:

Gravitation is omnipresent; it is exerted by every body on every other body, no matter how remote or minute. Between two given objects, its force varies directly with the product of the two masses and inversely with the squares of the distance between their centers. Exerting itself throughout the universe, it is gravitation that keeps the cosmos in equilibrium.

This paragraph is obviously too difficult for an adult with a 12-year old reading level. Yet the adult mind could grasp the idea involved if we translate the paragraph into simple English such as follows:

All bodies attract each other. This is true no matter how small or far apart they may be. The heavier two objects are, the more they pull on each other. The farther apart they are, the weaker this force becomes. In measuring the pull, distance is particularly important, for if you double the distance, the force is cut to one-fourth of its former strength. This force is called gravitation. Because of it, the earth,

sun, moon and stars all pull against each other. The forces balance, and everything stays in its proper place.

Almost any idea, no matter how complicated, can be expressed in simple language. As a Navy Journalist, you may have to explain some fairly technical ideas to readers who are not familiar with military life. You will have to do it in language they will understand. It is up to you to do the work of simplification, **not your readers**. If they find your writing is “over their heads,” they will skip your piece and go on to something that is easier to read. If this happens, you are not doing your job.

Also remember —the story you write for the general news media will probably be read by someone with a Ph.D. How do you satisfy both? A good writer can present the information so that the less educated can understand and so that the more intelligent will not become bored.

THE ABC’S OF JOURNALISM

Some principles of newswriting you must apply every time you attempt to put words on paper include accuracy, brevity, clarity, coherence, emphasis, objectivity and unity.

ACCURACY

If a writer has to pick one principle that should never be violated, **accuracy** should be the one. To fall down in this area is to discredit your entire writing effort. As a JO, you will be working with facts. These facts will involve persons, places and things. The facts will involve names, ages, titles, rank or ratings, addresses and descriptions. You will work with facts that are both familiar and unfamiliar to you.

You cannot afford to be casual in your approach to facts. Your readers will often judge the Navy on what you say and how you say it. An easy way to lose the public’s respect and confidence is by being careless in your handling of facts. When you send a story to a newspaper, the editor depends on you for accuracy in every fact.

The Navy news release heading that appears on every story you distribute means the information it contains is reliable and has been approved officially by the Navy. A mistake in a news story implies that the Navy is careless and undependable. Datelines tell when and where the story is written and should appear on all stories written for release. In the text of the story, when and where may refer to the dateline.

Attribution relates to accuracy. It means that you name the person who makes any statement that may be challenged. Good quotations liven a story, give it color, and aid in development of coherence. Attribution also ensures that the reader does not get the impression the statement is the writer's personal opinion. However, attribution should never be used in a story merely to flatter a person by publicizing his or her name.

BREVITY

The question is often asked, "Should I be brief in my writing or complete?" By all means, be brief, but not at the expense of completeness. The key is to boil down your writing and eliminate garbage. A compact piece of writing is frequently much stronger than a lengthy story. An example is Lincoln's Gettysburg Address. This speech has outlived a flock of long harangues by later statesmen. One of the reasons for its survival is its brevity.

CLARITY

Nothing is more discouraging than reading an article and then realizing that you do not know what you read. A similar frustration arises when you are trying to follow directions on assembling a toy, particularly when the instructions read, "... even a 5-year-old can assemble this toy," and you cannot do it, because the directions read as if they were written in a foreign language. Assume that if there is any chance of misunderstanding, readers will misunderstand. Reread what you have written looking for points that could lead to readers' misunderstanding.

COHERENCE

An article that skips illogically from topic to topic and back again in a jumbled, befuddled manner lacks coherence. Coherence means sticking together, and that is what stories and articles should do. Facts should follow facts in some kind of reasonable order. It may be logical order, chronological order, place order or order of importance, depending on the subject, but order of one kind or another is vital. Outlining will often help.

EMPHASIS

Make sure your writing emphasizes what you want it to. You assure this in newswriting by putting the most important fact first (the lead, discussed later).

Other types of arrangements for emphasis are used in feature stories or in editorials and will be presented later in this chapter.

OBJECTIVITY

To report news accurately, you must keep yourself detached from the happenings and present an impersonal, unbiased, unprejudiced story. This is why you never see a good reporter at an accident running around saying, "Isn't this horrible? I feel so sorry for the family. Why, just the other day I was talking to ol' Jed, and now he is dead." These may very well be your feelings, but you must attempt to keep aloof to give an objective report. It is not your job to influence people directly, but rather to tell them what is going on. You direct their thinking only to the limited extent that you make them think for themselves by an unbiased presentation of the facts.

UNITY

A news story should deal with one basic topic. There may be many facts and ins and outs to the story, but it is still one story. If you set out to write a story on the services and activities available at the enlisted club, and end up with a biography of the club manager, the story lacks unity. The simple solution frequently is to write two stories, rather than trying to combine a mass amount of information into one.

THE LANGUAGE OF NEWSWRITING

Written language is made up of three elements—**words, sentences and paragraphs**. It is the way these elements are handled that makes the difference between literary and news English. Briefly, let us look at these elements separately.

Words

Words are your basic tools. Like any skilled technician, you should be able to select the best tools to do the best job. This means you should use words that say exactly what you mean so others can understand them.

Every word used in a news story should add to the picture you are building in the minds of your readers. If

you use an unnecessary, vague, or unfamiliar word, this picture becomes blurred. If it becomes too blurred, it may give the reader a distorted picture of the facts. This is a form of inaccuracy that is just as bad as putting the wrong facts down on paper.

It is an axiom of newswriting that words that do not work for you, work against you. Here are a few tips on making words work for you.

AVOID GOBBLEDYGOOK.—Gobbledygook is confusing writing, often marked by pseudotechnical language that readers cannot understand. In writing a technical story, do not parrot the words some technical-minded researcher pours out. **Simplify.** Ask, “What does this mean in everyday English?” Few people, for example, know what “arteriosclerosis” means. But when you say “hardening of the arteries,” they immediately understand.

AVOID WORDINESS.—Many inexperienced writers put unnecessary words into their news copy. Call a spade a spade, not “a long-handled agricultural implement utilized for the purpose of dislodging the earth’s crust.”

Short, common words are easy to understand when, in many cases, long words are not. If you must use a longer word, make sure you are using it to convey a special meaning, not just for the sake of using a big word. Why use **contribute or provided with** if **give** means the same thing? This also applies to **veracity** for **truth**, **monumental** for **big**, **apprehension** for **fear**, **canine** for **dog** and countless others. Practically every part of speech contains long words that may be replaced by shorter and more exact ones. The same principle applies to phrases. Why say “afforded an opportunity” when “allowed” is more exact, or why use “due to the fact that” instead of “because”?

BE SPECIFIC.—Inexactness is just as bad as wordiness. Readers want to know specific facts. Consider the following example of this:

Vague: Thousands of fans were turned away that afternoon.

Specific: Three thousand fans were turned away before game time.

AVOID TRITE OR HACKNEYED EXPRESSIONS.—Trite or hackneyed expressions are the mark of either an amateur or a lazy writer. Some particularly bad examples include the following:

- Cheap as dirt

- Smart as a whip
- Fat as a pig
- Nipped in the bud
- Good as gold
- Blushing bride
- Grim reaper
- Wee hours
- Ripe old age
- Picture of health
- Crystal clear
- Quick as lightning
- Bouncing baby boy/girl

USE STRONG, ACTIVE VERBS.—Whenever possible, use active voice and the simple past tense. The use of these injects life, action and movement into your news stories. In using strong verbs, you will find some of the tendency for you to rely on adverbs to do the work is eliminated. In newswriting, adverbs often do nothing more than clutter writing. Consider the following example:

- **Weak** (passive voice): The visitors were warmly received by Captian Smith in his office.
- **Stronger** (active voice): Captian Smith greeted the visitors in his office.

AVOID MILITARY JARGON.—For those in the Navy, the phrase “general quarters” is clear enough. Yet for others, the phrase may mean nothing; to some, it may seem to mean the area where the general is housed. When you assume that all your readers know general quarters means the command to man battle stations for crew members aboard ship, you make a false assumption. You do not impress your readers by using words and phrases they do not understand; you only irritate them.

For example, an unidentified Navy official issued a statement explaining that the purpose of an overtime policy was “... to accommodate needs for overtime which are identified as a result of the initiation of the procedures contained herein during the period of time necessary to institute alternative procedures to meet the identified need.”

In some situations, it is appropriate to use common military phrases, such as “fleet training exercise,” “ship’s galley,” and “weapons system.”

WATCH SPELLING AND GRAMMAR.—A JO, or a person interested in becoming a Navy Journalist, should have better than average spelling ability. This person should also have a good command of the English language as far as correct grammar is concerned. Therefore, no extensive lesson is given in this area of study, although some basics are presented in chapter 6.

One goal of every good writer is not to learn to spell perfectly, but to learn to spell well enough so that a mistake can be spotted when words are put on paper. When in doubt, use the dictionary. Dictionaries are standard stock items in the Navy, and every public affairs office should have one. (For style, usage and spelling questions not covered in *The Associated Press Stylebook and Libel Manual*, use *Webster's New World Dictionary of the American Language, Third College Edition*.) Additionally, keep in mind that virtually all word processing software packages contain a spell check feature that you should use at every opportunity.

USE A STYLEBOOK.—In newswriting, the word **style** refers to the spelling, punctuation, capitalization, abbreviation and similar mechanical aspects of grammar used in preparing copy (a term used to describe all news manuscripts). Most newspapers and other periodicals have their own style sheets or local interpretations of style rules. The important thing for you to remember about style is **consistency**.

The recommended guide for preparing military news is *The Associated Press Stylebook and Libel Manual*. However, any locally prepared style guide or style sheet is fine as long as it is internally consistent and is suitable for your purpose. For further information on stylebooks, consult chapter 7 ("Newspaper Staff Supervision") of the *JO 1&C* NRTC.

Sentences

The second element of language is the sentence. The simple declarative sentence that consists of subject and verb, or subject, verb and object is the most common form in normal, informal conversation. For this reason, it is the best sentence structure for most newswriting. Notice how the following sentence becomes more readable and understandable when it is rewritten in two simple sentences:

Sentence: Following his graduation from the U.S. Naval Academy in 1948, Brown was assigned to the destroyer USS *Roulston*, where

he served his first tour of sea duty for 3 years as assistant communications officer and junior watch officer.

Rewrite: Brown graduated from the U.S. Naval Academy in 1948. He spent his first tour of sea duty aboard the destroyer USS *Roulston* as assistant communications officer and junior watch officer.

Simplifying sentences is not difficult, but it does take a little practice. In time, you can learn to use just the right number of words to achieve maximum clarity without destroying smoothness.

There are no absolute rules, but a fair guide is to try to keep sentences to 30 words or less and to shoot for 17 to 20. Vary the length of your sentences. For example, you might use a four-word sentence, then a 15-word sentence, and then an eight-word sentence, followed by a 30-word sentence. This keeps your writing from becoming singsong.

DO NOT CLUTTER.—Never crowd too many details into one sentence. Although a compound or complex sentence may contain more than one thought, you should, for the most part, stick to sentences that express one thought clearly and concisely. Otherwise, the reader is apt to get lost in a mass of clauses and details.

DO NOT REPEAT.—If you say in the lead of your story that 61 people were killed in a training accident, do not mention later in the story that 61 were killed. If the readers forget a fact, they can look back. Newspaper space is valuable; do not waste it with redundancy. Refrain from beginning a sentence with the same word as the last word in the previous sentence and avoid beginning consecutive sentences alike, unless you do it deliberately for emphasis.

Paragraphs

The most general guideline for writing paragraphs is that they should be kept reasonably short. When you use short paragraphs, you give the reader facts and ideas in smaller packages that are easier to handle. The mind can grasp a small unit of thought more easily than a large unit. Also, most news copy is set in narrow columns with only three to five words per line. This makes paragraphs of normal literary length appear as extremely long, unrelieved gray blocks of body type (more detail on typography, the appearance and arrangement of printed matter is contained in chapter 8). These large gray blocks of type are monotonous to the reader's eye and difficult to read.

Paragraphs should be less than 60 words. Two or three sentences per paragraph are just about right, but it is perfectly acceptable to have a one-sentence paragraph, or even a one-word paragraph, if it expresses a complete thought.

Yet, a succession of very short paragraphs may give a choppy effect to the writing. For best effect, alternate paragraphs of short and medium length. Never begin succeeding paragraphs with the same words or phrases. This, too, can cause a monotonous effect that will soon discourage the reader.

THE STRAIGHT NEWS STORY

LEARNING OBJECTIVE: *Outline the various parts of the straight news story.*

The major difference in style between newswriting English and literary English was discussed earlier in this chapter. There is also a big difference in structure between the literary piece and a newspaper story.

Journalism and architecture have more in common than what is evident at first glance. While the designing and planning of a building is far more complicated than the construction of news story, both are the same in principle. In each case, space is a prime element.

An architect uses bricks, cement and other materials; a newswriter uses words as his bricks and cement. If the building lacks design and careful construction, it will collapse; if the news story is not carefully planned, it will only serve to confuse the reader and discredit the publication in which it appears.

Before you can present the facts, you first must understand them, appraise them correctly and organize them in an orderly and easily understood manner. This process of organization and selection begins when you set out on an assignment. You rarely will be able to get your facts in the order in which they will appear in the final story. The process of legible note taking provides the raw material for you to construct the story, and certain proved guidelines serve as the blueprint for building the final product.

In fiction, a short story or novel is normally constructed in chronological order. This means the author starts from the beginning, sets the time and place, describes the scene, introduces his characters, then slowly weaves the threads of his plots and subplots until a climax is reached, usually near the end

of the story. The writer deliberately holds back the climax to build suspense and to make sure the reader reads the entire story.

Most news stories, however, are constructed in just the opposite fashion. **The climax is presented first.** This method packs the most important facts together with the barest necessary explanatory material into the first paragraph (the summary lead), then moves into the detailed portion of the story (the body) by covering the facts in diminishing order of importance. This form of newswriting is commonly known as the **inverted pyramid** style because when it is diagrammed, it appears as an upside-down pyramid (fig. 2-2).

ADVANTAGES OF THE INVERTED PYRAMID STYLE

The inverted pyramid style offers several distinct advantages in newswriting, which are discussed in the following text.

Presents Pertinent Facts First

Most readers have neither the time nor the desire to read every word of every story in a newspaper. By using the summary lead, the JO focuses the reader's attention on the news, arouses the reader's interest and allows the reader to swiftly skim important facts. In other words, spill the whole story in the first paragraph.

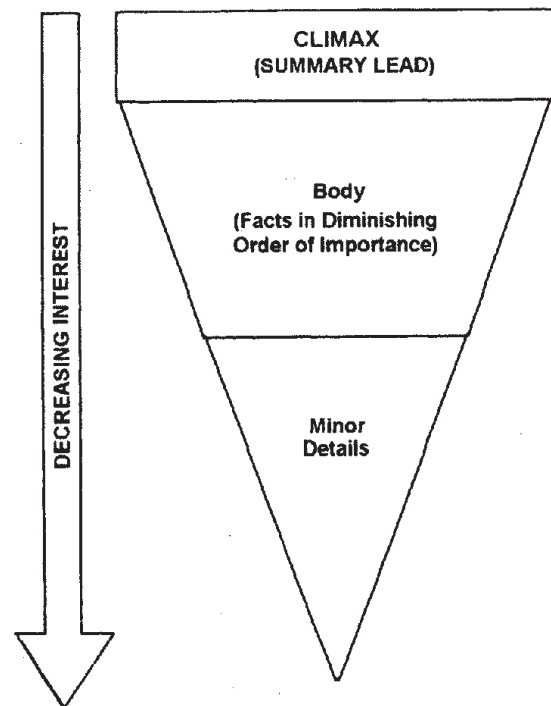


Figure 2-2.—Inverted pyramid news story structure.

The reader can decide whether to continue reading the details or to go on to something else. But even if the reader stops there, the inverted pyramid form of writing has provided the essential facts. The primary objective of a news story then, is not to withhold information, but to present the facts with rapid, simple directness.

Facilitates Page Layout

The inverted pyramid method of story construction is a valuable tool to the makeup person who is confronted with an eight-inch story and only six inches of column space. If the story has been written in inverted pyramid form, it becomes a simple matter of cutting lines of type from the bottom of the story until it fits the available space or “jumping” (continuing) the story on another page—all without damage to the important facts that appear at the top.

Facilitates Headline Writing

Headlines for news stories should tell the main facts in the briefest form. If a story is written in the proper inverted pyramid style, the copyreader (who writes the headline) can find these facts in the first paragraph. The copyreader will not have to search the entire story for headline material.

THE LEAD

The opening paragraph of a news story is referred to as the **lead** (pronounced “leed”).

The lead is the first and most important paragraph of any news story. It attracts the reader and states the important facts first.

A key fundamental fact taught in classrooms the first time newswriting is mentioned, and repeated at the college level, is that in writing a lead for a straight news story, the writer must answer six basic questions about the event. Known as the five Ws and H questions, they are as follows: **who**, **what**, **when**, **where**, **why** and **how**.

It is not necessary that a writer answer all of these questions in the lead sentence. The summary lead does, however, attempt to answer several of the more important ones. To insist upon answering the five Ws and H questions as a rigid format will lead to lengthy, cumbersome leads that may be misleading or hard to read. The lead contains the news peg and is the most important part of the story. It can either make or break any news story.

Length

Try not to use more than 30 words in the lead, but do not make this an inviolable rule. Some leads, even when well written, may require 35 or even 40 words. On the other hand, many—or perhaps most—require fewer than 30 words to accomplish their objective.

A good lead may be a single word, a single sentence, two sentences, a paragraph or even two paragraphs. Whatever form it takes, it must answer the questions a reader would normally ask such as the following: “**What** has happened or is about to happen?” “**Who** is involved?” “**When** and **where** did it happen?” And, sometimes, “**how** and **why** did it happen?” An effective lead directs the reader’s interest into the body of the story.

The summary news lead is the one most often used at the beginning of a straight news story. The most direct approach (and best method for an inexperienced writer to use in constructing a summary lead) is known simply as featuring the most important element. Featuring the most important element means exactly what it says. The writer determines which of the five W’s and H is most important to the story and places it at the outset of the lead. Each of the example leads in table 2-3 features a different W or H as the most important element.

The leads in the figure are given to show how any element may be featured. The “why” element (to prevent a forest fire in this case) is clearly understood and can be dropped out of most leads to avoid redundancy and extra wording. Other summary lead examples are presented in table 2-4 that answers all or most of the necessary five W’s or H. Those omitted are either implied or unnecessary.

The five summary lead examples in table 2-4 are all “who” leads. In each example, who is featured at the beginning of the lead, thus giving it more prominence than the other W’s or H. More examples of summary leads are illustrated in table 2-5, with a different W, or H, featured at the beginning of each.

Feature and Novelty Leads

Although the summary lead is the simplest, safest and strongest of all leads used in straight newswriting, most media like to add a little variety when leading into a story. Feature leads are a vital part of newspaper writing. The feature lead permits you to take a mundane straight news piece and transform it into a

Table 2-3.—Example Lead Variations

Element	Example
Who	A smoke jumper extinguished a blaze and prevented a forest fire in Gallatin National Forest, Wyo., yesterday by diverting a mountain waterfall over a burning tree. Note: This is an impersonal “who” lead. The “who” can be identified in general terms when the individual or group is not well known by name, such as “three Navy admirals,” “a former secretary of the Navy,” or “three Navy seamen.” When the impersonal “who” lead is used, the actual name or names should be mentioned further down in the story.
What	A burning tree didn’t become a forest fire in Gallatin National Forest, Wyo., yesterday because a smoke jumper diverted a small mountain waterfall.
When	Yesterday a smoke jumper prevented a forest fire in Gallatin National Forest, Wyo., when he diverted a small mountain waterfall over a blazing tree.
Where	In Gallatin National Forest, Wyo., a smoke jumper yesterday prevented a forest fire by diverting a small mountain waterfall over a burning tree.
Why	To prevent a forest fire in Gallatin National Forest, Wyo., a smoke jumper yesterday diverted a small mountain waterfall over a blazing tree.
How	By diverting a small mountain waterfall over a blazing tree in Gallatin National Forest, Wyo., yesterday, a smoke jumper prevented a forest fire.

story that captures the interest and empathy of the readers.

Novelty leads differ from summary leads in that they make no attempt to answer all of the five W’s and the H. As the name implies, novelty leads are **novel**. They use different writing approaches to present different news situations to attract the reader’s attention and arouse curiosity.

Feature leads must fit the mood of the story. If you intend to set a particular mood or point of view in a story, your intent or tone should be set at the beginning of the story.

If the situation presents itself in which a novelty lead would be appropriate, by all means use it. Do not get into the habit, however, of trying to write a novelty lead for every story, because they are not always adaptable to every situation. It is easy for the unusual to become commonplace if it is seen or heard too often. Novelty leads lose their effect if they are overused.

Table 2-6 presents various examples of novelty leads most commonly used in news writing. Although the eight types described are the ones most commonly used, it is a mistake for you to assume that all news leads may be categorized by type or classification.

Their names are not important anyway. To the JO, the ability to write is more important than the ability to categorize.

Identity and Authority

There are two other considerations to keep in mind when you are preparing news leads — **identity** and **authority**. In most local stories, especially hometowners, it is necessary to identify persons fully in the lead.

For example, suppose you prepared a hometown story on a Sailor who formerly resided in Louisville, KY. Not being very experienced, you turn in a lead like the following:

“Navy Seaman Walter T. Door reported for duty Feb. 16 aboard the guided-missile cruiser USS *Hinkle*, now operating in Western Pacific waters.”

Although you have answered all the W’s and the H, except why and how (in this case unnecessary), your lead is still incomplete. The story is meaningless until you identify Door as being from Louisville. Even then, an editor of a Louisville newspaper will want a local angle on the Sailor. The only angle available to you is the name of Door’s parents and their home address.

Table 2-4.—Example summary leads by story category

Story Category	Summary Lead
Hometownner	<p>WHO AT SEA ABOARD USS <i>KITTY HAWK</i> —Seaman A.B. Jones, son of Mr. and Mrs. A.C. Jones of Route 1, Fayetteville, Tenn.</p> <p>WHAT reported for duty</p> <p>WHEN July 25</p> <p>WHERE aboard the aircraft carrier USS <i>Kitty Hawk</i>.</p>
Award Presentation	<p>WHO AGANA, GUAM — A Navy petty officer</p> <p>WHAT was awarded the Navy Marine Corps Achievement Medal</p> <p>WHERE here</p> <p>WHEN today</p> <p>WHY for saving the life of a 5 year-old girl</p> <p>HOW by rescuing her from the shark-infested waters of Telefofo Bay.</p>
Accident Story	<p>WHO NORFOLK, Va., Jan 7 — A Navy seaman</p> <p>WHAT was killed</p> <p>WHEN today</p> <p>WHY when his car collided with a bus</p> <p>WHERE near Wards Corner on Granby Street.</p>
Change of Command Story	<p>WHO SAN DIEGO – Captian Able A. Boate, USN,</p> <p>WHAT took command of the submarine tender USS <i>McKee</i> (AS 41)</p> <p>WHEN today</p> <p>WHERE in shipboard ceremonies at North Island.</p>
Convention Story	<p>WHO NAS ALAMEDA, Ca. — Forty-five members of the famed “Doolittle Raiders”</p> <p>WHERE were present here</p> <p>WHEN this week</p> <p>WHAT for a three-day program which commemorated the 50th anniversary of the first American bombing raid on Japan.</p>

You must, therefore, identify Door more fully in your lead. It is unlikely that many of the newspaper's readers would know him merely by name, and a city the size of Louisville might have more than one Walter T. Door. To localize the story and to avoid confusion or misinterpretation, you would include more

identification. The lead should be written in the following way:

“A Kentucky native, Seaman Walter T. Door, son of Mr. and Mrs. Mack Door of 70 N. Williams St., Louisville, reported for duty Feb. 16 aboard the

Table 2-5—Sample summary leads featuring the most important elements

Dominant Fact	Lead Example
WHEN: Sometimes the time element plays an important part in the story.	With only five seconds left to play, Navy scored the winning touchdown to defeat Army, 36-30 in the annual football classic this afternoon in Philadelphia.
WHERE: If the setting of your story is unusual or especially important, play it up at the beginning.	Three hundred miles above the earth's atmosphere, two Navy astronauts are orbiting the earth in a spacecraft at speeds more than 50 thousand mph.
WHAT: When a thing or action in a story is noteworthy and overshadows the other facts, it, too, should be featured in the beginning.	Bowling two consecutive 300 games was the unprecedented accomplishment of Dick Hitchens, USN, a crew member of the submarine tender USS <i>Milano</i> .
WHY: The motive, cause or reason may also be an important feature of the lead.	Because he was raised in an orphanage himself, a veteran Navy combat pilot is attempting to adopt two Italian children whose parents were killed in an automobile accident.
HOW: The circumstances or the manner in which something is accomplished in a news story is often important.	By hurling a 20mm shell magazine from the destroyer USS <i>Homeboy</i> yesterday, a Navy gunner's mate prevented severe damage to his ship and possibly saved the lives of several crewmembers.

guided-missile cruiser USS *Hinkle*, a unit of the Navy's Seventh Fleet in the Pacific."

As you can see, complete identification of a person in the lead sometimes makes that lead long and cumbersome. Yet, it cannot be avoided in hometown stories where identity is more important than the action, especially if the action is weak, as it is in the preceding example.

In many instances, however, full identification is unnecessary or impractical for inclusion in the lead. In general, complete lead identification is unnecessary and should be avoided when one or more of the following points is true:

- The action overshadows the person or persons involved.
- There are too many persons involved to identify all of them by name and rate.
- The identification does not mean much to the readers in a particular area.
- The "who" is a prominent, widely known person.

When an individual is not fully identified in the lead, that person must be identified by name, rank or rating, title, duty station and possibly hometown address elsewhere in the story. This identification is also important for places and things in a story. If you use the name of an unfamiliar town or city in a story, at least identify it by the state in which it is located. If you use the name of a ship or an airplane, give its type or classification.

Impersonal identification may be used in the lead when the news subject consists of several persons unfamiliar to the reader, such as groups or organizations. Nonspecific what's, where's, and when's may also be used depending on the news circumstances.

Authority is the source from which quotes and information originate in a story. Like identity, it should be used in the lead only when necessary. Never use authority in a story when the source of information is clearly implied.

The following is an example of a lead in which authority is necessary:

Longer tours, fewer, shorter and less expensive moves can all be expected by Navy

Table 2-6.—Sample Novelty Leads

Type of Novelty Lead	Example
<p>CONTRAST: The contrast lead compares two opposite extremes, generally to dramatize a story. The comparisons most frequently used are tragedy with comedy, age with youth, the past with the present and the beautiful with the ugly.</p>	<p>In 1914, the United States entered the First World War with a Navy of 4,376 officers, 69,680 men, 54 airplanes, one airship, three balloons and one air station.</p> <p>Today, there are more than 500,000 active-duty officers and enlisted personnel, 475 ships and 8,260 aircraft in our Navy.</p>
<p>PICTURE: The picture lead draws a vivid word picture of the person or thing in the story. It allows the reader to see the person or thing as you saw it.</p>	<p>Thin and unshaven, his clothes drooping from his body like rags on a scarecrow, Lt Frank Brown, USN, today told naval authorities about his six-week ordeal in an open rubber boat in the South China Sea.</p>
<p>BACK GROUND: The background lead is similar to a picture lead, except for one important difference. It draws a vivid word picture of the news setting, surroundings or circumstances.</p>	<p>High seas, skies, strong winds and heavy overcast provided the setting for a dramatic mission of mercy in the North Atlantic on the first day of the new year.</p>
<p>PUNCH: The punch lead consists of a blunt, explosive statement designed to surprise or jolt the reader.</p>	<p>The president is dead. Friday the 13th is over, but the casualty list is still growing.</p>
<p>QUESTION: The question lead features a pertinent query that arouses the readers' curiosity and makes them want to read the body of the story for answers. Phrase this lead as a rhetorical question (a question that cannot be answered with a straight "yes" or "no").</p>	<p>How does pay in the Navy compare with civilian wages?</p> <p>Has the space age affected the role of the Navy?</p>
<p>QUOTATION: The quotation lead features a short, eye-catching quote or remark, usually set in quotation marks. A quote lead should be used only when it is so important or remarkable that it overshadows the other facts in the story.</p>	<p>"You really don't know what freedom is until you have had to escape from Communist captivity," says Bob Dengler, a former Navy lieutenant and an escapee from a Viet Cong prison camp.</p>
<p>DIRECT ADDRESS: The direct address lead is aimed directly at the readers and makes them collaborators with facts in the story. It usually employs the pronouns "you" and "your."</p>	<p>Your pay will increase by 10 percent next month. You can receive a college education at Navy expense if you qualify under a new program announced this week.</p>

people for the rest of this fiscal year, according to Vice Adm. Jack Frost, Chief of Naval Personnel.

Attributing this statement to the Chief of Naval Personnel gives it authority, because the admiral is in a position to know and speak about such matters.

Contrary to popular belief, people do not believe “everything” they read in newspapers. Many of them, as a matter of fact, challenge any statement that conflicts with their preconceived opinions. Using authority in a story helps you overcome this natural skepticism. Sometimes people will believe certain facts more readily if they know or respect the person to whom they are attributed.

What follows are two simple rules governing the use of authority in a news story:

- Use it when it appears that the reader may challenge a statement.
- Use it when the name of the authority lends support or emphasis to the facts.

In the Navy, the authority for many statements is frequently implied. If a story obviously deals with Navy ships, Navy personnel or Navy equipment, it is often unnecessary to use “The Navy announced today” or similar expressions. If a newspaper editor feels a statement must be attributed to the Navy, the editor will insert the authoritative source. It is a bad practice for this phrase to be inserted in every story merely for the sake of using it or just to get the word “Navy” into the story. It is also particularly bad for every news release to be attributed to the captain or admiral by name, especially when the subject of the story is remote from his immediate interest.

For a wrap-up on preparing the lead, you should keep the following four objectives in mind:

- Present a summary of the story
- Identify persons and places involved
- Stress the news peg
- Stimulate the reader to continue reading the story

THE BRIDGE

Assuming you have written the lead for a story, what do you do next? In some stories, you will find the transition from the lead to the body of the story is a bit awkward. To smooth this transition, you use a writing device known as a **bridge**.

A bridge is a connecting sentence or paragraph between the lead and the body of the story. Although it is not always required, it can serve several useful purposes. For instance, in the bridge, you can place facts that are too detailed for the lead and too important

to be placed lower in the story. Note the following example:

Novelty Lead: For sale: One guided missile destroyer.

Bridge: The Navy is thinking about inserting this advertisement in the nation’s newspapers. The guided missile destroyer USS *Benjamin Stoddert*, which is no longer fit for active service, will be scrapped next month.

Note that the writer used a freak lead to introduce his story. The entire lead consists of only six words, and the effect is good. The lead obviously would not be as effective if all the facts were presented in the first paragraph.

A bridge also can bring the reader up to date on past and present events related to the story by the use of **tie-backs** and **tie-ins**.

Tie-Back

A tie-back is a newswriting device that allows you to refresh the reader’s memory about past events related to the story being written. It frequently is used in follow-up stories (see chapter 5). Consider the example that follows:

Lead: The U.S. Coast Guard icebreaker *Northwind*, with the help of U.S. icebreakers *Glacier*, *Staten Island* and the Canadian icebreaker *MacDonald* is free from the arctic ice pack that threatened to maroon the ship until next summer.

Bridge (used as a tie-back): *Northwind* was making the trip back from an attempt to resupply the research station ice-island T-3 when it began experiencing difficulties maneuvering through the polar ice. The ice was so severe the ship lost a blade on its starboard propeller and cracked the ship’s hull.

Body: The relief ships punched their way through. ...

Tie-In

A tie-in is similar to a tie-back, except it provides information concerning **other** events that are currently taking place and that supplement the story being written. While the tie-back deals with the past, the

tie-in deals with present events. Consider the following example:

Lead: Navy doctors are investigating an outbreak of 17 cases of scarlet fever aboard the destroyer USS *Balast*, a Norfolk-based ship operating in the Mediterranean.

Bridge (used as a tie-in): Meanwhile, measures are being taken to prevent further outbreaks of the disease on other Navy ships. Navy personnel have been warned to report to shipboard sick bays immediately if they find themselves suffering from fever, sore throat or rashes on the neck and upper chest.

Body: The first case of scarlet fever was reported aboard the *Balast* April 27, about three weeks after the ship left Norfolk. Doctors said....

The tie-in can explain or elaborate on one or more of the summary facts, usually why or how. In writing a summary lead, you may find that it becomes long and unwieldy if you try to include a detailed explanation of why and how. But if the explanation is important enough, instead of withholding it until the body of the story, present it in the bridge as in the example that follows:

Summary Lead: The Navy will begin replacing its time-tested manila lines July 1 with a synthetic product of modern progress—nylon rope.

Bridge (explaining “why”): After months of study and experimentation, the Ship’s Systems Command has found that nylon rope is superior to manila line in strength, durability and elasticity.

If you have to include the information from these two sentences in your lead, it would become unnecessarily long and cumbersome. By explaining the why in the bridge, you present the information more clearly and make the story more readable. It can provide continuity and a smooth transition from the lead to the body of the story by bringing in one or more secondary, but significant, facts. Note the following example:

Lead: From now on, all of the accounting for the Navy’s vast network of ship’s stores will go untouched by human hands.

Bridge: CompuNav, an electronic data processing system, will do the job—and do it cheaper too.

Body: The CompuNav file computer was unveiled today. ...

The bridge in this story is strictly a transitional device that helps close the gap between the lead and the body of the story. Reread these sentences again. Note how awkward the story would be if the bridge were omitted.

THE BODY

For you to produce a smooth, final story, the lead and body must coincide. The body is the detailed portion of a news story that develops and explains the facts outlined in the lead (and in the bridge, if there is a bridge). Here again, the importance of a neatly tailored lead cannot be overemphasized. A cumbersome lead is most often followed by a cumbersome body. But when a lead has done its job, it will usually provide an outline for the orderly organization of facts in the body of the story.

To some extent the organization of the body is dictated by the material itself—if it is a series of events, for instance. So the writer has to write an orderly, well-organized story and at the same time keep in mind the relative importance of various details.

Guided by the idea of news importance, the writer proceeds through the story by selecting the next most important incident, fact or detail, then the next important, and so on, until reaching the least important of all. At this point, the writer has reached the apex of the inverted pyramid with material of least value. The writer now knows that the makeup editor can slice one, two, or three paragraphs from the bottom of his story without depriving the reader of the story’s chief news elements. Table 2-7 shows a diagram of a straight news story structure.

A FINAL THOUGHT

For several years, there has been a trend among civilian newspapers toward greater informality in news presentation. This trend has become known as “talking a story onto paper.”

Several years ago, an observant editor noticed that a reporter would come to the city desk and describe a story he has covered. The story would sound attractive as he talked. Then the same writer would go to his desk and write the piece, pouring facts into the established newswriting mold. What had been interesting when he related it verbally, it then sounded like every other

Table 2-7.—Diagram of a Straight News Story

SUMMARY LEAD	EGLIN AFB, FLA (NNS)—A Navy officer who had never before taken control of an aircraft brought an Air Force spotter plane in for a rough but-successful-landing recently.
FACT 1 (bridge)	The incident came about after the pilot Navy Lt. Fred Johnson, 28, died of a heart attack during a routine training mission over the Gulf of Mexico.
FACT 2	LT John G. Smith, USN, of Aurora, Ill., walked away from the emergency landing only “slightly shaken up.” The incident occurred in an area 60 miles southwest of Eglin Air Force Base.
FACT 3	Smith took control of the single-engine plane and returned the aircraft to Eglin.
FACT 4	Presently assigned to Eglin as a Navy liaison officer, Smith reported to his present duty station last July.
FACT 5	A former enlisted man, the 39-year-old officer served as an aerial photographer for several years and his general familiarity with aircraft is credited with helping him land the plane.

story that had appeared before—only the names and places were changed.

Recognizing the value of the reporter’s conversational report of the story, the editor thereafter encouraged his writers to use a more conversational tone, coupled with simple language, in all of their copy.

The main purpose of any news story is to **communicate the facts**. To accomplish this communication, individuals must read the story. When an informal story presented in simple, everyday language can accomplish this purpose, use it without hesitation.

CHAPTER 3

WRITING THE FEATURE, SPEECH, SPORTS AND ACCIDENT STORIES

In chapter 2, the fundamental aspects of newswriting were covered. Once you master the basics of newswriting, then, and only then, are you ready to wrestle with the more complex news stories. This chapter will help you develop the skills and learn the knowledge necessary to write effective feature, speech, sports and accident stories.

THE FEATURE STORY

LEARNING OBJECTIVE: *Identify the characteristics and structure of a feature story and the techniques used in producing a personality feature.*

Writing straight news strengthens the writer's powers of observation and builds his skill in using the English language. It impresses on the writer the necessity for ruthless editing until the story is specific, clear and vital.

Conversely, feature writing is not an exact science. Much depends on the skill, imagination and creativeness of the writer.

What is a feature story? It has been called the story that "has to be told." It has also been called simply "human interest." Interest in human beings, and in events because they concern people in situations that might confront anyone else, is called human interest. When a shipboard explosion takes the lives of several crew members and prompts the gallant efforts of other crew members to prevent the loss of the entire crew, the human interest, or appeal, may be of a sympathetic nature. A man with a broken nose might also evoke a sympathetic response. However, if the injury occurred when he walked into a telephone pole while scrutinizing an attractive 1957 Chevrolet on the other side of the street, the appeal might be of a humorous nature.

Certain topics have human interest built in. And, although they may not possess any of the other elements of news value (timeliness, proximity, prominence or

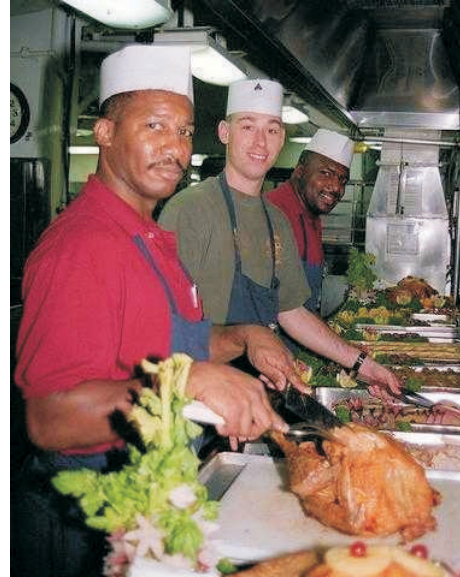


Figure 3-1. Feature story photo. U.S. Navy photo

consequence), they still have personal appeal (fig. 3-1). Human interest may fall into many categories, including those in the following list:

- Current topics
- The unusual and the extraordinary
- Mysteries and catastrophes
- Romance and sex
- Adventure and exploits
- Competitive contests
- Child, teenage and adult life
- Animal life
- Recreation and hobbies
- Business, professional and home activities
- Social welfare
- Success and happiness

In any case, a good human interest story is built around the premise that the reader can easily identify with the subject or event. It involves a fellow human being and a situation that could happen to, or involve, the reader.

Human interest stories not only entertain, but are often informative in that they contain all the elements of a news story. However, the human interest aspect of the story outweighs its value as a straight news story.

Major news events seem to tell themselves. The straight newswriter can set down all the facts, arrange them together with appropriate words and have an adequate news story. The feature, however, must be brought to public attention by the creative writer. As a Navy JO, your job is to recognize the human interest possibilities of stories and turn a drab yarn into a bright one without exaggeration or distortion.

CONTENT

The feature story is similar to basic news writing in that it has a news peg. What sets it far apart, however, is that it emphasizes something new, odd or unusual. Both of these attributes are covered in the following text (fig 3-2).

News Peg

The Cuban Missile Crisis of 1962 was an event with intense, hard news value. Confrontation between the two strongest world powers could have been the lead paragraph on the story of World War III. Events in this confrontation made the news wires sing for many weeks.

When the USS *Norfolk* intercepted a Russian ship removing missiles from Cuba, the New York Times News Service covered it in a lead that read as follows:

The captain of a Soviet freighter reluctantly stripped the tarpaulin covers from eight medium-range missiles on the deck of his

freighter Friday for photographing by a United States destroyer.

Using this news event as a peg, and realizing that he could not compete with news-service speed in making releases, the PAO aboard *Norfolk* released a feature with a different slant:

Much of the old-style drama and military dash of the international crisis is a thing of the past. The thrill of “Victory at Sea” is no longer as graphic in its modern context as that famous World War II documentary movie.

Today’s coverage of events that shape the lives of nations comes, often as not, from the centers of government and military command posts. For the chess game of world events is no longer played in the smoke of battle, but in planning rooms where statesmen, military personnel and civilians in government call the plays thousands of miles from the scene of the move. ...

New, Odd or Unusual

The event and object sources are rich in feature prospects. Here, the imagination and curiosity of the writer are put to the test. Most hobbies are quite commonplace, yet an ordinary hobby can provide good story material if there is an element of the **new**, the **odd** or the **unusual** connected with it.

In conjunction with hobbies and collections, museums supply fine material for stories. Here the ideas usually come from historical circumstances surrounding the objects of their development. Browse through a museum and ask yourself these questions: Why is this object on display? What significance does it have? What historical event is connected with it?

Stories concerning historical events must be especially well-written and interesting because people do not like to read about events presented in textbook style. However, they are interested in what one person or group did in a particular historical event.

These are a few common areas that produce ideas for articles. There are many others. The point is, the ideas are there and you must open your eyes to them.

REQUIRED FEATURE WRITING SKILLS

To become a successful feature story writer, you must be proficient in the following feature writing skills: grabbing the reader’s interest, being observant



Figure 3-2. Stand-alone feature photo.
(Photo by PH2 Erin A. Zocco)

and writing about people. These areas are examined in the following text.

Grabbing Reader Interest

To attain reader interest, features may depend on prominence such as that in an event like the Cuban Missile Crisis. The personality profile would also fit here. And, in this case, the relationship between the news elements of proximity and prominence should be considered. For example, a story about one of the space shuttle crew members would be of interest almost anywhere because of the prominence of the subject. How about the CO of Anderson Air Force Base, Guam? The proximity to Anderson AFB and surrounding communities might make the CO prominent enough to merit a personality sketch in the local Guamanian newspaper, but nowhere else, except perhaps, his hometown.

Consideration for the target readership, then, is important for the writer of feature articles. It soon becomes obvious that attempts to define a feature story fall short, probably because the range of material is as broad as the full range of human experience. Anything people make, do, enjoy or respond to serves as a peg on which to hang the feature story.

Feature stories stir emotions, stimulate, divert and entertain. These objectives could serve as a goal for the feature writer, but they do not tell what feature stories are. Certainly, the account of one nation's warship intercepting the missile-carrying freighter of another in international waters is capable of stirring emotions and stimulating readers of the world.

The story behind the story—the feature story—is the vehicle for unabashed revelation of the human interest element in any hard news event. The PAO's Cuban missile feature does this as it continues:

The Cuban Quarantine centers the eye of the world on the Caribbean, while the real events are charted far away in Washington and Moscow. The drama of confrontation is still very much set in scenes of ships patrolling the seas around Cuba. The lines of battle are drawn by ships every bit as powerful, many times as sophisticated, and just as serious as the battleship behemoths of former wars.

When the forces meet, as when the destroyer leader USS *Norfolk* (DL 1) detected the Russian merchantman *Leninsky Kosomol* steaming out of the south Cuban port of

Casilda through the receding clouds of a tropical rainstorm, the surface action begins with the flashing light of exchanging calls.

Events followed rapidly as the radio waves emanating from the two ships pulsed messages reporting contact and requesting instructions. Agreements between governments born at United Nations sessions began to be implemented on the high seas. ...

Being Observant

The successful and prolific feature writer develops a keen, inquisitive faculty for observation. A well-tended landscape is not just a pleasant view to the feature writer. The journalist wonders who keeps it trim and why, inquires into the benefits of conservation or erosion control and the alternatives—wildlife sanctuaries or outdoor living. And chances are, the writer can write the answers received into an interesting feature article.

The power of observation, the habit of accepting nothing at face value, of digging into unanswered questions below the surface of the event, are invaluable to the feature writer.

A prime source of ideas is the daily newspaper. News stories that appear in the newspapers record national, state and local events as they happen. They usually do not give background material or cover all aspects of a story. Yet every day, news stories appear that open the way for a flood of feature articles.

The ability to take a bare fact from the newspaper and give it meaning can produce a good article, but here, as in wire service copy, the feature must reflect **local** interest. For example, a news story mentions a change in income tax regulations; the feature writer shows how this change will affect the reader. Thus the writer localizes the news story and gives it expanded meaning.

Military news, such as changes in regulations, pay, mission or anything affecting military readers, could also interest general readers. The alert and skillful writer can turn these bare facts, and sometimes dull items, into meaningful articles.

Writing About People

The typical military editor of a commercial daily often feels "handouts" (standard news releases) are hounding him to death. They choke his style. They keep him tied to a computer doing rewrites. He would

rather be working on a feature angle or out working up an enterprising story. He greets the daily handout pile as the worst part of his job. Why? Not because handouts do not contain legitimate news. Most of them do—buried somewhere behind, in or among fancy, \$10 words and reams of promotions.

Reporters say the typical military handout fails most often by the absence of names and addresses of those persons around which the story, event or action is built. They say infractions of several other basic rules of journalism also frequently draw the handout to the wastepaper basket, rather than to the printed page.

However complex and amazing a ship may be, a story that is more iron rather than flesh-and-blood often sails right into the wastebasket along with the larger part of the handouts of the day.

What most media want in the way of a Navy feature is a particular individual—Seaman John B. Boatwright, 20, of 2810 Prairie St., Landlock City—performing his duties to make the vessel an efficient ship. Names, properly spelled and accompanied by ages and addresses, keep wire services and newspapers in business. Details of ships or stations are interesting to people back home, especially if those facts relate to sons, daughters, husbands or hometown acquaintances. A sparkling story about a search and rescue, for example, is a natural, both from hard news and feature standpoints—if those indispensable names, ages and addresses are included.

STRUCTURE

The basic structure of the feature story is divided into three parts: the lead, the body and the conclusion.

Lead

Any standard news or magazine-style lead may be used to begin a feature story. It should, however, always be written in a manner appropriate to the subject. A light, humorous lead, for example, has no place at the beginning of a serious article designed to provoke deep and serious thought in the reader. On the other hand, a ponderous lead is no way to begin a light or humorous piece.

A simple summary lead was used to begin the following story:

A six-month renovating job on a dilapidated 70-year-old house won praise from a local real

estate board for a U.S. Navy captain stationed here.

The preceding lead is adequate as a starter, but another writer used a question lead. The question lead is often used for good effect in feature story writing. Leads like these, when well-phrased, send the reader along into the body in quest of an answer to such a “way-out” question:

Ever hear of a “hurevac”?

It is a hurricane hideout. The 8,000 acres that constitute the Naval Auxiliary Air Station Meridian, Miss., are a rolling woodland, and it would seem they would be unaffected by the hurricane season hundreds of miles away from Florida. Such, however, is not the case.

Note that in feature writing, the lead often consists of more than a single paragraph. Sometimes the lead runs for several paragraphs. Take the following feature lead for example:

Fifteen months ago, a young Greek Cypriot landed in New York city and took a job in a Brooklyn factory devoted to the manufacture of electrical appliances.

When he arrived, he could speak only a few words of English and that with thick accent.

Today that young man is Fireman Andreas Kalivakis, serving as an electrician aboard a U.S. Navy warship. His accent is fast disappearing; his English vocabulary is excellent and he is the owner of a new certificate indicating he has passed all the tests required to prove he has the equivalent of a U.S. high school diploma.

That lead stands the test for feature story leads; it grasps the reader’s interest immediately and makes the reader want to read more. A Marine Corps release excited the curiosity of the casual reader with the following lead, then added a startling transition that prepared the reader to take pleasure in completing the story:

Okinawa is far from the green hills of the United States, but an old-fashioned American-style still is in daily operation there alongside the radio section of Headquarters Company, Ninth Marine Regiment, Third Marine Division.

The still, however, doesn't produce alcoholic beverages—it produces pure, distilled water.

Often a lazy journalist—relying on the belief that Sailors are naturally interested in articles concerning their food, pay and equipment—will hang a dull lead on stories about those subjects. However, professional writers will give their best efforts to those stories, because they know these stories will be read by the greatest number of people and be of service to them.

A dramatic example of wide interest to food comes from the guided-missile destroyer USS *Semmes*. Annual competition for the Ney Award for the best mess afloat sparked an enterprising skipper to support wider dissemination of his ship's cooking secrets. *Semmes* published a cookbook of Navy recipes, cut to manageable portions, and the whole country took note.

Food editors featured the story in papers in New York, Chicago, Philadelphia, Pittsburgh, Indianapolis, St. Louis and Boston, as well as Charleston, SC., Dayton, Ohio, Evansville, Ind. and Norfolk and Portsmouth, Va. Also, numerous network and local radio/television stations made wide use of the feature material.

Veronica Volpe of the Pittsburgh *Press* wrote the following example:

For those unaware of the military usage of the word, the phrase 'the best small mess in the Navy' might have questionable connotation, least of all merit. Not so to the crew members of the USS *Semmes* just returned from a Mediterranean tour and now undergoing overhaul in Norfolk, Va.

The military usage of "mess" relates to its original meaning—that of a group of persons who eat their meals together, as do the men of a ship's company or an Army group. ...

An important fact to keep in mind when writing about Navy equipment and weapons is that the reader can soon lose interest in a dull story about a machine or weapon. What the reader is interested in is the men and women in uniform who will handle, install, maintain and operate those inanimate—and intrinsically dull—pieces of hardware.

The effect of the machine on the person, and the person on the machine, must be presented in a way that emphasizes people, and the writer must make those people into rounded characters who become real in the reader's mind. In other words, the story must have human interest.

The writer of the following feature lead did just that by beginning a story in the following way:

The machine, a metal monstrosity, squatted in the center of the metal deck, circled by a knot of Navy men: a bemused young officer, three puzzled Sailors and a knowing old chief.

"I know what it's supposed to do," the first Sailor said, "and I know where we're supposed to bolt it down, but who's ever going to operate a Rube Goldberg puzzle like that?"

"You are, buster," the old chief said, "and ...

Body

When you write the body of a feature story, it is important for you to avoid monotony. You do this by varying sentence length, however, long sentences must be clear and easy to understand.

Note the varied sentence length in the following feature from the Indianapolis *News*:

The first—and last—issues of eight newspapers were published at Ft. Benjamin Harrison the other day.

But their brief life span had little relationship to the energy and interest devoted to their publication. The papers were the last journalism exercises for 70 servicemen and women, graduating with a newspaper in one hand, and a diploma from the Defense Information School at Ft. Harrison in the other.

From all the armed forces, staffers in the "quill and scroll" exercise got a glimpse into their military future. These military journalists will go to assignments throughout the world. Many will find jobs on more permanent newspaper staffs, using what they learned at Ft. Harrison.

Nine weeks ago, this basic military journalist class began. Since then students have spent 209 classroom hours in the Basic Journalism Department. ...

Another point to note is the use of quoted material to carry the story along. Skillfully conducted interviews with articulate experts will provide the writer with quotations. Such quotations, interspersed with expository material, help move a story along and maintain a lively spark throughout. Explanations and readily comprehensible revelations from authorities in a given field impart an air of authenticity to writing,

particularly in stories about technical subjects, such as rocketry, instruments, engine improvements, jet engine overhaul and nuclear propulsion.

However he or she chooses to explain technical subjects, the writer should always remember the need to translate technical terms into lay language for the sake of the general audience. When this is not possible, the writer must define the technical terms.

When you write a feature on a technical subject, use the following points to help you plan and organize the body of your material:

- Make paragraph beginnings forceful to impel the reader through the story.
- Use technical terms sparingly, and include informal definitions as you go along.
- Dress up difficult or dull passages with human interest items.
- Quote authorities as necessary to make the reader feel the facts are authentic.
- Simplify facts by the use of analogy.
- Break down statistical material into figures the reader can comprehend.
- Compare scientific concepts and technology to objects with which the reader is familiar.
- Weave the necessary background into the story for unity and coherence.

For example, assume you are describing some microtubing used in a new guided missile. If you tell the readers it is three one-thousandths of an inch in diameter, they will have trouble visualizing it. Tell them it compares in size to a human hair and they can visualize its size immediately.

In another story, you can point out that a new jet aircraft carries more than 17,000 gallons of fuel. This is an impressive figure, but it does not mean much to the average reader. It would be more meaningful for you to tell the reader that the same amount of gasoline could power his car for the next 20 years.

Whenever possible, avoid generalizations. Use figures to back up any broad claims you may make. Do not merely say that the average Sailor uses too much water aboard ship. Add force and emphasis to the statement with understandable figures. Tell the reader the average Sailor drinks from two to four quarts of water a day. He uses five gallons of water daily merely to shave, brush his teeth and wash his hands. Cleaning

and food preparation in the galley takes an additional five to eight gallons per crew member. In addition, he uses up to 10 gallons of water when he takes a shower. Then tell the reader why this is important: because the Navy “makes” its own water, drop by drop, by distilling it from seawater.

If pictures are not available and you have to describe a mechanical device, describe it in terms with which the reader is familiar: “The Navy’s new supercavitating propeller looks like the screw part of an ordinary kitchen food grinder.”

In studying feature techniques, the writer should not overlook the finest training material of all—the published work of other feature writers. When you discover a piece in a newspaper or magazine that particularly interests you, you should read it again and analyze the devices the author used to make the work interesting, informative, entertaining or gripping. With a little adaptation and practice, you can make the same techniques your own.

One thing you will probably discover is that when a story leaves you with a satisfying aftertaste, it is often because it was good enough to hold your interest to the end—and because the ending was a piece of artistic writing in itself.

Conclusion

The conclusion of all good feature stories terminates the article in a positive manner. As in the lead, the writer is limited only by the ability in composing a conclusion.

One device frequently used is to summarize the key points of the story. Another way to end a story is to present a new fact, generally a fact that highlights the importance of the subject of the article. No matter how you do it, though, the ending should leave the reader satisfied that the time spent reading the piece was time well-spent. If you provided a tantalizing lead and a well-constructed body that held the reader’s interest, you owe to the story and the reader an equally well-written conclusion.

As mentioned earlier in this chapter, the feature lead example about USS *Norfolk* intercepting the Russian missile-loaded freighter sums up the action and puts the story in a new light by using a different twist. Consider the following excerpt:

Eventually, on orders from Moscow, canvas was rolled back on all eight 70-foot missiles. In six hours, governments had been contacted,

orders issued and received, proving photographs taken, and not a shot was fired.

Suddenly the meeting was news—as much so as if it had been a major naval engagement—but not a shot was fired. The dull patrol of USS *Norfolk* had been broken, and momentarily the endless watches became meaningful. Its mission had been accomplished.

The next day, *Norfolk* returned to its station on the now familiar patrol and observed a famous armistice on Veterans Day, November 1962, itself the new veteran maintaining the armistice in a new kind of war.

Not a shot had been fired. The “war” in Cuba was still cold.

A choice quote from an interview often makes a good ending for a feature story. The following example is how a Navy Journalist concluded a story about a group of circuit-riding Navy dentists and technicians conducting a people-to-people dental program in Africa:

“We’re glad to get out with the African people,” said Nicholl (a chief Dental Technician). “The fact that there’s an element of danger in it is overshadowed by the thanks of the people we’re helping. We’ve never left a village or hamlet without a barrage of cheering and clapping from our patients.”

The story on the new piece of machinery ended with the following paragraphs:

Sure, they had hated it to begin with, that monstrous machine, but now it was their monstrous machine. Constant association and the care they had lavished on it had made it their baby. The ugly monster had become an object of beauty to them, a delicate thing to be protected.

A passing Navy Journalist, new on board, stopped to drink in its loveliness. He looked as though he might be going to touch her. “Keep your cotton-pickin’ hands off the baby,” Quinlon snarled, and the other two baby-tenders curled their lips at the JO until he scuttled away. ...

PERSONALITY FEATURE

Personality feature is similar to other features in that it appeals to people’s interest in other people. It

normally points out special achievement, success or obstacles surmounted in life and centers on a particular event or achievement.

The manner in which personality features differ from other features is that they are almost always about a single individual. This type of feature gives interesting information about the person’s life, rather than just the person’s opinions. The properly written personality feature is a vivid word picture of the subject’s personality traits and physical features as well as a description of the things that make the person unusual or interesting. The effective personality feature leaves readers feeling they have met the subject face-to-face and know that individual personally (see figure 3-3).

Research

Since the personality feature story delves so deeply into the subject’s traits and physical features, considerable research is required. Most of the required information must be gathered through interviews. Conduct interviews with the subject and persons who intimately know the subject or have something to contribute. Some information can also be obtained from printed background material and from personal observations of friends and associates of the subject.

Personality features should contain the following information:

- Biographical data. Use only that biographical data you feel is necessary to your story (i.e., age, hometown, parent’s names, major duty assignments, time-in-service, marital status, etc.). Unimportant statistics and data tend to bog a story down and make for dry reading. The tone of a story usually dictates the amount of data required.
- Description. Describe the person, the details of the setting, surroundings and general atmosphere.
- Quotes. Use quotations from the interviewee in which that individual’s principles for attaining success, and so forth, are related.
- General accounting. Present a general sketch of personal achievement, success and so forth, in the words of the interviewee or friends of that person.

Presentation of Information

In addition to the feature writing methods mentioned earlier in this chapter, personality features require a few techniques all their own. There are methods that can be used to enable you, as the writer, to make your readers feel they have met your subject face to face, heard that person speak, seen the individual act and know the thoughts or opinions and past life of the person. These methods are discussed in the following text:

- Telling of characteristic mannerisms and actions
- Using direct quotations in a characteristic manner
- Actually describing the subject's personal appearance, demeanor, facial expressions and dress in his or her environment (fig. 3-3)
- Giving the opinions of others about the subject
- Showing how friends and associates react to the subject

The following personality feature excerpts should help you see how some of the techniques are used:

Bryan Tyler of the station's imaging facility approaches his art seriously—with strong conviction and knowledge developed by extensive formal training and much practice.

He does not like photo contests although he has won many of them. He would rather focus

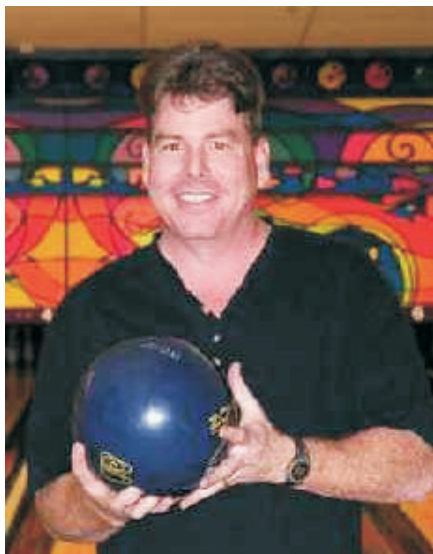


Figure 3-3 Personality feature photo.
(Photo by JOCS (AW) Jon Gagne)

on the effects of people rather than photograph people themselves—but does both well. ...

Tyler is a sensitive artist who knows how to take, and more important, why he takes photographs. ...

"I like taking peopleless photographs that relate directly to man either by content or implication," Tyler puts it.

During a tour of duty in Washington DC., the lanky Virginian worked primarily with official portraits.

"It can be frustrating shooting portraits," emphasizes Tyler as he strokes his bushy black hair. "Everyone dressed the same with his only identity worn on his sleeve and placed in the same sterile environment. The portraits I keep, and feel satisfied with, show people in their own environment, or in a meaningful situation, hopefully conveying some insight into the subject."

"In Petty Officer Tyler, I think we have one of the Navy's finest," said his commanding officer, Capt Rose Grosbeak. "There's not one person here who doesn't feel that way about Bryan."

Tyler finds stimulation and excitement in searching for and producing meaningful photographs, even in the most mundane jobs. ...

"Photography should never end," Tyler reflects. "All you should do is change subjects and fulfill some meaningful purpose, either to me or to the person for whom I am shooting."

The material presented here gives the beginning feature writer a start in the right direction. Writing courses, taken from time to time, can help. Criticism from experienced feature writers and editors is a great aid. Studying the work of other writers, as mentioned earlier, is a fine guide to improvement. Reading about writing alone, however, never taught anyone to write. Like the disciplines of newswriting, the art of feature writing is learned by doing—**by writing**.

THE SPEECH STORY

LEARNING OBJECTIVE: *Recognize the fundamentals of writing a speech story.*

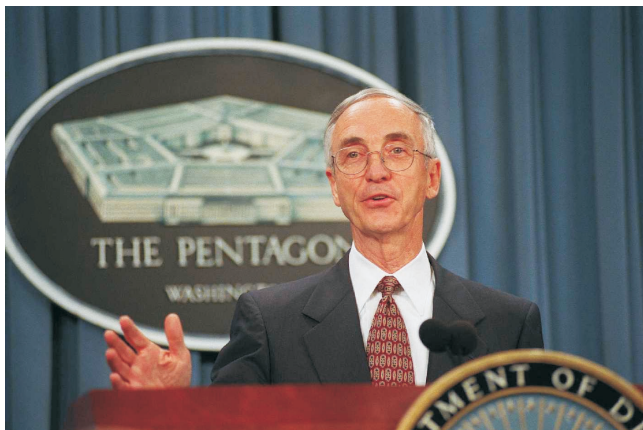


Figure 3-4.—A speech story features something not officially disclosed before.

(Photo by R. D. Ward)

Often, Navy JOs become jittery when first assigned to cover a speech story because they do not think they can get the facts or put them into story form. Actually, any writer who knows the fundamentals of news reporting can write a speech story.

First, the writing of a speech story resembles any other news story in many aspects. The most important fact, the climax of the story, goes in the lead. This usually means that the most important thing the speaker said goes in the lead. Occasionally, the most important fact may be something unusual—audience reaction, for instance—but generally, what the speaker said, either in quote or summary, is the feature.

The Secretary of Defense (SECDEF) may cover four major topics during an address, but the main point may have been the disclosure of a pay increase for all military personnel. This fact goes into the lead as depicted in the following text:

“All active-duty military personnel will get a four percent pay increase January 1,” said Defense Secretary Justin N. Case in a speech before the National Press Club last night.

Merely that a speaker appeared before an audience has very little story merit. The speaker must say something newsworthy—something that has not been officially disclosed before. This normally happens when a speaker appears before the media in a news conference (fig. 3-4).

The subject title of the speech is rarely important enough to become part of the lead. Speech titles are usually catch phrases that reveal very little about what is the most important part of the story. For example, when the President of the United States speaks, the lead features what he said in the following manner:

“The president, in a major speech tonight, called for another tax cut. ...”

If the writer started off with the information that the president spoke, no one would have much insight into the importance of the speech.

In structuring the speech story lead, include **what** was said and **who** said it. **When** and **where** it was said can usually be included within the lead, if the lead does not become too cumbersome. If it does, include them in the second paragraph.

Usually a direct quote lead will not do, for most speakers do not summarize their talk in one sentence. Thus the writer should paraphrase the lead, summarizing what the speaker said in one brief sentence.

PARAPHRASING

When you paraphrase, you must be careful to keep the speaker’s meaning. Do not quote out of context; that is, do not quote a sentence that gives a wrong impression when used alone.

For example, a reporter hears the president say, “I haven’t decided to seek reelection. However, I have instructed my staff not to be too hasty in looking for new employment.” If the journalist had quoted that first sentence alone, he would have given the impression that the president was not planning to run for another term in office, when that obviously was not what the president meant.

QUOTES

When quoting, wait for a striking phrase or summary of a key point. Use quotes in a speech story to give the flavor of the speaker’s talk. With quotes you can convey to the reader what the talk was like. To do this, the writer need not quote whole paragraphs because they make the copy dull. A few good quotes scattered throughout the story are enough.

To use quotes, you must understand the basics of quoting. A quotation must consist of the speaker’s exact words. The writer should not change one word. You must use quotation marks at the beginning and end of the quote as in the next example: “I think, therefore, I am.” You must use a comma to set off the quoted part of the following sentence: He said, “That did it.” To add the words “he said” at the end of the sentence, put the comma after the quoted matter and before the quote marks: “That did it,” he said.

When quoted matter does not make a sentence, use no comma and no capital letter to introduce the quote as in the following example: He did not “purge them.” Note the periods and commas are always inside the quotation marks. No comma is needed after a quote if it asks a question such as in the following: “Did you go?” he asked. Also, no comma is needed with a quoted exclamation point as in the next example: “What a view!” yelled the astronaut.

On occasion, a speaker may make an error he does not acknowledge during a speech or news conference. If you must use this particular quoted material, insert **[sic]** immediately after the error. This shows, for the record, that the speaker made the error and not the writer. Consider the following example:

“NASA has experienced a very good safety record since the Challenger disaster in early January [sic] 1986. During this time frame ...

Handling Long Quotes

Consecutive paragraphs of quotations do not require quotation marks at the end of each paragraph. These are required only when the entire quote ends. You do, however, begin each new paragraph with quotes. Nevertheless, as stated earlier, you can write more effectively by not using long quotes.

The ellipsis is a device of punctuation used in quoting. It consists of three spaced periods (...) used to show omission of a word or words necessary to complete a statement or quotation. If a quote is long and a writer wants to use it, the writer can delete the unnecessary words by using the ellipsis. However, too many beginners go wild with the ellipsis. They overuse it, sticking the three dots in every sentence. If you must use several ellipses to convey the message, it is better that you paraphrase the sentence.

If the writer starts a quote in the middle of a speaker’s sentence, the ellipsis need not be used before the quoted words. For example, the speaker may have said the following: “Considering all factors, and my staff has done that for many months, I feel the trainee would be ready for duty in a combat zone after 20 weeks of basic training instead of the present eight.” A JO’s sentence may read like the following: General Needam said, “The trainee would be ready for duty in a combat zone after 20 weeks of basic training instead of the present eight.”

Then, if you want to end a quote in the middle of the speaker’s sentence, leave four dots—three for the

ellipsis and one for the regular period as follows: “The trainee would be ready for duty in a combat zone after 20 weeks of basic training. ...”

Quoting is only a part of writing the speech story. The writer must still identify the speaker no later than the second paragraph. Many times the speaker will be identified in the lead.

Even when you think a person is well-known, you must still include a full name and full title in the story. That way the reader will know exactly who you are quoting and will not confuse that person with someone else with the same name or similar position.

If someone is relatively unknown, you may use a general job title for the first identification, such as a college president or a city administrator. Include the speaker’s name in the second paragraph.

Quote-Summary Method

Combining the guidelines concerning quotes and the material covered earlier about identification, a lead and the second paragraph for a typical speech story should read in the following way:

President Roland Coaster has asked the Defense Department to revise its training and education systems so every man and woman in the military service will come out with a skill marketable in the civilian economy.

In his annual manpower report to Congress, the president said, “There are some military specialists whose training does not lead directly to civilian employment. To help them, I have asked the Secretary of Defense to make available, to the maximum extent possible, in-service training and educational opportunities that will increase their chances for employment in civilian life.”

An example of a lead with a lesser-known person may read as follows:

The Navy’s Chief of Information said in a speech last night that his office was requesting more than 100 additional public affairs duties and emphasized that a preplanned public affairs program was essential.

In the second paragraph the writer usually gives a fuller identification of the speaker, the occasion of the speech, where it was given, and, if there is room and it is noteworthy, the attendance. Next, the writer uses the **quote-summary** method of organization.

The quote-summary method uses one paragraph of quotes from the speaker, then one of the writer's paraphrase. It does not matter which comes first—quote or summary. This method allows the reader to get the flavor of the speech through the quotes and enables the writer to reduce the length of his story by summarizing large portions.

For example, the following is a quoted paragraph followed by a paraphrased paragraph:

“Our children can read, write, spell, do arithmetic and use grammar, which is more important than learning a lot of meaningless rules.”

In criticizing drill, or rote teaching, the school superintendent argued that under former methods a child might win a medal in American history and still not understand the meaning of American democracy.

Notice that the paragraph of summary is related to the quoted one. The speech story, like any other, keeps

related material together. Table 3-1 illustrates a speech story using the quote-summary method.

ATTRIBUTION

Besides the organization of the story, the JO must be aware of other problems in the speech story.

Attribution—identifying the source of information or opinion—is needed in almost every paragraph. The writer must make it clear who is talking. Thus the writer should include attribution often. Beginners should attribute every sentence expressing opinion, for too often the reader forgets, and it seems the writer is making the statements in the story.

Attribution may consist merely of the phrase “he said.” However, to be sure the reader does not forget who the speaker is, the writer should occasionally insert the speaker's name. The writer may put the attribution at the beginning, middle or end of the sentence, but the natural place for attribution is at the end of the sentence.

Table 3-1.—Speech Story Using the Quote-Summary Method

Quote	“Take care of your men and women. They are the Navy’s most precious resources.”
Summary	This was the keynote of a speech delivered Friday by Radm. Helen O. Troy, Assistant Chief of Naval Personnel for Education and Training. Speaking before the class of the Naval Officer Candidate School here, Radm. Troy emphasized the importance of maintaining good relations between officers and enlisted personnel.
Quote	“The Navy into which you are now going for your first assignment has a number of problems facing it,” Radm. Troy said. “One of the most serious is the failure of a high percentage of our first cruise Navy men and women to reenlist.”
Summary	Citing current facts and figures, the admiral pointed out that the reenlistment rate among first-termers was low. It would have to be doubled if the Navy hoped to meet its manning requirements 10 years from now.
Quote	“You must know your men and women and take care of them,” the admiral continued. “These are the cardinal rules. But I add two more: know what they are supposed to know, and help them learn it.”
Summary	Radm Troy advised the graduating officers to study the same training manuals the enlisted community studies for advancement. She told them to use the same terms and the same approaches to their work that are taught to enlisteds in their schools and in their textbooks.

When writing a speech story, never use such words, unless quoted, as “I,” “our,” “us,” “we,” “me,” “you” or “your.” Standing alone, these words represent the writer’s viewpoint. So, if the speaker says our country needs more nuclear surface ships, the writer says: “The United States needs more nuclear surface ships.” If the speaker says “I,” it means just that and not the newswriter.

“SAID” AND OTHER VERBS

Many reporters covering speeches are tempted to use vivid words to describe how the speaker talked. Unfortunately, the truth often conflicts with the vivid verbs. The best verb to use is “said.” Here is the natural and neutral link between the speaker and what he said. But many writers feel their creativity is stifled by using too many “saids.” There are, of course, synonyms like “cajoled,” “pleaded,” “beseeched,” “asked,” “murmured,” “digressed,” “asserted,” “told,” “declared” and thousands of others that can often be used for variety.

When using these words to describe how the speaker expressed himself, be sure you describe the speaker’s emotions accurately. Always be alert to exact meaning and connotation.

PAINTING A PICTURE

To add more color to the story, the writer may occasionally describe interesting hand movements or gestures the speaker made. An example appeared earlier in this chapter when Petty Officer Tyler emphasized a point as he stroked his “bushy black hair.”

When former Russian Premier Khrushchev removed his shoe and pounded it on a table at the United Nations, every story covering his speech included it high in the account. Most speakers will not be that flamboyant, but they may raise a hand toward the ceiling or pound on the lectern for emphasis. An occasional mention of this adds flavor to the story and points up what the speaker feels is important.

GETTING THE FACTS

Before writing the speech story, you must get the facts. Most reporters depend on tape recordings or a copy of the speech. Frequently, a speaker may be approached—either directly or through his public affairs staff—for a copy of the speech if it is not supplied in advance.

Should you find yourself in a situation where you must rely on your own note-taking to gather facts, make sure you get the main points of the speech. A JO is not expected to be a stenographer, but you will still be held accountable for what you write. So listen carefully and write those quotes accurately.

Most professional reporters have their own system of note-taking, which usually consists of shortcuts. For example, a writer may drop all vowels from words—Sailor becomes “slr,” soldier becomes “sldr,” and so on. Similarly, the reporter may not dot the “i’s” and cross the “t’s” when writing rapidly. If you want to write down the word *responsibility*, you might dash off “**respons**” and later, when looking over the notes, the scribbling will be understood. Use your notes while they are fresh in your mind.

By using a homemade version shorthand, you can listen to the meaning of the speech. You are waiting for the important points of the speech, not mechanically copying down every word as a stenographer does.

In summary, remember the following key ideas about speech stories:

- The most important fact goes in the lead (what and who said it).
- Use ellipses to handle long quotations.
- Use the quote-summary method to organize the story.
- Learn to attribute information or opinion in the story.
- Use vivid words carefully.
- Get the facts straight. (Use your notes, tape recorder and a copy of the speech when possible.)

THE SPORTS STORY

LEARNING OBJECTIVE: *Recognize the principle of sports writing, the structure of a sports story, the use of quotes, the various sports writing rules and considerations and the sources of sports information.*

Sportswriting, whether it is for a great metropolitan daily or for a four-page internal Navy publication, can be the very lifeblood of a publication. No other editorial phase of a newspaper has quite so much to offer the writer—or so much to challenge the writer’s imagination and creativity (fig. 3-5).



Figure 3-5.—Football is one of a wide array of Navy sports the Navy Journalist will cover.
(Photo by PH1 (NAC) Mark Kettenhotten)

Sportswriting is a difficult side of journalism. It is tricky for the sportswriter who regularly covers a National Football League team. It is tricky for the JOSN who wades through the task of writing an eight-inch story about a touch football game played on the base yesterday.

For some people, sportswriting is easier than for others, probably because they are athletes or because they are longtime fans. It is not true, however, that only ex-jocks and channel-hopping sports addicts can write sports. With a little training and practice, any writer can become, at the very least, an adequate sportswriter.

SPORTS WRITING STRUCTURE

Writing about a game or a sporting event is essentially the same as writing a straight news story. Like straight news, sports stories are written in the inverted pyramid style (discussed in the previous chapter). The main difference between sports and news writing is in the lead. A sports lead usually emphasizes the **who** and **how** of an event, while a straight news lead usually emphasizes the **who** and **what**.

Like a news story, the lead is normally a one-sentence summary of the essential Ws and H, the bridge links the lead to the body, and the body is written to present facts in descending order of importance.

We will now examine the lead, bridge and body of sports stories in more detail.

Lead

Sports leads normally use the who and how as the lead emphasis. Leads should include the **who**, **what**, **when**, **where** and **how**. The **who** may be the teams

involved or the names of key players. The **what** will normally be the name of the sport, league or tournament. The **when** should be the date or day of the event, and the **where** should be the location of the event. The **how** is usually a brief description of how the game or contest was won and the score.

SUMMARY LEAD.—In a summary lead, the **who** and **how** will be the lead emphasis. The final score should be in the lead and **not** repeated elsewhere in the story. Many beginning writers, in an attempt to summarize the game, repeat the score in the body. This is wrong. If the reader forgets the score, he can easily refer to the lead.

Consider the following example:

Alvin Gecko's second-half scoring binge led the Pensacola Goshawks to a come-from-behind 94-93 victory over the Saufley Mole Chickens in Wednesday night's basketball opener at Tallship Field House.

In this example, the lead emphasis is Alvin Gecko (who) and his scoring binge (how). This is a classic who and how summary lead, highlighting the key player and how the game was won. This is the tried-and-true sports lead, and the type all sportswriters should master.

BACKGROUND INFORMATION LEAD.—The background information lead is another type of lead you should know about. It is a lead many sportswriters now use, especially when writing about games that have been broadcast over radio or television. Since readers are likely to know in advance the final score, who won and how the game was won, many sportswriters write leads that emphasize background information or locker room quotes to attract the reader.

The following is an example:

If Myra Naviete's sprained ankle slowed her down Saturday night, you couldn't prove it to the Naval Station Miami Pirates.

The speedy forward, who was sidelined three games because of an injury, scored 23 points to lead the Naval Security Group Hialeah Seminoles to a 56-37 victory over the Pirates in women's basketball action at Milander Gym.

Or:

Ugly.

That's the word coach Thomas Katt used to describe his Century Dolphins' 88-79

basketball victory over Rainbow Central here Friday night.

(Bridge) “We stunk up the gym,” Katt said. “I hate to say it,” he added, “but the better team lost tonight.”

Note that these leads emphasize background information and are not one-sentence summary leads. They still include the essential Ws and H. Some newer journalism textbooks advise sportswriters to write this type of lead and to stay away from the simple summary lead. You may wish to follow this advice as you develop your sportswriting skills, but first you should master the bread-and-butter summary lead.

Bridge

Bridges in sports stories serve the same purpose as news story bridges, primarily to link the lead to the body. Like news story bridges, they are often categorized by the purposes they serve, easily remembered with the acronym **WAITS**:

- W—Ws or H not answered in the lead are answered in the bridge.
- A—Attributes information found in the lead.
- I—Identifies persons or groups impersonally identified in the lead.
- T—Ties the story back to a previous story.
- S—Secondary facts are brought out in the bridge.

Very often, sports bridges are used to bring out secondary facts that explain the significance of the game. The bridge might, for example, explain that a loss drops the team into the losers’ bracket in a tournament, that a victory ties the team for the league lead, that a loss marks the fourth in a row for the team, or any other important consequence.

Consider the example that follows:

The shutout is the first suffered by the Fightin’ Giant Lampreys since losing 24-0 to the USS *Greystone* in the second game of the 1992 season—39 games ago.

Or:

The victory extends USS *Saufley*’s winning streak to eight and extends its lead to four games over the second-place Naval Hospital in the Blue and Gold Division.

Body

Many beginning sportswriters incorrectly write the bodies of their sports stories chronologically. However, if the key play took place in the fifth inning or the third quarter, that is where the body should begin. Usually, the key play will be one that breaks a tie or gives the winning team the go-ahead margin. In baseball, it might be a four-run inning; in football, it might be a 60-yard touchdown pass; and, in basketball, it might be two clutch free throws in the final seconds.

Sometimes, the key will be a defensive play. It might be a blocked punt or a diving catch in the outfield that prevents three runs from scoring. Sometimes, no single play will stand out. Then it is up to the writer to choose what to highlight. Analyzing statistics and interviewing coaches or players after the game can help you isolate turning points in the game.

If a key play happens to be an error, do not be afraid to write about it. Athletes put themselves in the public eye whenever they take the field, opening themselves to praise and criticism. If, however, you are writing about youth activities or a Little League game, it is appropriate to avoid mentioning the name of the player who committed the error. In such cases, attribute the error to the team or position.

It is not necessary to write about every inning, period or quarter of a contest. If nothing of consequence happened during a period or over several innings, you do not have to explain that nothing happened. Rather, you may briefly explain with an introductory phrase like, “After two scoreless innings ...” or “Neither team could move the ball until ...” Do not bog your story down with detailed accounts of each batter or each ball possession; focus on the key plays.

USE OF SPORTS QUOTES

Quotes are used in the same manner as in newswriting. If you have quotes from coaches or players, weave them into the story. Use them to introduce, support or explain your account.

For example:

“We knew that (Scott) Glengarry was going to beat the secondary sometime,” said Blue Knights head coach Marc Antonius. “It was just a matter of time. With his speed,

nobody is going to deny him for four quarters,” he added.

Beat the secondary he did. On a third-and-12, following a holding penalty, Glengarry raced down the right sideline, then slanted toward the middle. Quarterback Cocoa Butler hit him at the 20, and Price could have walked in from there.

Or:

The Battlin’ Lemmings switched to a 2-1-2 zone early in the third period, and Stevens scored only two field goals the rest of the way.

“Gordian was killing us in the low post,” explained Earwigs coach Kelly Pritchard. “When we went to the zone,” he added, “we were able to double-team him and clog up the middle.”

ATTRIBUTION

Unlike newswriting, sportswriting requires little attribution. About the only attribution needed is for quotes or paraphrases. If the writer witnesses a game or event, he can write about the action without attribution. If he writes the story from scorebooks, he need not attribute the information because it is a matter of record.

SUPERLATIVES AND COLORFUL VERBS

As an observer, the sportswriter may inject his opinions concerning the action he witnesses. He might describe a team’s defense as “sloppy.” He might describe a catch in the outfield as “miraculous” or a basketball player’s leaping ability as “gravity-defying.” In newswriting, this is considered editorializing; in sports, it is the observation of a qualified observer. Do not overdo it, however, and do not confuse this freedom with a license to break the rules of newswriting. Save the superlatives for when they are warranted and for when you are confident you know what you are talking about. When in doubt, play it safe.

Similarly, the sportswriter is free to use colorful verbs or adjectives to describe how one team “smashed” or “clawed” its way to victory. People who read the sports pages or listen to sports broadcasts are accustomed to such language and expect it.

Do not, however, get colorful verbs confused with clichés. If you write “smacked the apple,” you are

resorting to a cliché. If you write, “smacked the ball,” you are using a colorful verb.

It is all right to use sports jargon, such as “threw a bomb,” “lobbed an alley-oop,” “turned a 6-4-3 double play” or “busted a monster jam,” when writing game accounts.

SPORTS TERMINOLOGY CONSIDERATIONS

You must know the terminology and the rules of the sport you are writing about. If you are not familiar with the sport, it is wise for you to start reading the sports sections of as many newspapers as possible to see how experienced writers cover games.

Use the terminology for the sport you are writing about. If you are new to sportswriting and are not sure of the terminology, play it safe. It is better for you to say a batter “hit” the ball or a quarterback “threw” a pass than to wrongly use words like “slammed” or “launched.” You will lose your credibility fast if you write that a team “edged” another team, 104-57, or that a quarterback “fired a nine-yard bomb.”

Write in the active voice as much as possible. Do not write “was won,” “were victorious,” and so forth. Write, instead, “defeated,” “blanked,” “overwhelmed,” and so on.

TROUBLESOME WORDS

A couple of words common in sportswriting trouble grammarians and some sports editors. The words are “win” and “host.”

Technically, “win” should not be used as a noun, and “host” should not be used as a verb, although many respected sportswriters and editors now accept such usage. Check with your editor before you write something like, “The victory marked the seventh straight win for the Eagles” or “The Eagles host the Naval Station Cervantes Cavaliers Friday.”

A similar usage problem arises with team names and pronouns. It is wrong for you to say, “NAS Pensacola began their drive on the 30-yard line.” “NAS Pensacola” is singular and “their” is plural. You should write, “NAS Pensacola began its drive. ...” You should use “their,” however, when you refer to a team by its plural nickname—Battlin’ Lemmings, Blue Knights, Fightin’ Giant Lampreys, Dolphins and so forth.

RANKS, NAMES AND NICKNAMES

In military sportswriting, it is common practice not to use ranks. However, your CO or office SOP may require their use.

Similarly, middle initials and such designations as “Jr.” or “III” are not used in sportswriting.

Nicknames, however, are common and should be used. The usual style for first reference is as follows: first name/nickname in quotation marks/last name. Note the following examples: Elvis “Toast” Patterson or Evander “Real Deal” Holyfield. Sometimes the nickname comes before the first name, as in “Neon” Deion Sanders. On second reference, only the last name is used.

NAMES AND NUMBERS

Just as in newswriting, names and numbers should stand out as red flags while copy editing; each must be double-checked. The difference in sports is that there are likely to be a lot more of both names and numbers.

Double-check name spellings and make sure numbers are correct. Also, make sure numbers add up, both in the story and in box or line scores.

SIDELIGHTS

Do not confine your story to action that takes place on the field. Use sideline information that may interest the reader: the size of the crowd, injuries that might have affected the outcome of the game, weather conditions and so forth.

TYPES OF SPORTS TO COVER

Sports encompasses more than just the big four (baseball/softball, football and basketball). On military installations, there are a number of other sports and recreational activities that warrant coverage, including bowling, tennis, racquetball, squash, golf, darts, boxing, wrestling, gymnastics, running, youth sports and hunting and fishing.

STRINGERS

For you to have a variety of sports coverage in your newspaper, you may have to develop a stringer system. It is important you remember that stringers are seldom trained journalists. Therefore, it is usually necessary for you to provide them with some training and brief them on your newspaper style and deadlines. More information on using stringers may be found in

Handbook for Stringers in the Armed Forces (NAVMC 26-84) and in the *JO 1&C*.

SOURCES OF SPORTS INFORMATION

A problem for many beginning sportswriters is knowing where to gather the needed information. Consider the following sources and note that officials are omitted from the list because they are seldom, if ever, a source of information:

- Morale, Welfare and Recreation (MWR) for the ins and outs of recreation, intramural and youth programs, including rules, schedules and official scorebooks.
- Coaches and managers for details about team members, lineups and rosters, game plans, quotes and information about a contest, especially a contest you did not cover yourself.
- Team members for accounts of what happened in the game. Be cautious. Many losing teams tend to blame the loss on the officiating, whether they lost by one point or 30 points.
- Official scorers for game statistics and scorebooks. If you run a box score of the game, be sure your stats match those of the official scorer.
- Fans for color and sidelight information, where appropriate. Often used in sidebar stories, fan reactions can help tell the story of a team’s success or misfortune.

Officials are impartial and usually refuse to comment. If an official’s call is vital to the story, do not expect him to explain or justify it unless it is a matter of rule interpretation. **Never** ask an official about judgment calls (balls and strikes, close calls on the bases, whether a receiver was in or out of bounds when he caught a pass, whether a basketball player traveled, etc.). Officials are, however, legitimate subjects for personality and rules clinic features.

Additional sports coverage guidelines (including help on compiling statistics) may be found in the latest edition of *The Associated Press Stylebook and Libel Manual*.

THE ACCIDENT STORY

LEARNING OBJECTIVE: *Identify the structure of the accident story and the methods used to gather accident news.*

Five Sailors are killed when one falls asleep at the wheel of his car after a weekend liberty.

A young Navy ensign dies in a flaming plane crash when something goes wrong with his jet during a routine training hop.

A Marine accidentally shoots a buddy with a gun he did not think was loaded.

An airman crosses an aircraft flight line and walks into the blades of a spinning propeller.

A civilian painter plunges to his death from a three-story Navy building when the lines in a scaffold break.

An explosion at a base facility kills 15 people and injures 35 others.

A Navy dependent child dies in an ambulance after drinking something from the family's medicine cabinet.

Accidents and disasters such as these take hundreds of lives each year. In addition to destroying life and property, they cause untold pain, misery and suffering to the victim's friends and relatives.

Yet, despite the undesirability of this type of news from the Navy's viewpoint, covering and writing accident stories are a part of your job (fig. 3-6).



Figure 3-6.—The Navy Journalist will write about many types of accidents, such as this aerial view of the Sasa Valley, Guam, crash site of Korean Airlines flight 801.

(Photo by PH2 Rex Cordell)

The following is an important tenet of Navy public affairs: **Accident news cannot be avoided or withheld, and it must be released.** The amount of information released varies with security and next-of-kin considerations.

Accidents can happen anytime and anywhere. Because they are unpredictable, unfortunate and undesirable as a source of news, the JO who covers and writes accident stories must be especially careful in handling them.

Accidents involve both life and death. They may cause human suffering, heartache and anxiety. Also, because accidents sometimes result from carelessness or negligence, they may injure reputations or lead to disciplinary action. A careless word or phrase in an accident story may cause great damage to the Navy, to individuals involved and to the careless writer. Therefore, **accuracy is of utmost importance** in the accident story.

When collecting information for a story, the journalist must be careful to avoid gossip and conjecture. You must be able to seek out proper authorities and get your information right the first time. You may not have the opportunity to verify it later.

You must stick to the concrete facts, resist any temptation to hide or cover up legitimate news, maintain high standards of good taste and, above all, be familiar with security restrictions and other limitations. You must know what to release and what not to release. Never will your abilities as a JO be put to a more exacting test.

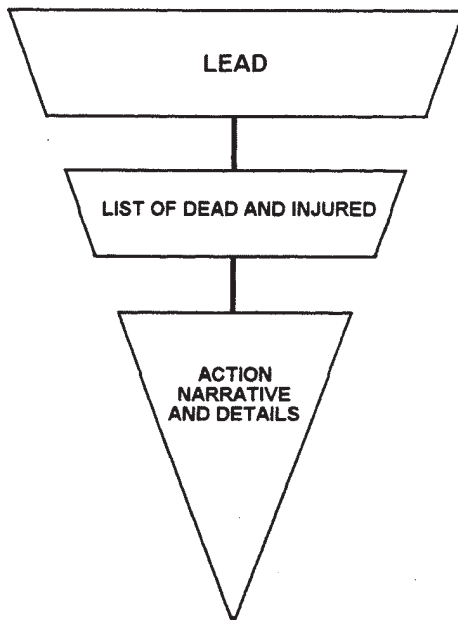
STRUCTURE

In any accident where a number of persons are killed or injured, the quickest and simplest way of writing the story is to use the accident/disaster story structure shown in table 3-2. This structure is adaptable to all types of accidents and enables you to get the most important facts into the beginning of the story.

Lead

The lead of an accident story introduces the reader to the basic facts in the situation by summarizing the five Ws and H (who, what, when, where, why and how). Consider this example: "Two San Diego Sailors were killed and three others seriously injured today

Table 3-2.—Accident/disaster story structure



when their automobile blew a tire and smashed into a tree on Highway 80, five miles east of El Cajon.”

Note that the lead answers all of the five Ws, but does not elaborate on any of them. The most important facts in any accident story are the number and identities of the casualties and the cause of the accident. This lead immediately satisfies the reader’s initial curiosity about these facts, but more detailed explanations are saved for the body of the story.

Since five persons are involved in this accident, it would not be practical to list their names and complete identities in the lead. Therefore, they are included in the next segment of the story.

Casualty List

The casualty list contains the names, ranks or ratings, ages, next of kin, hometown addresses and other pertinent information available on the dead and injured. A casualty list for the above lead might be presented in the proceeding manner (listing should be in alphabetical order to facilitate readers in scanning the list for known names):

Dead are:

Seaman Apprentice David K. Becker, 19, son of Mr. and Mrs. Daniel M. Becker of 821 Sherman Dr., St. Louis, Mo.

Seaman Jackson B. Painter, 22, son of Mr. and Mrs. Carl H. Painter of 680 Deamond St., Elmsdale, R.I., driver of the car.

Injured were:

Seaman Apprentice Bruce J. Burns, 22, son of Mr. and Mrs. Morgan J. Burns of Route 7, Nashville, Tenn., broken arms, shock.

Fireman Milton M. Jackson, 20, son of Mr. and Mrs. Ralph J. Jackson of 4210 Florida Ave., Lexington, Ky., skull fracture, internal injuries.

Engineman Third Class John C. Scole, 21, son of Mr. and Mrs. Alton H. Scole of 4109 American Ave., Long Beach, Calif., compound fractures, internal injuries.

The dead are always identified first in the casualty list, followed by the injured.

In identifying the victims, it is again emphasized that all pertinent information related to them be included in the list. A newspaper near San Diego might use only the victims’ names, ages and rates. The parents’ names and hometown addresses might be cut because they have no local news value.

The wire services, however, would want all the information. A story like this would be picked up and served to newspapers in the victims’ hometowns. Names of the parents and their addresses are important. By including all the information in your releases, you leave its use up to the discretion of the media. It may also save you the trouble of later answering queries for additional information. Also, note that the driver of the car has been identified among those killed and that specific injuries have been listed for those injured. Most newspapers follow this practice. This eliminates the need for cluttering up the body of the story with these details later.

If there are 10 or more casualties, the recommendation is that you place their names separately at the end of the story. The newspaper can treat the list as a sidebar or run the names in an adjoining box. Too many names in the casualty list cause a big break between the lead and the body, interfering with the story’s progress.

The use of a casualty structure has two distinct advantages for the newspaper. First, this treatment gives each name more prominence in the story because of the typographical arrangement. Each victim is listed separately. The reader does not have to ferret out their names from one long paragraph. The reader merely runs down the list quickly to see if there is anybody the reader knows.

Second, the casualty list allows for easier handling in both the editorial department and the composing room.

Let us say the previous story appeared in the first edition of a newspaper. By the time the fourth edition of the paper is ready to go to press, one of the more seriously injured victims dies.

If the casualty structure is used, a complete revision of the story is not necessary. The editor makes a few minor changes in the lead and body of the story, then moves the name from the “injured” heading up to the “dead” heading in the casualty list.

Casualty Releasing Policy

Under most circumstances, the names of casualties cannot be released until the next of kin have been notified. In this case, the story should be written and released in the customary manner. However, the space ordinarily reserved for the casualty list should include the following statement:

“Names of casualties are being withheld pending notification of next of kin.”

Later, when the names are released, a newspaper may insert them in the proper place in the story. However, it is neither necessary nor desirable to withhold the other facts in the story until the names are available.

Current policy regarding the release of the names of the dead and injured, such as what can or cannot be released, is contained in *Department of the Navy Public Affairs Policy and Regulations*, SECNAVINST 5720.44A. (This publication will subsequently be referred to by its short title, *PA Regs.*)

If only two or three people are the victims of an accident, their names and identities should be incorporated into the paragraph structure of the story. Do not list them separately, name by name, as in the casualty list.

Let us assume that only one person was killed and another was injured in the previously described auto accident. The following is the way the names would be handled following the lead:

Seaman Jackson B. Painter, 22, the driver of the car, was killed instantly. He was the son of Mr. and Mrs. Carl H. Painter of 680 Deamond St., Elmsdale, R.I.

Engineman Third Class John C. Scole, 21, a passenger, suffered compound fractures and internal injuries. He is the son of Mr. and Mrs. Alton H. Scole of 4109 American Ave., Long Beach, Calif.

BODY

The body of an accident story tells the complete story in detail. It may be developed in either logical or chronological order, but it should be written in a manner appropriate to the subject matter.

A straight fact story concerning a plane crash or an auto accident would ordinarily be developed in logical order after the casualties are listed. The most important facts would be presented first. An accident story, however, is most adaptable to chronological order development. In a heroic rescue, for example, where dramatic details play an important part, the story would be told in narrative form.

STYLE

The style for an accident story is the same as for all newswriting. Simplicity, clarity and brevity are essential elements. More than ever, the writer should tell the story and stick to the facts.

Maudlin sentimentality or emotionalism—the old “hearts and flowers” routine—must be avoided. Phrases such as “tragic loss,” “grief-stricken family” and “went to his final reward” are the marks of an amateur. They are banned in most newsrooms.

There are also certain errors in syntax that are peculiar to accident stories. Note the examples that follow:

- Death may occur following an operation or during an operation, but not as a **result of an operation**. This implies negligence on the part of the persons performing it.
- Accidents **happen** and explosions **occur**, but neither takes place. That would imply they had been scheduled.
- Everybody dies ultimately of heart failure, not of a heart ailment.
- A fire is not a conflagration until it sweeps a wide area. Conflagrations are rare. A fire approaches conflagration proportions only when three or four city blocks are aflame.
- A fire may damage, destroy, gut or raze a house. It does not, however, partially destroy it or burn it to the ground.
- Although commonly used, planes do not collide in midair. They may collide on the ground or in the air. There is no way of determining midair.

Weather often causes accidents and disasters that make news. In addition, gale warnings, storms at sea and hurricane evacuations play major roles in Navy stories. Simple weather terminology, however, is frequently misused by the Navy Journalist.

To avoid such misuse, some of the more common terms and their definitions with which you should become familiar are listed as follows:

- A **gale** is a strong wind with a velocity of 39 to 54 miles per hour.
- A **storm** manifests itself with winds of unusual force, ranging from 54 to 74 miles per hour. It is often accompanied by rain, snow, hail and violent outbursts of thunder and lightning.
- A **hurricane** or **typhoon** is a storm of intense severity and violence with winds exceeding 74 miles per hour. The difference between a hurricane and a typhoon is mostly a matter of geography. Storms west of the international date line are called typhoons; those east of the line are called hurricanes. Both are identified as cyclones in the Indian Ocean.

Certain medical terms crop up in accident stories from time to time. They should be simplified whenever possible as in the following examples:

- Abrasions—scratches
- Lacerations—cuts
- Contusions—bruises
- Trauma—shock

Damage figures are also frequently used. You should keep in mind that initial figures are usually estimates and should be stated as such. If the figures are unusual or high, they should be attributed to the authority who made them.

A person is widely known, not well-known. Nevertheless, even when widely known is used, it must be followed up with specific accomplishments.

Flowery euphemisms—once the rule in journalistic accounts of death—are no longer recommended in straight newswriting. They are less objective and are not acceptable to the reader. Why say remains, when body is a more accurate description? The body is placed in a coffin, not a casket. It is usually taken home, not shipped. Funeral services, not obsequies, are held. The body is buried, not interred.

The descriptive terms “young,” “middle-aged” and “elderly” are often misused because they are relative. The criteria used by The Associate Press is as follows: “A person is young until he is 35, middle-aged from 35 to 65 and elderly after 65.” But if you think a person’s age is important, why use descriptive adjectives at all? Why not merely identify the person as being 35, 52, 68 or whatever the age may be?

GATHERING THE FACTS

Gathering the facts for a routine Navy accident story is simple. Often, the best source of information is the personnel office. The “casualty report” made by the personnel office and transmitted by priority message will provide you with most of the necessary information (fig 3-7).

In gathering the facts for an accident story, make sure you get the following information:

- Casualty’s full name, including rank or rate, file or service number and branch of service.
- Status: Active duty or reserves.
- Type of death: Killed in action, died of wounds received in action or death from whatever cause; the extent of injury: Injuries sustained and medical listing of patient, when available. Remember to attribute the stated cause of death to competent authority when the cause is not perfectly obvious.
- Date, hour, place, circumstances and cause, when determined.
- Location and disposition of body.
- Full name, addresses and relationship of next of kin.



Figure 3-7.—Navy Journalists tell the Navy story.

(Photo by PH1 Jim Hampshire.)

- Information stating whether next of kin has been officially notified.

These facts usually provide enough information for a start. Note that the following report briefly answers all the questions necessary for an accident story. A few well-placed telephone calls will provide you with any other details you may need. The results may look something like those that follow:

Little Creek Sailor was killed today when his automobile went out of control, struck a railroad track and overturned on Sewell's Point Road near Ward's Corner.

The Sailor was identified as Gunner's Mate First Class John J. Doe, 37, husband of Mrs. Dolores E. Doe of 1717 Atlantic Ave., Atlantic City, NJ.

A veteran of 16 years naval service, Doe was attached to the Morale, Welfare and Recreation (MWR) Department, Little Creek Naval Amphibious Base. His death marks the first traffic fatality involving Little Creek naval personnel since February.

A routine accident story of this type usually runs about three or four paragraphs. It is brief and compact, yet contains enough information to satisfy the requirements of most newspapers.

All accident stories, however, are not this simple. When two or more casualties are involved, you will have to dig for more details and write a story with a casualty list. Listed next are some of the facts you should consider:

- Accurate number and complete identities of the dead and injured.
- Cause of the accident. Authoritative sources should be consulted and quoted whenever necessary. If the cause of the accident is not readily apparent, the story should state, "The cause of the accident is unknown and is under investigation." Although the exact cause of an accident may be unknown, qualifiers sometimes may be used to present a probable cause in the story. For example, "An eyewitness to the crash said that the plane struck a treetop during takeoff." The cause of an accident may be reported after a complete investigation has been made. Meanwhile, do not speculate in your release concerning its cause, especially when negligence or human error is suspected.

- Date board of inquiry will be convened and its members (if such a board is formed). Boards of inquiry usually are not formed unless the accident results in a major loss of Navy property, such as a shipboard fire. However, all aircraft accidents, even minor ones, are investigated thoroughly.
- Lives still imperiled. If people are still trapped, this rates coverage with the casualties and will require follow-up coverage as well.
- Property loss or damage. It is not necessary that you state the price of an airplane each time one crashes, but when a structure is damaged by the crash, media will want to know its value. You might want to keep a list on your desk of Navy aircraft and the approximate cost of each model.
- Disposition of the dead. State where the bodies have been taken.
- Care of the injured. Like the previous category, the care of the injured is especially applicable in off-station accidents. The story should state where the injured are being treated.
- Statements from survivors, especially where heroic acts are involved. Such statements are unnecessary in routine accidents. However, in a major catastrophe, they could be extremely valuable in piecing together a true picture of exactly what happened.
- Rescue work still underway. This is related to victims still imperiled.
- Human interest items. Noteworthy escapes, rescues or unusual circumstances involved should be acknowledged.

OTHER FACTORS TO KEEP IN MIND

Accidents are caused by various circumstances. The major causes for most accidents are human error, mechanical failure, disturbances of nature and "acts of God."

When a pilot misjudges the plane's altitude, attitude or airspeed and crashes upon the deck of an aircraft carrier, the accident is due to human error.

If a hydraulic catapult aboard the same carrier explodes and kills several Aviation Boatswain's Mates, the cause of the accident might be mechanical failure.

If the same ship were battered about in a violent storm at sea, and several crew members were injured when they were thrown out of their bunks, the accident could be blamed on disturbances of nature.

Finally, there are accidents that cannot be attributed to any of the above causes, and therefore, are classified under “acts of God.” Note the following example: A bee stings the coxswain of a motor launch, causing him to lose his footing, fall overboard and drown.

When an accident occurs in the Navy and an account of it gets into the newspaper, the reader automatically looks for someone or something to blame. The reader often forgets that circumstances as well as persons and things cause accidents.

In writing an accident story, the Navy Journalist should attempt to explain these circumstances. With proper handling, an accident story may result in a better understanding and appreciation by the public of the everyday hazards Navy personnel face.

Take, for example, an aircraft accident in which the pilot manages to parachute to safety just moments before his plane crashes into an isolated field. Regardless of the fact nobody was hurt and there was no private property damage, many readers will approach the facts with a negative point of view. Unless told differently, they will think about the story in terms of “carelessness” or “negligence.” Either the pilot did not know how to handle the plane, or the ground crew did not adequately prepare it for flight. These are typical reactions.

What the reader does not know, however, is that the plane might have suffered a flame-out over a heavily populated city. To protect the lives of people below, the pilot may have decided to stick with the disabled plane

until it reached an unpopulated area. In doing this, the pilot jeopardized his own chances for survival.

The reader never learns these facts unless they are mentioned in the story. Decisions and actions such as these should not be included just in the story; they should be featured in the lead. It is your responsibility to have the common sense and ability to recognize these facts and play them up accordingly.

In another story, a Sailor is killed in an auto accident. There is nothing unusual or spectacular about it. Nobody else is involved. The driver was killed when the car blew a tire on a sharp curve, veered out of control and smashed into a utility pole. Circumstances caused the accident.

Yet, when the story is published, a civilian reader may think—“Well, another one of those Sailors from the base killed himself today. I wish something would be done about their reckless driving habits. It is not safe to drive the highways anymore.”

In a story of this type, the circumstances should be carefully explained. It might also be pointed out in the story that this was the first auto accident in which a Sailor was involved in five or six months, if that is the case. Try to wrap up your story with some positive information.

It must be emphasized, however, that under no circumstances should facts be distorted or sugar-coated to put an accident in a favorable light. If mitigating circumstances exist, they should be reported. If they do not exist, tell the story straight and stick to the facts. You should strive to treat all stories as impartially and as objectively as possible. Never give a newspaper, or any other medium for that matter, less than your best effort.

CHAPTER 4

WRITING FOR MAGAZINES

The “Navy story” can take many forms. All must be considered, and each, depending on the nature of the material to be presented, should be used.

One of these forms is the magazine. Too often overlooked by Navy Journalists, this medium offers a ready market for virtually any subject one might consider. Since magazines cater to the tastes, temperaments, and interests of specific groups, they offer an excellent medium for you to reach exactly the audiences you desire.

These groups, with their special identified interests, provide a possible readership for many stories that have little or no appeal to the general public. An editor for the *Washington Post* would have extreme difficulty finding any news value in a story about a San Diego-based Sailor from Cleveland who collects coins. The editor of the *Numismatic News*, on the other hand, would welcome such an article and is even prepared to pay for it. The point is that the “Navy story” has many facets. Some are of interest to virtually everyone, some to relatively few. Whatever the case, all the stories should be told using the medium most appropriate for a particular story. Just remember—almost every story idea even one conceived with another medium in mind, is also right for some magazine.

This chapter acquaints you with the various types of magazines and magazine articles. It also introduces you to the composition and styles of magazine articles. Finally, it offers you some tips on researching magazines, researching story ideas, and getting your articles published.

MAJOR CLASSES OF MAGAZINES

LEARNING OBJECTIVE: *Recognize the major classes of magazines.*

In general, the four major classes of magazines are as follows:

- Consumer
- Trade, technical, professional and business
- Company (house organs)

- Service-oriented

CONSUMER MAGAZINES

Consumer magazines, the largest of the four classes, includes all those publications found on the newsstand (fig. 4-1). Their contents attempt to appeal to the general public or to large groups in our society that share common interests. With few exceptions, consumer magazines carry advertising and are sold individually or by subscription. A few magazines that qualify as “consumers” are sold only by subscription.

Consumer magazines are made-up of general interest publications and special interest publications. This distinction is made not so much for the readers as for the potential writers of magazine articles.

Magazines are purchased by people who expect certain things from a particular publication. For a magazine to be successful, those expectations must be met. Therefore, a writer must adapt to the style prescribed by a magazine’s editorial policy and submit only stories dealing with its expressed area of concern. Any disregard of this policy will result in a story’s automatic rejection, regardless of how interesting or well written it may be.

General Interest Publications

General interest publications, as the category implies, are intended for the general public. Their subject matter is broad, and their appeal usually transcends most of the boundaries of age, sex, race, education, occupation and geography. Magazines, such as *Reader’s Digest*, *Life*, *Parade* and *The Saturday Evening Post*, fall neatly into this category. Each contains a variety of articles to interest a diverse audience. Others, such as *Time* and *Newsweek*, also qualify as general interest publications. Although they concentrate primarily on news and current events, they still cover a wide range of subjects, offering something for everyone. Also, their material is presented in an easily read style that explains a news story in a way any reader can understand.

Some magazines originally published for specific groups now attract a wider audience because of



Figure 4-1.—Consumer magazines publications.

(Photo by JOCS (AW) Jon Gagné)

alterations to their contents or the changing interests of the reading public. *Family Circle*, for example, is not read exclusively by women, and men are not the only readers of *Gentlemen's Quarterly*.

Special Interest Publications

Special interest publications, as the term implies, are magazines directed at specific groups of readers with one or more common interests.

Some magazines attempt to cover all aspects of a broad subject, while others are concerned only with a particular element of the general subject. *Sports Illustrated*, for example, contains stories on practically any sport, but *Golf Digest* carries only stories related to golf.

Other special interest publications find their audiences through different demographic segmentations.

There are magazines published primarily for men (*Field and Stream*, *Men's Health*, *Gentlemen's*

Quarterly, and so on), and for women (*Cosmopolitan*, *Vogue*, *Woman's World* and so on), for boys (*Boys' Life*) and for girls (*Teen*).

There are magazines for various age groups. For example, *Senior World* is published for senior citizens; *Modern Maturity* for men and women 54 or older; *Mademoiselle* for college women, ages 18-22; *Careers* for boys and girls, ages 15 to 18; *Children's Digest* for boys and girls, ages 8 to 10; *Jack and Jill* for children, ages 6 to 8; and *Highlights for Children*, ages 2 to 12.

There are also magazines aimed at blacks and other minorities. *Ebony*, for example, is intended for black men and women and could be considered a "general interest publication." *Essence* is one of a number of magazines published with black women in mind, and *Players* caters to black male readers.

Some magazines are published for residents of a specific location, such as *Phoenix* for citizens of Phoenix, Arizona. Others, such as *Denver Living*, are for newcomers to an area. Still others, such as *Aloha*,

The Magazine of Hawaii, are directed toward potential visitors to a particular city, state or country.

There are magazines for the members of almost all religious sects (*Catholic Digest*, *Baptist Herald*, *Mennonite Brethren Herald*, *The National Jewish Monthly* and so forth) and most clubs, associations and fraternities.

In short, virtually every group has a corresponding consumer magazine published expressly for it.

TRADE, TECHNICAL, PROFESSIONAL AND BUSINESS

Magazines in the trade, technical, professional and business class are published for active business people. The readers of these publications are looking for ways to improve their businesses and increase profits. While they might appreciate a little humor in the articles and want the material to be well-written, they are not reading them for pleasure.

These business journals are designed to appeal to one of the following three specific groups:

- Retailers
- Manufacturers
- Professionals and industry experts

Retailers, along with business people who perform various services, are interested in such subjects as successful sales campaigns and unique merchandise displays. Manufacturers expect articles dealing with ways to solve industry problems, such as personnel absenteeism and equipment failure. Professionals and industry experts want stories about new techniques and technical developments in their respective fields.

All of these business people are interested in making money and managing their businesses more efficiently. Therefore, the primary purpose of each of the business journals is the goal of helping its readers do their jobs better. Besides stories about business trends and solutions to problems, these publications often offer advice on ways a particular business can be operated more profitably.

Trade Journals

While the term **trade journal** is often applied to all publications in the business journal class, there are subtle differences.

A trade refers to skilled work, usually requiring extensive training, but not necessarily formal

education, to master it. Carpentry is one example of a trade; printing is another. Therefore, a trade journal is a publication addressing the skilled laborers in a particular field, or the work they perform. *Motor Magazine* and *Ceramic Monthly* are examples of trade journals.

Technical Journals

Technical journals usually discuss sophisticated material, equipment or instruments and their use. Examples of technical journals are *Datamation*, *Broadcasting* and *Photomethods*.

Professional Journals

Professional journals are publications intended for professional people. This group primarily includes persons with a vocation or occupation requiring advanced education and training and involving intellectual skills. This group specifically comprises those working in such fields as law, medicine, theology, education, engineering, journalism and so forth. However, the term **professional** has, in general use, been expanded. It now includes the executives, managers, department heads, some staff members and even the sales force of most business enterprises.

Business Journals

There are business journals for those persons in, seemingly, every occupation imaginable. There is *Cashflow* for accountants, *Advertising Age* for ad agency personnel, *Chilton's Food Engineering* for those in the food and beverage processing industry and *American Psychologist* for psychologists.

There is *Scholastic Coach* for high school and college sports personnel, *Instructor Magazine* for elementary school teachers, *American Bee Journal* for amateur and professional beekeepers and *Grocery Distribution* for operators of food warehouses and distribution centers. *Police* is published for law enforcement personnel and *Editor and Publisher* for newspaper personnel. There is the *ABA Journal* for lawyers, *Private Practice* for medical doctors in private practice and *C&S (Casket and Sunnyside)* for funeral directors. *Across the Board* caters to business people.

COMPANY PUBLICATIONS (HOUSE ORGANS)

Unlike business journals, company publications, or house organs, are produced by or for the businesses or organizations they serve. Their readers need or want certain information about the companies for which they work, and the companies try to provide it.

There are six basic kinds of house organs. Many of the larger companies publish them all. A number of companies consolidate their news into fewer publications. Some small companies produce only occasional newsletters for their employees. Whatever the case, all have a need to communicate to an internal or external audience. And all have a need for material that will interest their readers.

The six types of company publications are as follows:

- Employee
- Customer
- Stockholder or corporate
- Sales
- Dealer
- Technical service

Employee

Employee magazines are designed to inspire and motivate employees. They keep workers up to date on company programs and policy and provide knowledge about employee benefits. They also provide recognition of the accomplishments of employees and inform co-workers of those achievements.

Published at regular intervals (weekly, monthly and so forth), employee magazines are much like ship and station newspapers.

Customer

Customer magazines are produced to remind their readers of the desirability of using a company's product or service.

Stockholder or Corporate

Stockholder or corporate magazines are published to inform a company's shareholders about policy and financial matters concerning that company.

Sales

Sales magazines are publications designed to help a company's field representatives make more sales. These publications contain suggestions on generating customer interest in some product or service and tips on closing sales. They might carry an evaluation of a successful sales campaign and offer advice on ways for the sales force to use it in connection with their wares. Sales magazines also are useful in keeping a sales force abreast of changes and improvements in their products and for motivating personnel with articles on positive thinking.

Dealer

Dealer magazines are publications produced to maintain an open channel of communication between a manufacturer and each independent dealer. They deal largely with facts about the manufacturer's product.

Technical Service

Technical service magazines are publications that contain technical information necessary for using or repairing a manufacturer's product.

Many of the larger companies, and some of the smaller ones, have their own printing facilities and editorial personnel so they can produce their publications "in house." Others employ only editorial personnel and "farm out" the printing requirements. Still other companies contract to have their magazines produced entirely by outside publishers. Regardless of the system used, the masthead of each magazine contains the name and address of the editor to contact about submitting material.

SERVICE-ORIENTED MAGAZINES

Service-oriented magazines are those magazines produced primarily for military personnel (active duty, reserve and retired), military dependents and Department of Defense (DoD) civilian employees. That is not to say that these publications have no readers outside their targeted audience. Many of the service-oriented magazines are read with interest by such people as educators, contractors, former military personnel and "friends of the services," such as Navy League members (fig 4-2).

However, Navy Journalists writing for these magazines should remember to direct their articles to the primary audience. Service-oriented magazines



Figure 4-2.—Services-oriented magazines provide a host of opportunities to tell the Navy story.
(Photo by JOCS (AW) Jon Gagné.)

may be compared with the special interest publications in the consumer magazine class. They are directed at a specific group of readers with a common interest (concern about the military establishment). Some of these magazines are intended for readers in all the armed forces (*Defense News*), while others are directed at a single service (the Navy's *All Hands*). Still other service-oriented magazines are published for a select group within a broad specific group. Examples of this type of magazine include *The Navy Supply Corps Newsletter* and *Mech*. These publications could also be compared with trade journals in the company publications class.

Service-oriented magazines are generally divided into the following three categories:

- Internal
- Association-produced
- Commercial enterprise

While most government agencies and all of the military services produce publications for their people, here we are concerned only with those published for the Navy. Therefore, all references in this manual to internal magazines are only to those produced for an audience connected directly with the Navy. These internal magazines include publications produced by

the DoD, Department of the Navy (DON) and individual naval commands. These publications can also include any magazine published by a command in another branch of service if at least one of the Navy's publics is a part of its targeted audience.

Internal

Internal magazines are financed with appropriated, or in some cases, nonappropriated funds. They are issued periodically—most are monthly publications—and contain no advertising. They are distributed free to their intended readers throughout the fleet. However, these publications are available to anyone in or out of the service and may be obtained at prescribed subscription rates. Internal magazines are edited (except for articles submitted by outside sources) and written by military personnel and civilian employees of the federal government (fig 4-3).

Examples of internal magazines are *All Hands* (mentioned earlier), *Naval Aviation News*, *Link* (a quarterly magazine dealing with enlisted personnel information), and *Navy Family Lifeline* (a newsletter of educational and informational articles and feature stories of special interest to spouses and families). See figure 4-4.

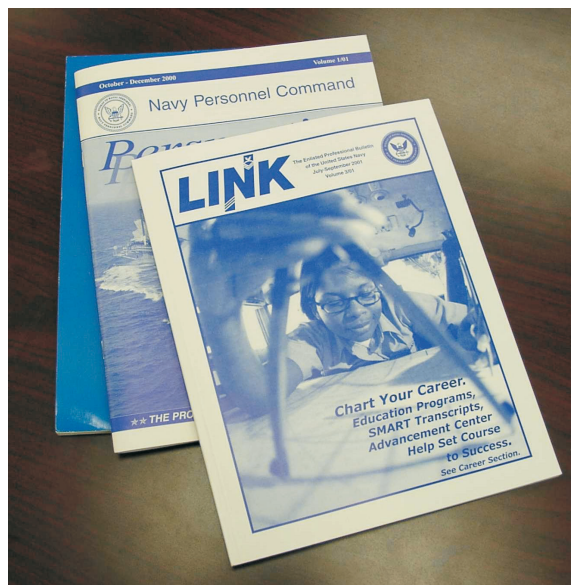


Figure 4-3.—Link Magazine and Prospective are two internal magazines published by the Bureau of Naval personnel.
(Photo by JOCS (AW) Jon Gagné)



Figure 4-4.—All Hands, Surface Warfare and Naval Aviation News are three of the premier internal magazines.
(Photo by JOCS (AW) Jon Gagné)

Association-Produced

Association-produced magazines are service-oriented periodicals sponsored primarily by associations interested in the military establishment and the individual services. In most instances, these publications are written and edited either by employees of the DoD or privately employed individuals. Most magazines in this category carry advertising to help with their financing.

Examples of association-produced magazines are *Proceedings*, sponsored by the U.S. Naval Institute,

and *Sea Power*, sponsored by the Navy League of the United States.

Commercial Enterprise

Commercial enterprise magazines are those published by private enterprises. They are financed by advertisers who want to reach a military audience.

Examples of commercial enterprise magazines are *National Defense*, *Military Living*, *Off-Duty* and the *Times Magazine*. Magazines in this category are also listed with the special interest publications group in the consumer magazines class.

Commercial enterprise and internal magazines provide the most probable markets for most Navy stories. However, all possible markets should be considered when you are developing a story idea.

MAGAZINE ARTICLES

LEARNING OBJECTIVE: Analyze the types of magazine articles and recognize the methods used in researching ideas for the various types.

Magazine articles are the stories, news items and other copy, regardless of length, that appear in magazines. Before publication, any such material is called a **manuscript**.

Magazine articles may be either fictitious or true, and much of the information presented in this chapter can be applied to both types. However, since Navy Journalists are expected to deal with facts, only nonfiction writing is specifically addressed here and throughout this training manual.

The major difference between a magazine article and a newspaper story is the style in which each is written. Matthew Arnold, a famous nineteenth century English poet and literary critic, once described journalism as “literature in a hurry.”

Arnold was not trying to belittle newspaper writers with that remark. He was merely noting that the obvious difference between news reporters and other writers is the breakneck pace at which newspaper journalists so often must operate. Newspaper reporters, by the very nature of their jobs, must carry the burden of unrelenting and monotonous regularity intensified by the pressure of deadlines. Working under those conditions could hardly be considered ideal for creative writing.

Now, however, even newspapers have discovered the magazine style, and many are even adopting its format.

Most newspapers report hard news in the traditional, inverted pyramid style but have had to use new tactics to compete with television coverage of timely news events. Their solution has been to provide in-depth coverage and a lengthy analysis of the news.

Many newspapers also have started carrying any number of feature stories in their pages on a regular basis to boost circulation. Some newspapers now publish almost nothing but features, especially photo features. And almost all major dailies with large Sunday editions publish their own magazine inserts or carry a syndicated magazine insert, such as *Parade*.

Consequently, when you are searching for a market for your manuscripts, you may often need to look no further than your local newspaper. Remember, however, that newspapers are published more frequently than magazines, and therefore, they usually are governed by stringent deadlines.

“Traditional” magazines, on the other hand, impose no such deadlines. It is true that news magazines, financial publications and a few other periodicals have a need for timely material. However, those are not the magazines you are likely to approach about running your Navy stories.

While all magazines, of necessity, have deadlines to meet, they are only printers’ deadlines. Most magazines carry material compiled 2 to 3 months in advance of publication.

Sometimes a magazine staff member is given a deadline for writing an article for a particular edition, but usually outside writers are faced with no such constraints. Any idea you may have is yours to develop at whatever pace you choose. You can allow ample time for research, time for the actual writing and more time, as necessary, for rewriting. You can leave the project and go on to other things, returning when you are ready. Then, when you are satisfied with your article, you are the one who decides it is completed. Theoretically, all this is done before anyone else knows the article is in the offing. In effect, it does not exist until you are ready to submit it.

Realistically, you, working as a Navy Journalist, are likely to be given an expected completion date for a magazine article assigned by your PAO. Also, after communicating with a magazine editor about a proposed article, you may be told that the article is

needed before a particular date. Those instances could be thought of as deadlines, but not very rigid ones. They mean glancing at a calendar, not watching a clock. This more leisurely pace of writing allows the marked difference in style between standard newspaper stories and magazine articles. Basic news stories, you will recall from chapter 2, are written in an inverted pyramid style. This form is preferred by newspapers and electronic media news departments because it presents all of the important facts at the beginning of a story. If there is not enough time to write or enough space or time to publish the complete story, a paragraph or two will usually suffice.

Since magazine articles are printed in their entirety, there are no requirements to put all of the important details “up front.” Therefore, magazine writers may use any format they believe best suits the material being presented. This allows the writers wider latitudes of expression and creativity.

The magazine form also gives writers the opportunity to be more thorough in their storytelling. Both news stories and magazine articles deal with facts. However, while newspapers usually present the basic details without comment (except in editorials and columns), magazines amplify those facts in depth to show how they will affect the reader. When necessary, magazines also permit their writers to provide extensive background details to enable the reader to understand the subject more fully.

A newspaper’s news has a perishable quality; its value and interest diminish as the degree of immediacy wanes. The news in magazines, although less timely, is more enduring. Many magazine articles are as informative and interesting a year after publication as they were on the day they first appeared in print. Magazine articles also are remembered longer than newspaper stories because magazines are read more thoroughly, and at a more leisurely pace, than are newspapers.

TYPES OF MAGAZINE ARTICLES

Any attempt to classify all of the forms of magazine articles would probably prove to be inadequate. However, certain characteristics do tend to identify seven general categories. These categories frequently overlap, and the dividing lines that separate them often become blurred. Even so, this classification serves as a starting point for learning to recognize the various types of magazine articles. This knowledge is necessary before you can even consider writing for the

magazine industry. For our purposes, there are seven basic types of magazine articles. They are as follows:

- Personality sketch
- Personal experience
- Confession
- Narrative
- Utility
- Interview
- Featurette

Personality Sketch

The personality sketch is a short biography that includes an individual's achievements. The purpose of an article of this type, whether a success article or a profile, is to portray the intimate details of character and personality of someone. The person may be widely known, one who has achieved some form of greatness or someone whose life is in some way interesting or remarkable. The individual does not have to be a famous show business or political personality; this type of story could just as well be written about a Navy person.

A Navy jet pilot who adopted an entire orphanage of Japanese children was the subject of an article of this kind. Another dealt with a Sailor aboard a destroyer who spent his reenlistment bonus on football equipment so his shipmates could compete against the crewmembers of larger Navy ships. Still other sketches have been written about Navy scientists, combat heroes, chaplains, test pilots and athletes.

Personal Experience

Unusual adventures, unique accomplishments, rare travel experiences and countless other personal experiences lend themselves to treatment in this type of article.

"My 60 Days Under the Sea in an Atomic Submarine," "I Fly With the Blue Angels," and "I Walked on the Moon" are typical titles of personal experience articles.

Thousands of Navy men and women have had exciting personal experiences they might have developed into good magazine articles. Quite often, however, they do not have the ability, the time or the inclination to write these experiences on paper. Nevertheless, they usually will talk about their

experiences, which can provide a good story opportunity for a journalist in search of ideas.

When you write this type of article, use the "as told to ..." byline. You should also use caution when writing in the first person. The frequent use of "I" can become or appear egotistical.

Confession

The confession article is not necessarily a "shocker" or scandal story. Instead, it is an "inside story" of conditions or problems normally unfamiliar to the average reader. The confession article often involves handicaps or disadvantages that are overcome by determination and common sense.

Incidents related in confession articles are often typical of everyday life. A spoiled, rich kid learns discipline and responsibility aboard a Navy destroyer. A midshipman's determination to overcome a speech defect saves his Navy career. A young man cures a morbid fear of water by joining the Navy. Subjects like these have been used in confession articles. The most noticeable characteristic of the confession story is the intimate, confidential tone in which the writer seems to be personally revealing a secret to the reader. Although the subject matter is personal, it must evoke an emphatic response from the reader.

Humor should not be overlooked in this type of article. An individual's willingness to tell the story shows that he or she is not ashamed. If humor can be injected into the account, it indicates an objective approach.

Some subjects are best told when given a humorous treatment. Many interesting articles about common phobias, such as a visit to the dentist, have been written that way. This approach often helps readers to see that most of the fear is unfounded. If the humor is skillfully handled, the readers will probably be amused.

Keep in mind, though, that humor must fit the situation. Flippant treatment of serious or distressful subjects will likely alienate your readers.

Narrative

The narrative is especially suitable for writing about Navy subjects. Sharp characterization, vivid description, dialogue, action and suspense are skillfully woven into the framework of a narrative article to dramatize the facts. However, the facts must be adapted to this type of treatment. The writer does not invent them, exaggerate them or embellish them in

any way. The story must be authentic even in the smallest detail.

The real life exploits and adventures of Sailors the world over, are told in magazine articles using the narrative approach. A heroic rescue, an epic battle, a dramatic struggle against the elements, a display of bravery and determination in the face of overwhelming difficulties are all subjects that may be developed into narrative articles.

Careful research is important in writing the narrative article. This is especially true if it is about an event in which many of the magazine's readers may have participated. An important error or omission will immediately be noted by these people, and they will then be skeptical of the entire article. Also, the writing should be colorful and fast-paced. Otherwise it may sound like a chapter out of a history textbook.

Utility

Any process, product, method or idea that will help the reader become wiser, healthier, wealthier or happier is a subject for the utility article. Also called the "how-to-do-it" article, the utility article is generally shorter than most other articles and the writing is usually expository or explanatory.

The Navy offers a wealth of ideas for the utility article. At one time or another, practically everyone has devised a scheme to improve a job, working conditions or equipment. These ideas are especially valuable if they can be tailored for a specific magazine. There are thousands of trade and employee magazines constantly looking for material of this type. Editors of *Popular Science* and *Popular Mechanics* build their entire magazines around this type of article.

The utility article can be compared to a set of instructions presented in an interesting and lively manner. Writers should ask themselves the questions they feel readers are most likely to ask, then answer them clearly and simply. Even though some readers may be experts, writers must assume that every reader is unfamiliar with the information and provide complete details. A routine set of instructions for building a simple cabinet can be interesting if it is presented properly.

You can use the first, second or third person in writing this article. The personal experience approach can be very effective in the utility article. The third person style should be used only if the idea presented involves dramatic or entertaining situations. The most

common approach is to use the second person, imperative voice (You fit the wrench ...).

Interview

Interview articles present questions and answers that offer a subject's views on a given topic. Little background information is given in the article if the subject is widely known to the readers and the emphasis is on the topic of discussion. The interview requires much advance planning, however, and the writer should research the subject thoroughly before conducting the interview. Each edition of *Playboy* presents an excellent example of the interview article.

Featurette

The featurette is probably the most popular and best-selling short article found in magazines today. It is short and simple, and it contains the element of oddity or humor and sometimes both. The purpose of the featurette is to entertain.

"Humor in Uniform" and "Life in These United States," are regular sections in *Reader's Digest* and are good examples of the featurette. Nearly every magazine carries at least one anecdote as filler material in each issue.

RESEARCHING AN IDEA FOR A MAGAZINE ARTICLE

Every person, place, event or thing is a possible source for a magazine article. What one person sees daily and takes for granted, another person with a well-developed eye for the interesting and unusual often can turn it into a successful article. The idea sources and material concerning feature writing discussed in chapter 3 also apply to magazine writing.

The Navy is a fertile source for subjects and ideas you can develop into good magazine articles. All you have to do is look around you. Better yet, thumb through some of the current issues of the leading magazines or visit the magazine's world wide web site. See what civilian professionals have written on the subject.

The sea, Sailors and ships have fascinated readers for centuries. The modern saga of the sea and the men and women of the U.S. Navy is as thrilling as anything found in fiction. In many cases, the factual accounts of the modern Navy far surpasses fiction material. Atomic-powered ships, supersonic aircraft, intercontinental ballistic missiles, earth satellites,

probes into space and similar topics have stimulated the imagination of hundreds of writers. Yet, countless story ideas about those subjects are still available to you.

Opportunities in the magazine field for Navy Journalists, or for that matter, any Navy man or woman with writing talent, are almost limitless. And to get started, one needs only to begin thinking.

Any magazine article, whether for a glamorous nationwide consumer magazine or for one of the Navy's internal publications, should begin with a good idea supported by a statement of purpose. An author without a purpose for an article easily loses sight of the intended goal. If an article would serve no purpose, the likely result would be wasted time and an unintelligible product.

Many beginning writers fail to narrow the subject to a workable idea. A sharp focus on a story idea is extremely important. The focus could be on an individual, an episode or theme, but it must be clearly defined.

The next step should take you, the writer, to the *Reader's Guide to Periodical Literature*. This guide is a cumulative index of published authors, subjects and titles that are current to within two weeks of its publication. When you use this reference, pay particular attention to the most recent coverage (by all publications) of your selected subject. This will help you determine if your idea is still fresh. Also, take notes to help you when you research information for the article.

You may also need to use some specific indexes for research. The *Air University Library Index to Military Periodicals*, for example, references all items that have appeared in service-oriented publications. The Internet can give you thousands of references and related stories that have been published. Other special indexes, including the library card catalogue, the *Cumulative Book Index*, and the *Book Review Index*, address subjects covered in a variety of other periodicals. You can also consult biographical dictionaries, encyclopedias, newspapers and pamphlets to learn about a particular subject. It is not uncommon for a writer to spend days, weeks or even months collecting information before an interview or visit.

One writer, preparing to write a personality sketch on a famous composer, spent 6 months doing research before he felt ready to interview his subject. During those 6 months, the writer spent three months reading

about symphonies. He spent another two months studying that particular composer's works and a final month talking to people who knew the composer.

Obviously, you will not spend 6 months researching every magazine article you write. However, in most cases, you will need to do some extensive research. The in-depth nature of most magazine articles requires that the writer thoroughly understand the subject he or she is presenting. Unless you are writing from personal experience, you must be prepared to conduct whatever research is necessary to give your article the degree of authority it requires (fig. 4-5).

Studying Magazine Styles

Knowing the markets for magazine articles is almost as important as knowing your subject. The best-written manuscript serves no purpose tucked away in a file cabinet or desk drawer. And the best-conceived idea for an article is of no value unless it is presented in an acceptable manuscript.

Studying magazines can solve both of these problems. Your research will tell you which magazine publishers are interested in your subject and the style in which they want articles to be written.

As you examine the magazines, you should be alert to the literary style or approach a magazine takes in presenting a subject. For instance, several magazines might handle a piece dealing with the Defense Information School (DINFOS) but each would present it in an entirely different way. The *Educational Review* would probably want to know the concepts and techniques of instruction, the *RCA Electronic Age*



Figure 4-5.—Magazines vary in size, content, and design.

(Photo by JOCS (AW) Jon Gagné.)

might be interested in the use of radio and television equipment, *All Hands* would likely prefer a story about the faculty and students and *Parade* might want emphasis on the educational angle and benefits to the individual.

In addition to the Internet, several publications dealing with the needs and requirements of magazines are available to assist you in your research. One such book is *Writer's Market*, published annually by Writer's Digest Books of Cincinnati, Ohio. *Writer's Market* contains a listing of nearly all consumer magazines and business journals published in the United States and Canada. Along with those listings is the following information:

- Mailing address of publication.
- World Wide Web Site Address.
- Names(s) of editor(s).
- Frequency of publication.
- Circulation.
- Demography of readers.
- Approximate number of manuscripts purchased per issue (if any).
- Method of payment (flat rate for manuscript, pays per line of copy, pays per word, pays percent of magazine royalties, pays in magazine copies, pays nothing).
- Rights purchased (all rights; first North American serial rights; simultaneous, second serial (reprint) rights; one-time rights; and so forth).
- Whether by-line is given.
- Description of material desired.
- Description of material not desired.
- Whether photos are desired, and if so, payment rates.
- Minimum and maximum lengths of manuscripts.
- Lead time for submission of season and holiday material.
- Whether unsolicited manuscripts are accepted.
- Whether previously published submissions are accepted.

- Whether simultaneous submissions are accepted. (Some magazines, especially regional ones, will consider such submissions if the offered manuscripts are not being sent to other publications in their state or geographical area.)
- Additional tips considered appropriate by various magazine editors.

You should keep in mind that most magazine editors have very specific ideas about material for their product. Any deviation from their expressed standards is almost certain to result in a manuscript's rejection.

The editors, especially those of the major, nationwide publications, can also be very selective in accepting material. Some will reject, out of hand, any offer of material from unpublished writers. However, the editors of many other publications encourage submissions by "new" writers. This is particularly true of newly created, special interest magazines and many of the literary publications, or "little magazines," as they are sometimes called.

For Navy Journalists this preliminary research is made much easier by the valuable assistance of the regional Navy Offices of Information (NAVINFOs) or Public Affairs Centers (PAC). NAVINFOs and PACs are field activities of CHINFO.

IMPORTANT NOTE: Manuscripts written as part of your official duties for civilian magazines *must* be marketed by a NAVINFO. You may send your manuscripts to Navy-produced magazines (such as *All Hands* or *Link*) without NAVINFO involvement, but the aforementioned research rules apply.

Before sending your manuscript to a NAVINFO, you should call or write that activity, explain your story idea, then follow the guidance you receive. The NAVINFO will contact those publications most likely to use a particular story and notify you when and if a market is found.

If the idea has been accepted, you will be notified by the NAVINFO. They will then give you information similar to that contained in the *Writer's Market*, mentioned earlier. Your NAVINFO will give tips on the writing style preferred, advise you on when to submit your material and make suggestions for the length of your manuscript. The NAVINFO will also tell you if a commitment has been made by a magazine's editor to publish your story or if it is to be submitted on speculation.

The NAVINFO deals with the various magazines through correspondence called queries. In this

context, a query is a letter from the writer, or in this case, the NAVINFO, to a magazine's editor. The query briefly describes a proposed article, and if required, contains up to three clips of the writer's previously published articles.

A favorable response to the query most likely will contain specific style tips—a list of do's and don'ts—on writing for that magazine. A large number of publications have their own styleguide booklets that are sent to potential writers. Early in your research of magazines or from the information provided by your NAVINFO, you gained a general insight into the style and editorial content of the magazine ultimately selected. Now you need to begin studying that magazine in earnest. If possible, get three or four different issues and read them thoroughly. Also, study the tips or styleguide supplied by the magazine's editor through your NAVINFO. Observe the character of the language. Note whether it is scholarly or adventurous, technical or general, personal or formal, humorous or serious. You must also look for taboos on subject matter and content. Some magazines will not print slang, for example, and some will not mention their competitors.

When your research is completed, your story idea firmly fixed in your mind and your market clearly identified, you are ready to begin writing.

After having a few articles published by the same magazine, you will develop a feel, or sense, for what that publication wants. Then you will be in a position to work leisurely on manuscripts whenever story ideas occur and you will be able to contact your NAVINFO about ready-to-publish material.

You should also give internal magazines, such as *All Hands*, the same intense study you give commercial publications. Navy internal magazines, like their civilian counterparts, have their own styles. Therefore, contributors, especially Navy Journalists, should be aware of them and prepare their manuscripts accordingly.

While the editors of internal publications are more inclined to edit weak or unstylized copy than their civilian counterparts, you should refrain from making it necessary. You are expected to be a professional and anything other than your best effort reflects poorly on you and your command.

As mentioned earlier, you are authorized to submit articles directly to Navy internal publications in the same manner your command makes routine news releases. You may also deal directly with those

publications while you are developing a story idea, either through the mail or electronically via the Internet. Although a formal query is unnecessary before submitting your manuscript, it never hurts to let the editors know what you are planning.

Outlining Magazine Articles

Whether you are a seasoned writer or a novice, all magazine articles should begin the same way—with an outline. Experienced writers may use rough, written outlines or formulate them in their minds, but beginners are wise to continue using the formal, written method.

An outline is a valuable aid in magazine writing. It helps you organize and evaluate your information and it makes writing an article easier and faster. You should develop, thoroughly, the outline and include all the specific details, explanations and anecdotes that contribute directly to the article you are writing.

Once you prepare an outline, concentrate strictly on the actual writing of your article. You already will know what facts to include and where and how to use them. The basic magazine article outline may be divided into the following five parts:

1. **Purpose.** State the reason or reasons for writing the article and what you intend to accomplish. This sets a course to follow once you begin writing.
2. **Market analysis.** Study surveys that show which magazines are read by the population segment you wish to reach with your article.
3. **Markets.** List the magazines identified in your market analysis that are most likely to publish the article you are planning to write. Follow this up with queries to those publications. (Note: Parts 2 and 3 are performed by a NAVINFO when dealing with civilian magazines.)
4. **Sources.** List the people, reference books, magazines and so forth, from whom or from which you expect to get the information needed for your article.
5. **Plan of development.** List pertinent facts, major areas of coverage, subtitles, anecdotes and so forth, in the order you want to present them.

WRITING A MAGAZINE ARTICLE

LEARNING OBJECTIVE: *Recognize the fundamentals of writing a magazine article and evaluate its components.*

Except for style, most of the rules and information concerning the fundamentals of newswriting presented in chapter 2 of this NRTC also apply to magazine writing. You must be able to recognize the 10 news element categories examined there. The presence and intensity of any of those elements, other than immediacy, determine the newsworthiness of magazine articles as well as news stories. Furthermore, you must apply the “ABCs of Journalism” discussed in chapter 2—accuracy, attribution, brevity (to some degree), clarity, coherence, emphasis, objectivity and unity. You should also understand and follow the guidelines provided under the heading “The Language of Newswriting.”

As the categories of magazine articles overlap, so do the methods of writing used in each. However, a common pattern can be found.

A major element of most articles, one that gives flesh and blood to the story, is the anecdote. An “anecdote” is defined as any specific, short, significant story or incident.

Generally, a magazine article can be divided into four basic components:

- The title
- The lead
- The body
- The conclusion

THE TITLE

The title of a magazine article should tell the readers the nature of the article. It usually features a short, terse statement designed to attract their attention or to arouse their curiosity. The title should entice the audience to read the article immediately.

A title, like the article itself, should be slanted or directed toward a particular market. Each magazine has its own title requirements for style, length and typographical arrangement. Some magazines prefer titles that summarize the information in the article. Others want descriptive titles. Still others prefer titles that make striking statements. And some favor titles featuring questions, quotations, direct appeal or alliteration.

In developing titles for their articles, writers must be honest. They should not mislead the reader with

facts not supported by the articles, and they should avoid exaggeration or sensationalism.

The title should convey the tone and spirit of the material featured in the article. Declarative sentences with concrete nouns and active verbs are best.

If you have not thought of a good title when you begin writing an article, do not worry about it. Few writers title their stories in advance. Usually, the facts will suggest something suitable as you write. Often a strong sentence in your copy will provide the exact title you need.

THE LEAD

The lead of a magazine article is similar to the lead of a news story, except it is usually longer and nearly always more difficult to write. The lead may run only one paragraph in length, or it may run as much as 10 percent of the entire article.

Whatever space you allot to your lead, it must accomplish the following objectives:

- Indicate the central idea to be conveyed in the article.
- Contain a hint of the spirit and movement of the article.
- Locate the subject as to time and place.
- Show any relation that may exist between the facts and the reader.
- Generate enough interest to make the reader want to read the rest of the article.

Leads for magazine articles, like those for news stories, should be written in a manner suitable for the subject matter. The lead is the most important part of a magazine article. If it fails to sustain the readers’ interest, they will not read the article. Therefore, many professional writers spend nearly as much time developing a good lead as in writing the remainder of an article. As trite as the expression may be, a good writer knows that “a story well begun is half done.”

THE BODY

The title of a magazine article attracts an audience’s attention. The lead arouses curiosity, stimulates interest and whets the readers’ appetite for more facts. The body of the article must keep the readers interested.

Keeping your audience interested for two or three thousand words is a tough job. To do this, you must carefully weigh every word, every sentence and every paragraph. The facts you use must be not only interesting in themselves, but they must be presented in an interesting manner.

The body of a narrative or personal experience story is probably the easiest to write. All you have to do is relate the details in the order in which they happened. With this approach, you can depend on the action to hold the readers' interest. However, an article that contains no action and only presents straight, factual information is harder to write. Because the facts themselves are constant restrictions, you must use skill and imagination in presenting them. The facts must flow from the article naturally, without awkward pauses or sudden changes in direction.

In all magazine articles, paragraphs should be written so they interlock. The end of one paragraph should lead naturally into the beginning of the next. Transitions should be used in such a manner that the readers are not even aware of them. The key for you to make the body of the article interesting is in appropriately inserting anecdotes, specific examples and hypothetical situations. These devices help illustrate points and emphasize important facts.

THE CONCLUSION

A magazine article should end as dramatically as it began. When appropriate, use an anecdote that typifies the main points presented in the body. Surprise endings also work well. The conclusion should neatly and succinctly tie together all the threads of the article and bring it to a smooth finish. It should make the readers glad they read the article and leave them with the impression you wanted to make when you stated the article's purpose in your outline.

TIPS ON MAGAZINE WRITING

Along with studying the information presented here, you should read as many magazine articles as possible. Carefully observe how the material in the various types of articles is organized. Be aware of the different styles used in different kinds of magazines when they print similar stories.

Note, especially, the leads written by successful writers. Examine their sentence construction—the manner in which they “turn a phrase.” Then try writing a few leads and short stories of your own. To see which feels most comfortable to you, emulate some of the

techniques of those published writers you have been studying. Experiment! Even with the vast number of magazines available to writers, the market is still highly competitive. The same factors that allow magazine writers to be creative also demand it. Therefore, the ability to write skillfully is essential to your success in this field. And that skill can be developed, through your willingness to learn and your desire to write.

MAGAZINE LAWS

LEARNING OBJECTIVE: *Determine the laws that apply to magazine writing.*

While Navy Journalists are not expected to be legal experts, there are a number of laws that merit your attention.

All writers should be aware of laws concerning defamation, fair comment, the right of privacy, copyright, fair use of the writings of others and plagiarism. This is especially true for magazine writers. The nature of their work makes the possible violation of those laws ever present, and for some, very tempting. Special care must always be taken to avoid these violations.

One area in which you must be particularly cautious is in writing articles containing personal commentary, where a strong possibility of defamation often exists. Another area of concern is in writing articles about people who do not want the attention. In articles of this type, you run the risk of invading someone's privacy. And finally, make sure your research is for information, not for someone else's phraseology. Creative writing means being original. Do not be guilty of copyright infringement or plagiarism. Also, remember that under U.S. copyright laws, **anything you write on government time cannot be copyrighted**. See chapter 10 for further information.

Chapter 10 of this NRTC addresses the subjects of libel, the right of privacy and copyright laws. An understanding of that material will give you sufficient knowledge of those laws and will allow you to write without worrying unnecessarily about them. However, if any doubts or questions arise about those laws, do not hesitate to contact a legal officer for advice.

If you want to write for commercial publications and receive payment for your efforts, you must observe certain rules.

Your writing and research must be done on your own time (after normal working hours or while on leave). It must not interfere or conflict in any way with regularly assigned duties and may not be done in connection with official duties.

Access to information sources, such as public affairs offices, is available to off-duty Navy personnel just as it is to civilian writers. However, you should remember that any use of DON facilities, equipment or personnel is permitted only in connection with official Navy assignments. Additionally, restrictions on access to classified material that apply to non-Navy professional writers apply equally to you if you are writing for a commercial publication on your own time.

Your off-duty magazine writing must not conflict with the public's receipt of prompt and complete information on government activities through the usual public information media. Further, both the subject matter and the methods of obtaining it must be legal and consistent with accepted standards of conduct.

The restrictions on writing for commercial publications in connection with official duties are waived in certain cases for key DON officials. The term *key officials*, in this context, refers to flag rank officers, Navy civilian officials GS-16 or higher, and civilian or military personnel whose official assignments are of unusual prominence or authority. Those individuals may be authorized to produce by-line writings dealing with national defense plans, policies, programs or operations for specific categories of exclusive publications. Their writings may be printed in official DoD publications or magazines of other government agencies, of course. However, they may also be published, exclusively, in company publications (house organs) or commercially produced service journals, bona fide scientific and professional journals, or encyclopedias.

Few businesses are more competitive than the consumer magazine industry. Therefore, a publisher's desire for and insistence on exclusive material are very understandable. The Navy's policy, however, is to avoid favoring one publication over its competitors. It is also Navy policy to make sure all information for the general public is made available through the normally accepted public information media. This policy virtually rules out hard news or "big" stories being written as exclusives by Navy personnel and explains the restrictions on writing for commercial publications.

Still, there are official stories you can write for consumer magazines. You just need to be a little selective.

A newspaper account of a rescue at sea operation, for example, could be turned into an exciting magazine article. Even though all the basic facts had been published at the time, a stylized retelling of the event could produce some worthwhile reading.

An approach of this kind would not conflict with the general public's free access to the information. It is also reasonable for you to assume that such a story, no longer an exclusive, would still be of interest to a number of magazine editors. Numerous story possibilities similar to that one are almost always available if you are willing to look for them.

MAGAZINE REVIEW AND CLEARANCE

LEARNING OBJECTIVE: Determine the methods of obtaining a review and clearance for magazine articles.

While Navy Journalists, as well as other naval personnel, are allowed and encouraged to write for magazines, certain restrictions exist that must be considered. Permission for Navy men and women to write magazine articles is contained in *PA Regs*. Also contained in *PA Regs* are the restrictions in magazine writing, and the exceptions to those restrictions.

The restrictions apply to the subject matter of proposed articles and to dealings with commercial publications. Unless proper clearance is obtained, no commitment will be made to furnish any nonofficial publisher with an official or personal manuscript that deals with military matters or has national or foreign implications. Subject matter of that nature includes, but is not limited to, the following:

- Information of national interest
- Information originated at, or proposed for release at, the seat of government
- Information concerning foreign and military policy, atomic energy, guided missiles, new weapons or chemical, biological and radiological warfare
- Information concerning subjects of potential controversy between the military services
- Material concerning significant policy within the purview of other U.S. government agencies

- Information specially designated from time to time by the Chief of Naval Operations or higher authority, as requiring clearance

Any material about which there is any doubt concerning its security value or propriety should also be submitted for review. Manuscripts requiring review and clearance must be forwarded to CHINFO. The material

for review is to be typewritten, double-spaced, on one side of each sheet of paper and submitted in quadruplicate. Manuscripts on subjects other than those just described may be offered to a publisher without prior clearance from higher authority. However, published copies of magazine articles should be sent to CHINFO for inclusion in DON files.

CHAPTER 5

ADVANCE STORIES, FOLLOW-UPS AND REWRITES

At one time or another in your career as a Navy Journalist, you can expect to find yourself writing an advance story, writing a follow-up, or rewriting a release received from an outside source.

Producing advance stories, follow-ups, and rewrites first requires that you know how to write, and second, that you have a sharp eye for accuracy. You also must have a sound knowledge and background of the subject about which you are writing.

ADVANCE STORY

LEARNING OBJECTIVE: *Interpret the rules and structure of the advance story.*

An advance story calls the public's attention to a coming news event (created news) that would possibly be missed if it were covered as a spot news story. It answers the following questions:

- **What** is going to happen?
- **When** is it going to happen?

Advance stories are used to promote practically every scheduled, major special event. They provide the buildup and support required to attract attention, encourage participation and assure success. Few special events could succeed without the benefit of advance announcements by local media.

Suppose your command was open for public visitation. The event probably would be a complete failure if the public did not know in advance when and where it would occur, what activities were planned, who could attend, and why the public visitation was being held.

RULES

Three important rules for you to remember when writing and releasing advance stories are as follows:

- Do not shoot the whole works in the first story. In a publicity buildup, plan the release of major facts so they may provide good news pegs for later advance stories.

- Do not ruin a good thing. Advance stories must contain legitimate news, not mere publicity puffs. Provide facts that readers will find worthwhile and interesting.
- Do not overexploit an event. Schedule your advance stories over a reasonable period of time, give enough new information in each release to keep your audience interested, but do not bore them with unnecessary repetition. The scope and importance of the event will help determine the time frame required to promote it adequately. Usually, 3 to 4 weeks will be more than sufficient.

STRUCTURE

Table 5-1 shows a typical example of an advance release that might be used to announce an Armed Forces Day public visitation. The first release should contain the bare information essentials. Subsequent releases should elaborate on the basic facts presented in the initial announcement. The actual number of advance stories is determined by what you have to tell. Each story should build up to the next one, with the most important news pegs timed for release during the week of the scheduled event.

Naval Air Station Crevalle will open its gates to the public on Saturday, May 15, in observance of Armed Forces Day.

The announcement was made today by Capt. Rosetta P. Stone, commanding officer of the station. Capt. Stone said the gates will be open to visitors from 10 a.m. to 5 p.m., and the general public is invited to attend. Parking facilities will be available on the station. Special buses are being scheduled for those who wish to use public transportation.

The theme for this year's Armed Forces Day is "The Modern Military Machine." Naval Air Station Crevalle will join with thousands of other military installations throughout the world in highlighting this theme.

The main attraction at the public visitation will be an hour-long performance by the Blue Angels, the Navy's famous flight demonstration team. Also

Table 5-1.—Initial Advance Story Containing the Bare Essentials.

PUBLIC AFFAIRS OFFICE NAVAL AIR STATION CREVALLE PENSACOLA, FLORIDA 32509-4907	TELEPHONE: (904) 452-1736 452-9999 DSN: 922-1736 FAX: 452-1799
FOR FURTHER INFORMATION, CONTACT:	LCDR MARTY MARTIN (PAO) JOC DONNA MELLOW (APAO)
OFFICIAL NEWS RELEASE	
<u>FOR IMMEDIATE RELEASE</u>	RELEASE #5-02
	APRIL 23, 2002
<u>NAVAL AIR STATION TO HOLD PUBLIC VISITATION</u>	
<p>Naval Air Station Crevalle will open its gates to the public Saturday, May 15, in observance of Armed Forces Day.</p> <p>The announcement was made today by Capt. Rosetta P. Stone, commanding officer of the station. Capt. Stone said the gates will be open to visitors from 10 a.m. to 5 p.m., and the general public is invited to attend. Parking facilities will be available on the station. Special buses are being scheduled for those who wish to use public transportation.</p> <p>The theme for this year's Armed Forces Day is "The Modern Military Machine." Naval Air Station Crevalle will join with thousands of other military installations throughout the world in highlighting this theme.</p> <p>The main attraction at the public visitation will be an hour-long performance by the Blue Angels, the Navy's famous flight demonstration team. Also planned are a number of displays and exhibits highlighting the great strides made in the development of naval aviation during the past 80 years.</p> <p>Further details will be announced later.</p> <p>- USN -</p>	

planned are a number of displays and exhibits highlighting the great strides made in the development of naval aviation during the past 80 years.

Table 5-2 shows examples of leads to advance stories following the initial announcement.

FOLLOW-UP STORY

LEARNING OBJECTIVE: *Interpret the purpose, reader considerations and structure of the follow-up story.*

Like advance stories, follow-ups are part of an overall story. In many news situations, there will be important or significant developments in a story already released. These news developments must then be released to update the original story. This method of reporting is referred to as **follow-ups**, which, as the name implies, follow up the facts presented in the initial spot news story.

READER CONSIDERATIONS

In writing a follow-up story, you must consider the following two distinct groups: the reader who has read the original story and the reader who may not have read the original story. Using this consideration as a guide,

your follow-up should be written so as not to bore the former or confuse the latter. You can satisfy the requirements of both readers by using the follow-up story structure explained and diagramed in figure 5-3.

STRUCTURE

As shown in figure 5-1, the follow-up story contains three distinct components—the lead, tie-back and body. These three components form the structure of the follow-up story that is covered in the following text.

Lead

The lead of a follow-up serves the same purpose as the lead in any other story. In a follow-up story, however, make sure your lead contains a fresh news peg, a new angle or an entirely different approach from the one used in the original spot news story to which it is related.

Tie-Back

The tie-back consists of one or two paragraphs located between the lead and the body of the story

Table 5-2.—Subsequent Advance Story Leads.

<p>The Blue Angels, the Navy's flight demonstration team, will provide an exciting hour-long program of thrills and precision flying at the Armed Forces Day public visitation at Naval Air Station Crevalle Saturday, May 15.</p> <p>Flying single-seat F/A-18 Hornets, the Blue Angels have been thrilling fans of Naval aviation. ...</p>
<p>A naval aviation "air museum," consisting of 20 aircraft that have played a major role in Navy history during the past 80 years, will be displayed at the Armed Forces Day public visitation at Naval Air Station Crevalle Saturday, May 15.</p> <p>Included in the air museum will be. ...</p>
<p>The former Secretary of the Navy, Jay A. Hawker, will be the guest of honor at the Armed Forces Day public visitation at Naval Air Station Crevalle Saturday, May 15.</p> <p>Now the president and CEO of the CompuTronics Computer Corporation of Tenaflly, N.J., Mr. Hawker. ...</p>
<p>A display of naval aviation ordnance, including exhibits of the powerful Phoenix missile and other air-to-air and air-to-ground missiles, will be displayed Saturday, May 15, during the Armed Forces Day public visitation at Naval Air Station Crevalle.</p> <p>Capt. Rosetta P. Stone, commanding officer of the air station, believes this Armed Forces Day celebration will be the best in the 55-year history of the air station. "I am very excited about. ...</p>

which contains a brief but clear synopsis of the information presented in the original spot news story. The tie-back is used to refresh the memories of those readers who saw the original story and to update those who did not see it.

Body

The body of the story simply presents details of all new developments in the situation. It is usually written in the inverted pyramid style described in chapter 2.

PRINCIPLES OF REWRITING

LEARNING OBJECTIVE: *Recognize the basic principles of rewriting a story in terms of improving copy, updating the story, transforming informal reports, localizing, combining stories and shifting emphasis.*

The principles of rewriting are the same as those for good newswriting. If a story does not conform to acceptable newswriting standards, it should be rewritten and made to do so. In other words, you take what someone else has written poorly and convert it into usable news copy.

When you are assigned to a command publication, such as a ship or station newspaper, you will find that a certain amount of your material comes from contributors who do not write in journalistic style. Other material comes to you as handouts and from

outside sources, such as clipsheets, naval messages, directives and official correspondence. If you want your publication to contain readable and consistently good material or if you have a local angle and want it to be accepted by commercial news media in your area, it is often necessary to rewrite it.

The following are six basic reasons for rewriting copy:

- To improve poor copy
- To update material
- To transform informal reports into properly written news stories
- To localize general information
- To combine two or more stories
- To change story emphasis

IMPROVING COPY

Often, a person's first attempt at writing a story produces dismal results. Some members of a public affairs office staff may not be thoroughly skilled in the writing craft. Also, material for intended release is often received from other staff offices or departments. These articles frequently need the professional touch of a rewrite reporter. A rewrite reporter organizes a

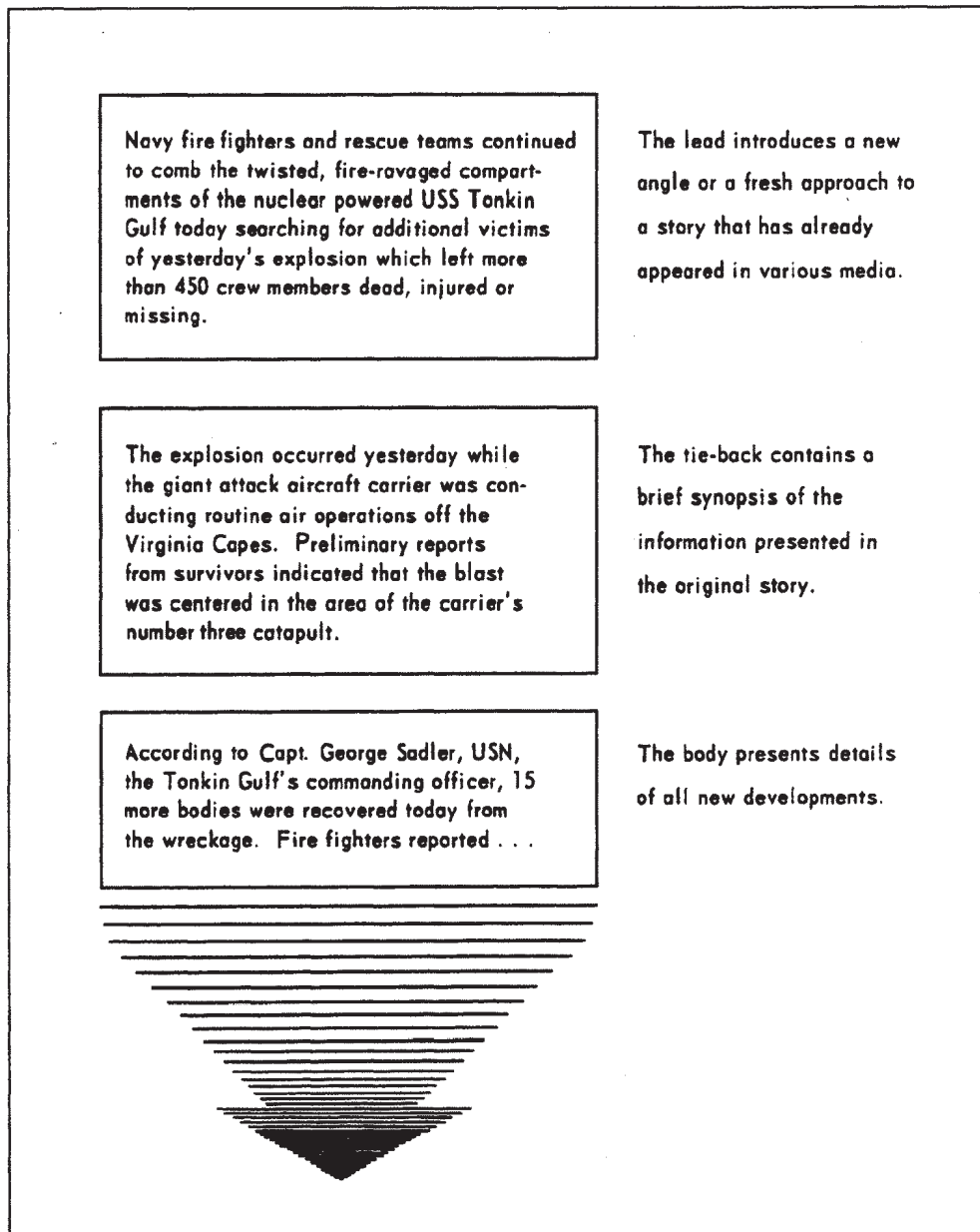


Figure 5-1.—Follow-up story structure.

poorly written, improperly arranged item into a sequentially logical finished product.

A rewrite reporter may have to turn a straight news story into a feature. In this event, the rewriter often needs to acquire additional information and can expect to spend some time on the telephone—or in a face-to-face interview—before a finished product can be turned out.

There are times, too, when the rewrite reporter may have to convert a feature story—or a poor attempt at a feature—into a news story. Therefore, a reporter should be proficient in both types of writing before assuming a rewrite assignment.

One of the most frequent faults of badly written copy is the writer's failure to give ample play in the lead to the dominant news element of the story. The rewriter must dig through the story, find the proper lead, put it at the beginning where it belongs and, finally, organize the remainder of the story in coherent form.

UPDATING THE STORY

Often, the rewriter must update a story that has already been printed. So naturally, this person needs a fresh angle to perform this feat. For example, assume that a military aircraft crashes with three people aboard. Two crewmen are killed and the third is

missing. A story based on these facts would be released as soon as possible. Then suppose the third man is still alive, that he had managed to parachute from the falling airplane, had made his way back to a highway, caught a ride, telephoned the base and reported his experience. The news of a survivor is the fresh angle needed by the rewriter to update the story of the crash.

TRANSFORMING INFORMAL REPORTS

Another reason for rewrite is to turn an informal report, such as telephoned information, into a properly written news story.

Cooperation between the JO in the office and the JO on the scene is important to the Navy, especially during times of fast-breaking news events, such as those experienced during a major accident or a natural disaster.

The initial release in these cases is generally compiled by one person who receives reports telephoned by reporters in the field. To make a single, comprehensive release, the office-bound JO adds background material available in office files and sometimes works with material brought back from interviews by other public affairs personnel.

Other routine news stories are handled in much the same fashion, without the hectic atmosphere and pressure of disaster stories. For example, the command's MWR petty officer may be the public affairs office correspondent for athletic events. That does not necessarily mean the correspondent brings a finished story to the public affairs office, but rather, the correspondent telephones a contact there and reports the details of some sports event, and the JO turns that report into a professional release for local media and the command newspaper.

LOCALIZING

Public affairs offices receive news from a variety of people and places. News releases from the DoD, DON, weapons manufacturers, shipyards, aircraft manufacturers and other outlets provide good sources for outside news. However, this news is usually broad in scope and slanted toward a general market. Therefore, it will require a certain degree of refinement and localization to meet the needs of your local readership.

When these releases are rewritten, the local angle should be introduced in the lead and the more general aspects minimized. For example, suppose you are attached to a naval air station and receive a handout from an aircraft manufacturer stating that a new type of aircraft is in production and will soon be made available to the Navy. The release contains a wealth of unclassified information about the plane and its potentialities.

A little research on your part uncovers the fact that an aircraft squadron at your command will be one of the first squadrons in the Navy to receive and operate the new planes. You can now combine your information with that in the general release—playing up the local aspect—and you will have a story of interest to local readers.

COMBINING STORIES

In the case of combining stories, the rewriter often puts two or more stories together to make one. The combination generally results in a roundup story with the first paragraph carrying a combination lead to emphasize various news developments.

An example might be a combination of the following stories:

- A story is carried in the local paper about a hurricane that struck the area.
- A news release is issued by a nearby naval command citing several men assigned to that activity who aided victims of the disaster.
- Both of these stories, wrapped up with a fresh release about awards for heroism presented to Navy personnel by the mayor of the nearby town, nets the rewriter a multi-interest, highly readable story.

SHIFTING EMPHASIS

In Navy public affairs, it is standard policy to release the **same** story at the **same** time to **all** media. However, you will get better media mileage if you rewrite the same release several times to meet the needs of different media.

Suppose you wanted to get a certain story published in a variety of publications, such as the local papers, *Navy Times*, *Naval Aviation News*, one or more of the trade publications and several individuals'

hometown newspapers. In addition, you think the story is worthy of airtime on radio and television.

Under normal circumstances, you cannot take the time to rewrite the same story several different ways and slant it to the particular needs of different media. Yet there are occasions when this is necessary, if you want to obtain maximum coverage for a special type of story. When this is the case, you will have to keep rewriting the story in the style preferred by each of the different media.

Tables 5-3 through 5-4 show introductions to four different accounts of the same story as published in *Our Navy*, *All Hands*, *Navy Times* and one of several hometown newspapers. Although all the stories concern the rescue of a grounded LST from a coral reef in the Bahamas, note how the story is rewritten each time to present a new approach or to meet the style of the particular publication for which it was intended. Although a certain amount of additional work and effort was necessary, the rewrites resulted in 100 percent coverage.

Table 5-3.—Our Navy Excerpt

COMBINED SALVAGE OPERATIONS

SAVE THE USS LST 291

A modern epic of the sea—unequalled in recent naval annals for sheer endurance and ingenuity—was written early this year near a tiny, coral-studded island in the Great Bahamas. It involved a grounded amphibious force vessel that was rescued from a treacherous coral reef after almost two weeks of relentless and frustrating efforts by ships and men of the Atlantic Fleet.

The salvage operations, which were carried out in the storm-ridden, shark-infested waters off Eleuthera Island, involved a dozen ships, the Navy's top salvage and underwater demolition teams and aircraft that were employed for everything from the evacuation of survivors to the transportation of explosives.

Practically every trick in the Navy's salvage repertoire was used, and many new ones were thought up to cope with the unusual and near-impossible situations that hindered the immediate rescue of the grounded ship.

The curtain went up on this modern epic of the sea about 0300 on 16 March with the Little Creek-based LST 291 churning its way through the dark and murky waters of the Great Bahamas. ...

Table 5-4.—Navy Times Excerpt

TUGS, FROGMEN, TNT

FREE STRANDED LST

NORFOLK, Va. — Eleven days after running aground in the Bahamas, the shored-up LST 291 rode a two-line to Jacksonville, Fla., and the crews of at least eight vessels which helped it off the beach breathed weary sighs of relief.

In the early pre-dawn hours of March 16, the LST was homeward-bound with 118 Marine passengers and the amphibious gear they had used in the maneuvers at Vieques, P.R. Suddenly, it struck a submerged reef off James Pt., Eleuthera Is., Bahamas, and ripped a jagged hole in her hull.

Fifteen minutes after it hit, word was passed to abandon ship. Its passengers and all of its 96-man crew but a salvage detail scrambled ashore. ...

Table 5-5.—All Hands Excerpt

BLASTING THEIR WAY TO SAFETY

One of the more unusual salvage stories of the year is the tale of an LST grounded so fast on a coral reef that frogmen had to blast a 1,000-foot channel to free it.

USS LST 291 was churning its way through the waters of the Great Bahamas after completing two weeks of amphibious training exercises at Vieques, Puerto Rico.

About 1,800 yards off James Point, Eleuthera Island, the crunching of steel and stone shattered the silence of the night. The LST had hit a submerged coral reef. The grounding tore a two-foot hole in the evaporator room and twisted, warped and gashed the heavy steel skin in other parts of the ship's hull.

Water started pouring in through these openings and all of the lower compartments became flooded. Personnel were ordered over the side.

Although the nearest land was less than a mile away. ...

Table 5-6.—Hometown Newspaper Excerpt

DOING NEXT TO IMPOSSIBLE

JUST ROUTINE TO NAVY CMDR

ROBERT K. THURMAN

CMDR Robert K. Thurman, USN, the son of Mrs. R. L. Thurman of Cashmere, is earning high praise and recognition in Norfolk for his abilities as a Navy salvage officer.

His most recent accomplishment as a salvage officer was the rescue of the Landing Ship Tank 291 in the Great Bahamas after it had gone aground on a treacherous coral reef early this year.

With Thurman supervising the salvage efforts, the Navy LST was finally freed after almost two weeks of relentless and frustrating efforts by ships and men of the Atlantic Fleet.

Carried out in the storm-ridden waters off Eleuthera Island, the salvage operations involved a dozen ships, the Navy's top salvage and underwater demolition experts and aircraft that were employed for everything from the evacuation of survivors to the transportation of explosives.

But this was only one of many such operations in Thurman's long and eventful naval career. Other notable achievements for him involved the battleship USS *Missouri* and the military sea transport tanker *Wascissa*.

When USS *Missouri* went aground off Hampton Roads in 1950, Thurman was skipper of the salvage ship USS *Windlass*, which was instrumental in freeing. ...

CHAPTER 6

COPY EDITING

One of the most important and exacting jobs on any publication is that of written copy being given the final professional touch of accuracy. This job of catching and correcting inaccuracies before they can be printed and distributed is called **copy editing**.

Readers may have a high regard for a newspaper that is carefully edited, but they quickly lose respect for one that is sloppy and full of errors.

The copy editor of both civilian and Navy publications represents the last line of defense against incorrect copy reaching the reader. It is the copy editor's job to make sure copy is not printed unless it meets certain standards. The copy editor is the guardian of both style and accuracy. Always on the alert for questionable facts, ambiguous statements and violations of office policy, the copy editor must catch errors in grammar, spelling, syntax, punctuation, capitalization and so forth; cut out words or sentences that are not needed; and add copy when necessary for clarity, emphasis or continuity.

Another responsibility of the copy editor is to restore objectivity to a story in places where a writer may have editorialized, quoted out of context or inserted an opinion without attribution to a source or pertinent authority. Also, the copy editor is constantly alert for statements of a libelous or slanderous nature. (Libel and slander are covered in chapter 10.)

The copy editor of a civilian newspaper has an additional function of assigning headlines for the edited stories. Navy copy editors, unless they are editing stories for use in ship or station newspapers, have no responsibilities in this area. They could hardly be expected to know the styles, formats, and individual editorial needs of all the newspapers that receive news releases from a public affairs office. It is, however, sometimes appropriate to put a brief heading on a story to identify its subject readily.

Like any typical, beginning newswriter, the neophyte JO is dismayed to see his "literary masterpiece" chopped up, pasted back together again and scored with the copy editor's pencil. Nevertheless, two minds are usually better than one. Most experienced writers will admit that the final result,

despite its mangled appearance, is a better piece of writing.

Security is of the utmost importance in the armed forces. The responsibility for security lies with every person who, in any way, handles a story, but the copy editor sometimes represents the last defense against a possible violation. If you have doubts about the security classification of any information you receive, check it with your security officer.

This chapter acquaints you with the standard symbols and style used by the copy editor and explains the procedures, rules and guidelines of copy editing. The basic pattern of news style in this chapter follows the style of *The Associated Press Stylebook and Libel Manual* used by almost all newspapers in the United States.

COPY-EDITING PROCEDURES

LEARNING OBJECTIVE: *Identify the basic guidelines of copy editing.*

Copy editing follows a set system of procedures. To be absolutely accurate, you should read each story in the following manner:

- Read the story quickly to grasp its meaning and note its arrangement.
- Read the story more slowly and more thoroughly to correct every mistake and to add or delete material as necessary.
- Read the story again to check the copy editor's own corrections.

The final check is also intended to make sure that no new errors occurred in copy editing and that the story reads smoothly.

If the story contains too many mistakes and it appears obvious that copy editing will not improve it, the story goes back to the originating JO for rewriting, or in the case of copy received from outside sources, to a rewriter.

PREPARING THE ROUGH

The original copy of a story is known as a **rough** (fig. 6-1). Normally, it is typed double-spaced on only one side of the paper. In general, a JO follows the same format in typing a rough as in preparing a finished Navy news release. It does not have to be as neat, however, and may include penciled-in corrections, additions or deletions, as necessary. The rough obviously does not need the letterhead information usually carried on a release that is ready for dissemination. It is a recommended practice in large

offices for the author's last name to appear on the rough. This, of course, enables the copy editor (usually the PAO or the senior JO) to identify the writer.

USING SYMBOLS

To prepare copy for reproduction in its final form, the copy editor uses a special set of shorthand symbols to indicate any required changes (fig. 6-2).

For example, if the writer forgets to capitalize a letter such as the "M" and "P" in mr. poindexter, the

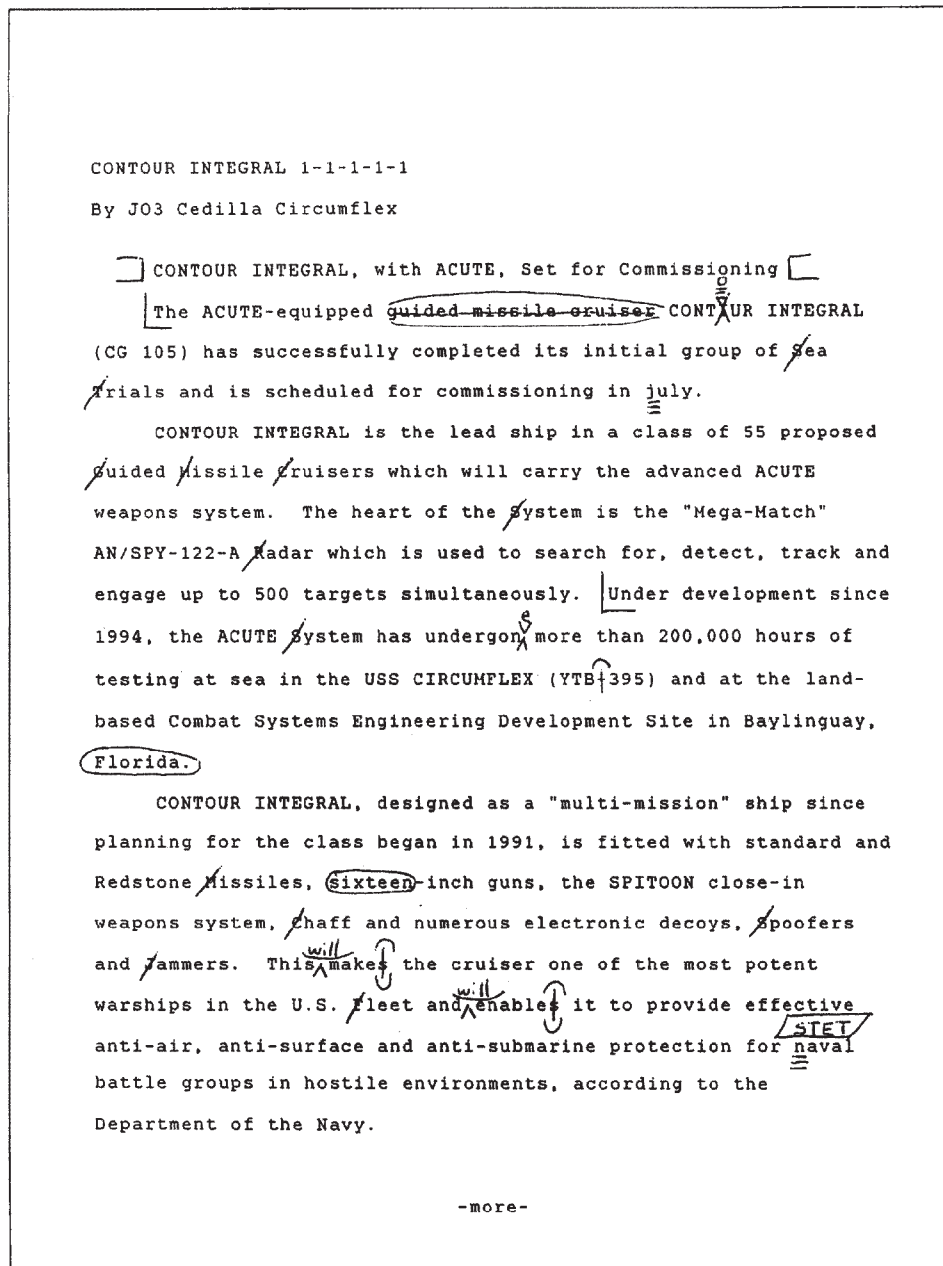


Figure 6-1.—Copy-edited story.

CONTOUR INTEGRAL 2-2-2-2

Recent reports on CONTOUR INTEGRAL in the media have described the ship as "unstable" and "overweight" and as being "unable to keep pace with a battle group." Rear Admiral Lucy Breve, CONTOUR INTEGRAL Shipbuilding Project Manager, termed those reports "absolutely inaccurate." She said, "strength and stability limits are the very foundations of effective warship design." She dismissed the overweight charge, pointing out that the CONTOUR INTEGRAL can tolerate additional displacement in excess of 1,000 tons and will right itself in all sea states. "CONTOUR INTEGRAL," (RADN) Breve continued, "meets or exceeds all Naval Architectural and Operations requirements both for intact stability and (stability) under severe damage conditions."

Recent sea trials confirmed Contour Integral's ability to meet the "top level requirement" ~~of 50 knots per hour speed~~. According to a summary of the tests, conducted in January and again in Mar, the ship exceeded 50 knots, handling high-speed, full-rudder maneuvers with ease. Another criticism called CONTOUR INTEGRAL's SFS-71 Air Search radar "redundant," claiming, "It is not needed as a back-up, nor is there a technical reason to have it on the cruiser." Vice Adm. Roland Coaster, Deputy CNO for Surface Warfare, responded by citing the system's "demonstrated value in air defense."

-more-

Figure 6-1.—Copy-edited story—Continued.

copy editor, using a soft, black lead pencil (the tool of the trade), would inscribe three horizontal lines under each letter that needs to be capitalized. The copy will then appear as follows:

mr. poindexter.

≡ ≡

When the copy is corrected, the copy editor's shorthand indicates that the final work should read as follows:

Mr. Poindexter.

Most of the copy-editing symbols described in figure 6-2 are standard to both the Navy and

commercial media. There will be only minor variations from one newspaper to another. You should learn these symbols and use them to make changes in your own copy and copy others submit to you.

APPLYING BASIC RULES

What follows are the basic rules you should remember when copy-editing stories:

- Use a soft, black lead pencil.
- Make corrections above or within the lines where mistakes occur.

CONTOUR INTEGRAL 3-3-3-3

In a report prepared earlier this year, the navy said, "The introduction of the ACUTE system represents a long-awaited and much-needed step in the development of ~~Naval~~ weapons systems. (CONTOUR INTEGRAL) will ~~bring~~^f assets and capabilities to any ~~Operational Environment~~ from surface action groups to high-threat ~~Carrier Battle Group Operations~~. The ~~ship~~^z will do these things in a proven hull design and with a smaller crew than any ship of comparable size and abilities. It is a ship and a weapon system ~~for~~^z the '90s and beyond."

-end-

Figure 6-1.—Copy-edited story—Continued.

- Place the necessary copy-editing symbols at their correct points of insertion.
- Write legibly. Your longhand corrections will not do any good if they cannot be understood.
- If you want to add a new paragraph to the story, do not write it out in longhand in the margin or on the back of the original story. Type it out and insert it when you are making your corrections.
- After you copyedit a story, you should have a finished product. Any obvious mistakes that slip

by will be attributed to the copy editor, not the writer.

COPY-EDITING ELEMENTS AND USAGE

LEARNING OBJECTIVE: *List the elements applicable to copy editing and identify their usage.*

As a Navy Journalist assigned copy-editing duties, you should always strive for accuracy, rather than speed. You might adopt the slogan, "All I miss, they will print."

SYMBOL MEANING	EDITED COPY	EFFECT
Capitalize	north island	North Island
Make lower case	the commander	the commander
Make caps and lower case	JOHN PAUL JONES	John Paul Jones
Insert letter	his stories	news stories
Change letter(s)	action photo	action photo
Delete letter, close up	typewriter	typewriter
Delete letter, leave space	petty officer	petty officer
Insert word	news photos	news and photos
Change word	record pictures	record pictures
Delete word, close up	news worthy	newsworthy
Delete word, leave space	the men	the men
Insert space	news photos	news photos
Close up	news paper	newspaper
Insert period	the end The	the end. The
Insert comma, colon, semicolon	three four and	three, four and
Insert hyphen	reenter	re-enter
Insert dash	fact for example	fact--for example

SYMBOL MEANING	EDITED COPY	EFFECT
Insert quotes, apostrophe	"We believe..."	"We believe..."
Insert exclamation point, question mark	Wow!	Wow!
Delete punctuation	white and blue	white and blue
Transpose letters	captain	captain
Transpose words	run fast	fast run
Transpose sentences, paragraphs	Apply same principle as above, or circle first item and draw arrow to desired position; note with 1.	
Abbreviate or spell out	Doctor Dr. ninety-two 92 more	Dr. Doctor 92 ninety-two
More of story to come		
End of story	-30-, -end- or -un-	
Not a new paragraph	battle. Sailors are	battle. Sailors are
New paragraph	battle. Sailors are	battle. Sailors are
Correct as written	Jane Austen	Jane Austen
Let it stand as before corrected	the F-14 Tomcat	the F-14 Tomcat
Center in column (heads and subheads)	Navy Day	Navy Day

Figure 6-2.—Copy-editing symbols.

Before you try filling the seat of copy editor, make sure you have a copy of the locally produced stylebook (see chapter 7 of the *JO 1 & NRTC*), as well as a copy of the latest version of *The Associated Press Stylebook and Libel Manual*. Both books are designed to standardize all newswriting and word usage for internal publications and for news releases to civilian media.

The copy-editing guidelines covered in this section are as follows:

- Style
- Editorializing
- Contradictions
- Incompleteness
- Names
- Numbers
- Spelling
- Punctuation
- Capitalization
- Abbreviations
- Military terms
- Religious terms

STYLE

Everyone in your office should be acquainted with the locally accepted stylebook, but it is up to the copy editor to catch any violations of good style.

It is annoying for an editor to pick up a story and find, for example, the word “avenue” spelled out one time, abbreviated as “ave.” a second time and written as “av.” a third time. An office that is careless or inconsistent about little things may eventually become careless or inconsistent about big things. Once a news medium loses respect for you, you might as well close shop. No newspaper will take the chance of publishing sloppy or carelessly prepared material.

Spelling, punctuation, capitalization, abbreviation and other mechanical aspects of grammar are details of writing that have a tremendously important impact on the clarity, readability and effectiveness of your copy. Once your office gets away from using a set stylebook, your news copy will slowly become a hodgepodge of inconsistencies.

EDITORIALIZING

Editorializing happens when a writer consciously or unconsciously expresses doubt, censure or praise in a news story. The only persons permitted to express an opinion in a straight news story are the persons in the story itself. Even then, the opinion quoted must be attributed to the person who gave it.

News stories should be written in the third person. The writer’s personal opinions should **never** be injected into a news story. Facts should be reported as they are found, without personal pronouns referring to the writer.

Editorials are articles in newspapers or magazines in which the views of their editors or those in control of the periodicals are intentionally presented. However, such articles are clearly identified and purposely set apart from the publication’s news and features.

The electronic media also offer editorial opinions, but they, too, take care to keep them separate from their regular newscasts.

Editorials require a very specialized style of writing—the fundamentals of which will not be covered in this NRTC. The focus of this section is the inclusion of personal opinions in your newswriting through carelessness or by design.

Consider the following examples of editorializing in straight news copy, then note the following suggestions offered to eliminate the implied opinions:

Poor: Lt Post is exceptionally well qualified for the position.

Improved: Lt Post, with a degree in law, has eight years of experience as a Navy legal officer.

Poor: An interesting program is planned for tonight at the Officer’s Club.

Improved: Here is tonight’s program at the Officer’s Club.

Poor: The punishment was unjust.

Improved: The U.S. Court of Military Appeals ruled that the punishment imposed by the court-martial was unjust.

CONTRADICTIONS

Sometimes, a writer makes contradictory remarks within a story without realizing it. When contradictions occur, the copy editor should delete them or rearrange

the facts more logically. Note the following four examples of typical contradictions:

Example #1

Robinson's keen sense of responsibility, devotion to duty and hard work, according to his commanding officer, finally paid off May 16 when he was advanced to Illustrator-Draftsman Third Class.

The 16-year veteran is assigned to the aircraft carrier...

If Robinson is such a responsible and devoted worker, why did it take him 16 years to make DM3? The reader will assume that Robinson is not too bright or that the Navy does not reward good men and women.

Example #2

A combat veteran of World War II, the Korean conflict and the Vietnam War, Capt. Garlin wears the American Defense Medal, the World War II Victory Medal, the Navy Occupation Service Medal, the National Defense Service Medal and the National Security Medal.

The captain may be a veteran of three wars, but his medals indicate he has seen no combat.

Example #3

Chief Clayborne began striking for Personnelman aboard the destroyer USS *Mitchel* in 1945.

The Personnelman rating was established in 1948, so Chief Clayborne could not have been a PN striker in 1945. He must have started out in another rating.

Example #4

Despite his 3-15 record and 7.89 earned run average, Bob Baker is considered to be a good pitcher.

Baker's pitching record and ERA speak for themselves. Classifying him as a "good pitcher" is both opinionated and contradictory. The writer would have to do a lot of explaining to justify this comment.

INCOMPLETENESS

As a JO, you should have "news sense"—a quality that tells you which facts to collect and use and which

facts to ignore. But if you do not have this ability or if you lose it momentarily, the copy editor must stop stories that are incomplete or inadequate and return them to you for amplification. This will save you the trouble of answering phone calls from news media representatives who want more detailed information.

Consider the following story, for example:

A Navy ground crewman was killed in an accident at U.S. Naval Air Station Bennington, the Navy announced today.

The man has been identified as George Pine of Chicago, Ill. He was directing a plane from the flight line onto a taxiway when the accident occurred. Bystanders reported that Pine walked into the blades of the spinning propeller. The pilot of the plane was attached to a squadron operating from the aircraft carrier USS *Loach*.

This story is compact and clearly written, but it will not satisfy the demands of the news media. Among other things, they will want to know the following:

- When did the accident occur? The Navy announced the story **today**, but nowhere does it say when the accident actually happened.
- Is there more detailed information on the victim? Readers will want to know his middle initial, age, rate, hometown address and data on his next of kin.
- How did the accident happen? The facts here are too generalized and vague.
- What was the plane doing at NAS Bennington when it was attached to the USS *Loach*?
- What is the name of the squadron, and where is the carrier operating?

A good copy editor should anticipate these questions. With a little copy editing, the story may look as follows:

- A Navy ground crewman was killed by the spinning blades of an aircraft propeller last night at U.S. Naval Air Station Bennington.
- The man was identified as Airman George A. Pine, 20, son of Mr. and Mrs. Andrew S. Pine of 8238 Earwig St., Chicago, Ill.

The accident occurred at 7:45 p.m., Japan time, while the crewman was directing an E-2

Hawkeye from the flight line onto a taxiway during a night exercise.

Pine noticed a flare pot near the plane's right landing gear and signaled the pilot to stop. As he attempted to move the object from the plane's path, he slipped in front of the aircraft and fell into its spinning propeller.

The plane and pilot are attached to Airborne Early Warning Squadron 779, normally based aboard the USS *Loach*. They were participating in night operations at NAS Bennington, while the carrier was docked at Yokosuka.

NAMES

"Names make news," but they also make headaches for the copy editor. Is the man's name **Haufman**, **Hoffman** or **Haufmann**? Did the writer accidentally leave the "h" off the name **Smit**, or is that how the name is actually spelled? How about the name **Frances Jones** in a news story? The writer implies it is a he, but males usually do not spell their names that way.

The names **Pat**, **Carol**, **Marion**, **Jean**, **Gale**, **Merle** and **Terry** can be either male or female. Therefore, the use of such a name without the knowledge of the person's gender could lead to some embarrassing situations. And what do you do when you run across a name like Stanley Wozniawirsbinski? You may not be able to pronounce it, but you had better make sure that it is spelled correctly.

To eliminate confusion for the typist or word processor when a name like Ppandrowske or Wozniawirsbinski is correct as written, simply draw a box around the odd but properly spelled name, as shown in figure 6-2.

NUMBERS

"Numbers do not lie," but a good copy editor frequently proves them wrong. Always be wary of numbers involving money, ages, dates, addresses, distance, performance records, statistical data and other compilations. If a number looks questionable, always refer it to the writer for verification.

A BM1 may be only 23 years old, but most likely he is 32. A seaman whose age is listed as 42 may really be 24. The JO who wrote the story may have hit the wrong keys on the keyboard. Another story says that

ET1 Jack Kelly was married four years ago. However, his children are mentioned and their ages are listed as 7 and 9. Readers will want to know why.

The beginning of a story may say that seven men were killed or injured in a plane crash, yet the casualty list may contain the names of only six. Readers will want to know what happened to the seventh name. A story may announce the opening of a new commissary on Monday, January 18. A check with your calendar, however, indicates that Monday, January 18 is Martin Luther King Jr. Day, and commissaries are not normally open on federal holidays.

Watch for the logic in statistical data. Double-check league standings to be sure the numbers of wins and losses balance. Do not use postal box numbers for addresses. People receive their mail in boxes. However, they do not live in them.

In general, spell out all numbers from one to nine, and use numerals for 10 and above. Numerals are used exclusively in tabular and statistical matters, records, election returns, times, speeds, latitude and longitude, temperatures, highways, distances, dimensions, heights, ages, ratios, proportions, military units and dates. Fourth of July and July Fourth are exceptions as are Fifth Avenue, Big Ten and Dartmouth Eleven.

Times are 6:30 p.m. Monday or 6:30 Monday evening. **Never** use 6:30 p.m. Monday evening. Evening and p.m. are synonymous.

In a series of numbers, apply the appropriate guidelines: There are three 10-room houses and 40 four-room houses in the development. He has six suits, 14 pairs of shoes, but only one tie.

Casual numbers such as in the following examples are spelled out: A thousand times, no! Gay Nineties. Wouldn't touch it with a ten-foot-pole. However, numerals are used when using an exact measure as in the following example: The flag hung from a 10-foot pole.

Spell out fractions when used alone as in this example: Three-quarters of a mile. For amounts more than one, use numerals as follows: Her shoe size is 6 1/2. Convert to decimals whenever practical.

For further information, consult the latest edition of *The Associated Press Stylebook and Libel Manual*.

SPELLING

If you think you know how to spell well enough to get along without a dictionary, try spelling the

following 10 words (chances are, you will misspell a few of them):

- inoculate or inoculate
- embarrass or embarrass
- supercede or supersede
- larynx or larynx
- interfered or interfered
- indispensable or indispensable
- liaison or liaison
- diphtheria or diphtheria
- harass or harass
- accommodate or accommodate

If you selected inoculate, embarrass, supersede, larynx, interfered, indispensable, liaison, diphtheria, harass and accommodate as the correct spelling, throw away your dictionary. But, if you misspelled one or more words start using your dictionary regularly. These are only 10 examples of troublesome words in the English language. Of course, there are thousands more. Undoubtedly, you have your favorites when it comes to misspelling words. So, compile your own list of frequently misspelled words and start eliminating them from your list.

In mastering words, there are certain basic rules for spelling that will help you. Unfortunately, for every spelling rule there are numerous exceptions. Some spelling rules have so many exceptions that they can just barely be classified as rules. Your computer has a dictionary and thesaurus. Do not tell it to accept an incorrectly spelled word as correctly spelled. The point to remember is that your printed dictionary is the final authority.

The most useful of the spelling rules and some examples and exceptions are listed below:

1. When a one-syllable word or a longer word that keeps the accent on the last syllable ends in a single consonant preceded by a single vowel, double the final consonant before adding a suffix beginning with a vowel.

Examples:

- a. Clan, clannish
- b. Plan, planned, planning
- c. Control, controlled

- d. Refer, referring—but, reference (because the accent has shifted away from the last syllable of the basic word)
- e. Occur, occurred, occurrence

2. Words ending in a silent *e* generally retain this *e* before a suffix beginning with a consonant. When the suffix begins with a vowel, the silent *e* is usually dropped.

Examples:

- a. Excite, excitement; late, lately
- b. Tide, tidal; shape, shaping

3. When the final sound of the word is a soft *c*, *g* or *ng*, the final *e* is retained before some suffixes beginning with vowels.

Examples:

- a. Peace, peaceable
- b. Advantage, advantageous; courage, courageous
- c. Change, changeable, but changing

4. Words ending in *y* preceded by a consonant usually change the *y* to *i* before a suffix. Words ending in *y* preceded by a vowel do not change the *y* before a suffix.

Examples:

- a. Icy, iciest; mercy, merciless; modify, modifies, modifiable; pity, pitiable, pitiful
- b. Obey, obeying; joy, joyful, joyous

5. When the sound is *c*, remember the rhyme, “*i* before *e* except after *c* ...”

Examples:

- a. Believe, belief, relieve, relief
- b. Receive, conceive, perceive, conceit

Exceptions:

Weird, seize, neither, leisure, financier, inveigle.

- 6. The previous rhyme ends “... or when sounded as *a* as in neighbor or weigh.”
- 7. Verbs ending in *ie* generally change *ie* to *y* before *ing*.

Examples:

Die, dying; lie, lying

Learning to spell is more a matter of establishing a correct image of each word than of applying rules. Usually the image is a visual one. Knowing the correct pronunciation often helps, but in the English language we have many words for which pronunciation is no guide to spelling (e.g., duty, beauty, grew, blue), so we must rely on the way the word looks. While you are looking up an unfamiliar word, make an effort to fix its spelling in your mind along with the meaning and pronunciation.

PUNCTUATION

Punctuation in writing serves the same purpose as voice inflection in speaking. Proper phrasing avoids ambiguity, ensures clarity and lessens the need for punctuation.

Period

The period (.) serves the following functions as shown in each example:

- To mark the end of a sentence

Example: Close the door.

- To accentuate most abbreviations

Examples: U.S., c.o.d.

- To separate integral and decimal numerals

Examples: 3.75 percent, \$3.75, 3.75 meters

Ellipsis

The ellipsis (...), three periods and two spaces, is used for the following functions as shown in each example:

- To indicate omitted material

Example: "I pledge allegiance to the flag ... and to the Republic. ...")

Comma

The comma (,) serves the following functions as shown in each example:

- To separate various elements within a sentence and to indicate a slight pause

Examples: When lightning struck, Bob Smith fainted. When lightning struck Bob, Smith fainted.

- To separate clauses

Example: They fought the battle, but no one won.

- To separate a series

Example: Neither snow, rain, nor heat ...

- To set off attributions

Example: "The work," he said, "was exacting and satisfying."

- To set off apposition or contrast

Example: Wilson, the favorite, won handily.

As used in the following examples, the comma is omitted before Roman numerals, Jr., Sr., the ampersand (&), the dash, in street addresses and Social Security numbers.

Examples: Louis XIV, Joe James Jr., Smith & Co., 54321 Pine St., 123-45-6789.

Newspaper usage has, in most cases, eliminated the comma before "and" and "or" in a series, but a comma is still required before "and," "or" and other conjunctions in compound sentences. Note the following example:

Example: Fish abounded in the lake, and the shore was lined with deer.

Semicolon

As used in the examples that follow, the semicolon (;) separates phrases containing commas to avoid confusion, separates statements of contrast and statements closely related.

Examples: The party consisted of E. E. Wright; R. J. Kelly, his secretary; Mrs. Jordan; Martha Bowen, her nurse; and three accountants. (Without the semicolons, that could read as nine persons.) The draperies, which were ornate, displeased me; the walls, light blue, were pleasing. Yes; that is right.

Colon

As used in the following examples, the colon (:) precedes the final clause and summarizes previous material; introduces listings, statements and texts; marks discontinuity; and takes the place of an implied "for instance."

Examples: States and funds allotted were as follows: Alabama -\$6,000, Arizona- \$14,000. The question came up: What does he want to do?

The colon also is used in the following manners and examples:

- In clock time

Examples: 9:20 p.m., 10:30 a.m.

- In Biblical and legal citations

Examples: Matt. 2:14, Missouri Statutes 3:234-432

Question Mark

The question mark (?) follows a direct question. Occasionally, it is used to indicate uncertainty, as with some dates or identifications. In the latter use, it is enclosed in parentheses. Note the following examples:

Examples: What happened to Dean? Columbus, an Italian (?) sailing for the Spanish crown, discovered America ...

Exclamation Point

The exclamation point (!) is used to indicate surprise, appeal, incredulity or other strong emotion as in the following examples:

Examples: You are wonderful! What! He yelled, "Help!"

Apostrophe

The apostrophe (') indicates the possessive case of nouns, omission of figures and contractions. Usually, the possessive of a singular noun not ending in "s" is formed by adding the apostrophe and the "s" as in the example that follows:

Example: The boy's ball, but the boys' bats.

The apostrophe is used in the following instances and examples:

- After plural possessives

Examples: the girls' coats; the marines' rifles.

- In contractions

Examples: I've, isn't, don't.

- In omission of figures

Examples: '90s, Class of '22.

The "s" is omitted and only the apostrophe used in "for conscience's sake" or in a sibilant double or triple "s" as Moses' tablet.

As in the following examples, the apostrophe is **not** used to form plurals unless it is in the context of the exception shown:

Examples: MiGs, P-3s, B-52s, ABCs.

Exception: When a single letter is made plural, as in "mind one's p's and q's," the apostrophe is required.

Quotation Marks

Quotation marks (" ") enclose direct quotations, phrases in ironical uses, slang expressions, misnomers and full titles of books, plays, poems, songs, lectures, speeches, hymns, movies, television and so forth.

As in the next example, use quotation marks around nicknames when a person's full name is used.

Example: Paul "Bear" Bryant.

Note the following examples in which the comma and period are placed inside the quotation marks. Other punctuation is placed inside quotation marks only when it is part of the matter quoted.

Examples: Why call it a "gentlemen's agreement"? He asked, "Is the interview completed?"

Parentheses

Parentheses () serve the following functions as shown in each example:

- To set off material not intended to be part of the main statement or that is not a grammatical element of the sentence, yet important enough to be included

Examples: It is not customary (at least in the areas mentioned) to stand at attention. "That proposal," he said, "and one by (Prime Minister John) Major are being studied."

- To facilitate further identification that is not part of the official name

Example: The Springfield (Virginia) Historical Society.

- To set off letters or figures in a series

Examples: The order of importance will be (a) general acceptance, (b) costs and (c) opposition. The water is (1) tepid, (2) muddy from silt and (3) unpalatable.

Dash

As shown in each example, the em dash (—) is used in the following cases:

- To indicate a sudden change and interjection

Examples: The commander—do you know who I mean?—approved it. If that man gains control—God forbid —our troubles will have just started.

- After a dateline and before the first word of a story

Example: NEW YORK—Five people were injured. ...

Note that a dash consists of two strokes of the hyphen (or minus sign) key on your computer keyboard.

Hyphen

The hyphen (-) is used to separate compound words, figures, abbreviations and figures, double vowels in some cases and to divide a word at the end of a line.

The general rule for hyphens is that “like” characters take the hyphen; “unlike” characters do not. Note the following examples:

Examples: Secretary-Treasurer (compound word); 20-20 vision (figures); bell-like (use a hyphen to avoid tripling a consonant).

Other uses of the hyphen and examples are as follows:

- Adjectival use of hyphens must be clear.

Examples: The 6-foot man eating shark was killed (the man was). The 6-foot man-eating shark was killed (the shark was).

- Ordinarily, in prefixes ending in vowels and followed by the same vowel, the hyphen is used.

Example: pre-eminent. (Check dictionary for exceptions such as cooperate, coordinate, etc.)

- The hyphen also serves to distinguish between meanings of similarly spelled words.

Example: recover (from illness), re-cover (couch).

- The hyphen separates a prefix from a proper noun.

Examples: un-American, pre-Christian era.

Do not use a hyphen between “vice” and “president” or other such titles, or with adverbs ending in “ly.” Note the following examples:

Examples: badly damaged car, fully informed public, newly elected official.

CAPITALIZATION

In newswriting, capitalization is correct in the following cases, examples and exceptions:

- The first word of a sentence

Example: Good grammar is essential.

- Titles and ranks (rates) followed by a proper noun, but lowercase titles standing alone or following a name

Example: Secretary of State C. R. Dryden, but C. R. Dryden, secretary of state.

Exception: The President of the United States is always capitalized.

- Pope and the titles of foreign religious leaders, when used as a formal title before a name, but lowercase when titles stand alone or follow names

Exception: Dalai Lama is capitalized in all usages, since that title is used instead of the name of the person holding that office.

- Months and days, but not seasons

Example: Last summer our vacation began on the first Thursday in August.

- All holidays, historic dates, religious holidays, special events, military exercises, hurricanes and typhoons

Examples: Christmas, Father’s Day, Washington’s Birthday, National Safety Week, Operation Desert Storm, Typhoon Gay, Hurricane Andrew.

- All proper nouns or names

Examples: Marty Martin, Bangkok, Hudson River.

- All names of countries and their languages, unions, republics and colonies

Examples: He learned to speak French in France. India is a former British colony. Other examples are Union of South Africa and Republic of Korea.

- Specific regions

Examples: Middle East, Midwest, Southern California, Panhandle, Arctic Circle but lowercase antarctic or arctic in reference (arctic wind).

- Appellations

Examples: Buckeye State, Leatherneck, Project Apollo.

- All decorations and awards

Examples: He was awarded the Medal of Honor. His father received the Nobel Peace Prize. She was awarded the Navy Marine Corps Achievement Medal for professional achievement.

- All nouns referring to the deity of all monotheistic religions

Examples: God the Father, Holy Ghost. Also capitalize Satan and Hades, but not devil or hell. Lowercase gods and goddesses in reference to the deities of polytheistic religions.

- Names of races

Examples: Indian, Chinese, Caucasian. Lowercase yellow, white, black. (Identification by race should be made only when it is pertinent.)

- The first letter of each word, except articles, conjunctions and short prepositions that are not the first word, in titles of books, plays, hymns, poems and songs

Examples: “All the Ships at Sea,” “Damn Yankees,” “O” Come All Ye Faithful.”

- U.S. government and state government agencies, branches, committees and departments when the full name is used

Examples: Federal Communications Commission, Interstate Commerce Commission. In addition, always capitalize U.S. Congress and U.S. or state Senate, House and Legislature when referring to a specific body.

Examples: the Florida Senate, the Texas Legislature and the Senate, when clear reference is made; the word government, when used alone or with an adjective, is lowercased.

Example: She works for the government.

- Ideological or political areas

Example: East-West relations are at a stalemate. Use lowercase when referring to direction. **Example:** Some say the western part of Florida has nicer beaches than the eastern part.

- Names of organizations, expositions and so forth

Example: The Boy Scouts will visit the World’s Fair. Lowercase “scout” and “fair” when they are standing alone.

ABBREVIATIONS

To abbreviate is to make a word or phrase shorter by leaving out or substituting letters. Some military and civilian terms are so long that abbreviation is almost a must. However, always spell out the name of organizations or groups on its first use. If a name does not have a commonly known abbreviation, the abbreviation should be parenthesized after the first spelling. Thereafter, you may use just the abbreviation as in this example: The guidelines of the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS) have changed. ...

The abbreviations that follow and those used throughout this training manual are basically those standardized for civilian and military newswriting by The Associated Press.

In newswriting, abbreviate the following and note the examples of each:

- Time zones, aircraft and ship designations, distress calls, military terms and so forth

Examples: EDT, MiG-17, SOS (but May Day), USS *John F. Kennedy*, SS *Virginia*.

- Business firms

Examples: Warner Bros., Brown Implement Co., Amalgamated Leather, Ltd. If “and” is in the firm name, use the ampersand (&).

Examples: Sims & Sons, AT&T.

- Street, avenue, boulevard and terrace in addresses when using a numerical prefix, but not point, port, circle, plaza, place, drive, oval, road or lane

Examples: 30 E. 28th St. (single “E” with period), 16 Quentin Ave. NW (no periods in “NW”), 27 Sunset Blvd., but Main Street, Fifth Avenue and so forth

- Versus to read vs. (with period)
Example: The case of Johns vs. New York.
- Most states when used with cities, towns, bases, Indian agencies and national parks
- **Examples:**

Ala.	Ill.	Miss.	N.C.	Vt.
Ariz.	Ind.	Mo.	N.D.	Va.
Ark.	Kan.	Mont.	Okla.	Wash.
Calif.	Ky.	Neb.	Ore.	W.Va.
Colo.	La.	Nev.	Pa.	Wis.
Conn.	Md.	N.H.	R.I.	Wyo.
Del.	Mass.	N.J.	S.C.	
Fla.	Mich.	N.M.	S.D.	
Ga.	Minn.	N.Y.	Tenn.	

Do not abbreviate Alaska, Hawaii, Idaho, Iowa, Maine, Ohio, Texas or Utah. Never abbreviate the name of states when they are used alone.

- Names of provinces and territories are set off from community names by commas, just as the names of U.S. states are set off from city names

Example: They went to Halifax, Nova Scotia, on their vacation.

- United Nations and United States when used as adjectives, but spell them out when used as nouns. In texts or direct quotations, U.S.A., U.S. and U.N. may be used as nouns

Examples: He is a former U.S. Olympic champion. She is a member of the U.N. Educational, Scientific and Cultural Organization (UNESCO). While visiting the United States, she toured the United Nations Building in New York. “When last I was in the U.S.A., the U.N. was in its infancy.”

- All religious, fraternal, scholastic or honorary degrees and so forth, but lowercase when spelled out

Examples: J. J. Jones earned his bachelor of science degree at Princeton. J. J. Jones, Ph.D., will be guest speaker at 2 p.m. tomorrow.

- Titles (and capitalize) Mr., Mrs., Mlle., Dr., Prof., Sen., Rep., Dist. Atty., Gov., Lt. Gov., Gen., Supt. and so forth, when they appear before names but not after

Examples: He introduced Lt. Gov. J. F. Petty. J. F. Petty, the lieutenant governor, will arrive at 10:15 a.m. In first and subsequent references and in group names, use “Miss” before the name of an unmarried woman and “Mrs.” before the name of a married woman, or “Ms.” if preferred by the individual. **Example:** Those attending were, Miss Alice Jones, Mrs. Helen Jones and Ms. Gladys Jones.

- Months when used with dates, but spell out otherwise

Example: The battle started Oct. 10, 1967, and ended in January 1968. Abbreviations for months are Jan., Feb., Aug., Sept., Oct., Nov., Dec. Do not abbreviate March, April, May, June or July **except** when used in tabular or financial routine; then use Mar., Apr., Jun. and Jul. and spell out May.

- Mount when referring to a mountain but spell out when referring to a city

Examples: Mt. Everest, Mount Vernon, N.Y.

- Fort when it is an Army post, but spell out when it is a city

Examples: Ft. Sill, Fort Lauderdale, Fla.

In the following cases, **do not** abbreviate and note the accompanying examples and exception:

- Days of the week except in tabular or financial matters. In these cases use Mon., Tues., Wed., Thurs., Fri., Sat., Sun.

- First names unless the person does

Examples: William, not Wm.; Frederick, not Fred; Benjamin, not Benj.

- Measurements—the one exception to this rule is the word millimeter, which may be abbreviated as mm (no space) when used with a numeral in first or subsequent references to film or weapons. Miles an hour and miles per hour are abbreviated in subsequent reference only and must have a numerical prefix

Examples: He used a 35mm camera. She was driving 60 miles an (per) hour but slowed down to 30 mph in the housing area.

- Port, association, point, detective, department, deputy, commandant, commodore, field marshal, secretary-general, secretary or treasurer

- Christmas or use Xmas
- Cities

Exception: Saint is abbreviated to St., when it is part of a city name. **Example:** St. Augustine, Fla.

These well-known cities are used without a state suffix:

Atlanta	Houston	Philadelphia
Baltimore	Indianapolis	Phoenix
Boston	Las Vegas	Pittsburgh
Chicago	Los Angeles	St. Louis
Cincinnati	Miami	Salt Lake City
Cleveland	Milwaukee	San Antonio
Dallas	Minneapolis	San Diego
Denver	New Orleans	San Francisco
Detroit	New York	Seattle
Honolulu	Oklahoma City	Washington

MILITARY TERMS

One of the chief complaints of civilian editors concerning military journalism is the excessive use of abbreviations for titles and organizations. In the majority of cases, most people within a particular service will know most of its standard abbreviations. However, many will not know them all, particularly family members, visitors and new service personnel.

Titles and organizational designations should always be spelled out in the first reference —except those that are so well known that it would be a definite waste of space.

All foreign services should be lowercased and spelled out; for example, French army. Military jargon and colloquial expressions should be avoided unless they are used in proper context or direct quotes. When possible, eliminate abbreviated terms to differentiate between a professionally written news article and a set of travel orders. Some examples of military abbreviations that you should not use in news stories include the following:

- TAD (temporary additional duty)
- R&R (rest and recreation)
- RON (remain overnight)
- OOD (officer of the day (deck))
- PCS (permanent change of station)

When you refer to members of a particular service, use the following collective terms:

- Soldier (a member of the U.S. Army)
- Sailor (U.S. Navy)
- Marine (U.S. Marine Corps)
- Airman (U.S. Air Force)
- Coast Guardsman (U.S. Coast Guard)
- Guardsman (Army or Air National Guard)

For military rank and title abbreviations, by service, consult the latest edition of *The Associated Press Stylebook and Libel Manual*.

Thousands of doctors, nurses, veterinarians, dentists, chaplains and lawyers serve the military in their respective professional capacities. As such, they should be identified in news stories by their profession. This identification should be made in the first reference. Note the following examples:

Examples: Capt (Dr.) Joe Johns of the Portsmouth Naval Hospital conducted ... Cmdr. Edna Knox, Navy Nurse Corps, told medical authorities ... Maj. (Dr.) Larry Riley, a veterinarian, stressed the importance ... Navy Chaplain (Cmdr.) John Frisby will preside over ... (**Note:** A chaplain's rank is enclosed in parentheses. In the previous example, subsequent references would be Chaplain Frisby.)

Lawyers are not identified by profession in the military service per se. However, in all possible cases, they should be referred to in relation to their role in the story. Consider the following example:

Example: Coast Guard Lt. Henry Smith, the defense attorney (trial lawyer, staff judge advocate, etc.), a member of the Maryland Bar Association, moved for a dismissal of the charges.

In many cases, news stories require the use of a person's service in addition to name and rank, particularly in joint maneuvers. When this occurs, place the service identifier before the rank and name as in the following examples:

Examples: Navy Capt Rob Rogers; Coast Guard Lt Jim King; Air Force Maj. Richard Johnson. (The "U.S." before Army, Navy, Air Force, Coast Guard or Marine Corps is optional unless tied in with foreign dissemination.)

Women, military as well as civilian, should receive the same treatment as men in all areas of news coverage. Never use sexist references, demeaning

stereotypes and condescending phrases in reference to women. The same standards for men and women should be used in deciding whether to include specific mention of personal appearance, physical description or marital and family situation.

As in the following examples, aircraft, ships and other military equipment should be identified by popular name and model designation.

Examples: The Air Force Lockheed C-141 *Starlifter* flew. ... Each soldier carried an M-79 grenade launcher. ... The aircraft carrier USS *Lexington* (AVT 16), “Lady Lex,” was opened as a floating museum. ...

RELIGIOUS TERMS

There is only one way to refer to confessions of faith, their members and officials—the correct way. While general usage and correct titles of some of the faiths are listed below, many are not. When in doubt, consult your chaplain’s office. Members of communions of the National Council of the Churches of Christ in the United States of America (official title, which may be shortened to National Council of Churches) are as follows:

African Methodist Episcopal Church
African Methodist Episcopal Zion Church
American Baptist Convention
American Lutheran Church
Antiochian Orthodox Christian Archdiocese of North America
Armenian Church of America
Christian Church (Disciples of Christ)
Christian Church of North America, General Council
Christian Methodist Episcopal Church
Friends United Meeting (Five Years Meeting)
Greek Orthodox Archdiocese of North and South America
Hungarian Reformed Church in America
Moravian Church
National Baptist Convention of America
National Baptist Convention U.S.A. Inc.
Orthodox Church in America
Polish National Catholic Church of America

Presbyterian Church in the U.S.
Progressive National Baptist Convention Inc.
Protestant Episcopal Church
Romanian Orthodox Episcopate of America
Seventh-Day Adventist
Southern Baptist Convention
Ukrainian Orthodox Church of the U.S.A.
United Church of Christ
Lutheran Church in America
United Methodist Church
United Presbyterian Church in the U.S.A.

Other communions include the following:

Churches of Christ
Church of Christ, Scientist
Church of Jesus Christ of Latter-day Saints
Jehovah’s Witnesses
Religious Society of Friends
Roman Catholic Church
Unitarian Universalist Association

Jewish groups include the following:

Union of American Hebrew Congregations
Union of Orthodox Jewish Congregations in America
United Synagogues of America

Rabbinical groups include the following:

Central Conference of American Rabbis
Rabbinical Assembly of America
Rabbinical Council of America
Union of Orthodox Rabbis of the United States and Canada

The Synagogue Council of America represents both the congregational and rabbinical groups of Orthodox, Reform and Conservative Judaism. Their places of worship are temples or synagogues. The generic term is Jewish house of worship.

In general written reference to a member of the clergy, use the following: the Rev. John Smith, or the Rev. Mr. Smith. Do not use Rev. without Mr., Miss, Mrs., Ms., a first name or initials. A chaplain is

referred to as a chaplain with his rank following in parentheses on the first usage. Note the following examples of the correct use of titles:

Example: Chaplain (Lt.) John Smith ... then, Chaplain Smith.

The title “Dr.” is used only when the doctorate degree is actually held.

Examples: the Rev. Dr. Betty Johns; Dr. Johns; The Rev. Betty Johns, D.D. (Doctor of Divinity).

Roman Catholic usage: the Rev. Joe Jones; Father Jones; the Most Rev. Joe Jones, bishop of the Denver Diocese; Bishop Jones; Francis Cardinal Jones; Cardinal Jones.

A nun is addressed as “sister,” which is capitalized in all references before her name. When a surname is given in the first reference, use both given name and surname (Sister Mary Elizabeth Smith); and in subsequent references, use only the surname (Sister Smith). When the surname is not provided, the name is the same in all references (Sister Mary Elizabeth). Do not abbreviate the word “sister.”

Episcopal usage: A priest is referred to as the Rev. John Jones or the Rev. Mr. Jones. A dean is the Very Rev. John Jones, the Rev. Jones, Mr. Jones or Dean Jones. A bishop is the Rt. Rev. John Jones, the Rt. Rev. Mr., or Bishop Jones. A member of the Episcopal Church is an Episcopalian.

Jewish usage: Rabbi John Goldstein, Rabbi Goldstein, Dr. Goldstein (where degree is held). Cantor John Goldstein, Cantor Goldstein. Never identify a rabbi as Reverend Doctor.

Christian Science usage: Practitioner, Lecturer, Reader Joe Jones. Never “reverend” in any form. Reader Jones of the First Church. The Mother Church (Boston church only).

Methodist usage: Pastor, minister, preacher, bishop. Use of the Rev. Mr. Jones is acceptable.

Lutheran usage: In the United States—Pastor John Jones, Pastor Jones, Mr. Jones. Scandinavian Lutheran usage follows the Episcopal forms.

Latter-Day Saints (Mormon) usage: President John Jones, President Jones, Elder Jones, Presiding Bishop John Jones, Bishop Jones, Presiding John Jones of the Presiding Bishopric. Members of the church are Mormons.

It is incorrect to apply the word church to any Baptist unit except the local church. The organization of Southern Baptists is the Southern Baptist Convention.

The American Lutheran Church, the Evangelical Lutheran Church and the United Evangelical Lutheran Church merged in 1960 into the American Lutheran Church with headquarters in Minneapolis, Minn.

Unitarian and Universalist denominations are known as the Unitarian Universalist Association.

There are other faiths that have mosques, dioceses, archdioceses, areas, synods, presbyteries, and so forth. If in doubt, you should consult your chaplain’s office for the accurate designations and changes.

COMMON SENTENCE STRUCTURE ERRORS

LEARNING OBJECTIVE: *Recognize the common errors in sentence structure.*

The sections on spelling, capitalization and punctuation have all contributed to the construction of good sentences. However, to be effective, sentences must be grammatically correct. In addition, they should be well-chosen and effectively combined with a goal of clarity, emphasis and interest. These goals are often thrown off target by any one of a variety of common errors in sentence structure.

SENTENCE FRAGMENTS

In terms of grammar, writers are frequently at fault for writing incomplete sentences. For a sentence to express a complete thought, it must contain two necessary parts—a subject and a predicate or verb. It is possible, of course, for the subject to be understood, rather than stated, but you should be sure in such cases that it is clearly implied.

Some examples of incomplete sentences include the following:

- The sightseeing tour, which was arranged for the liberty party. (There is no main verb. The relative clause has a verb, “was arranged,” but what appears to have been intended as a statement with “sightseeing tour” as subject has not been completed.)
- A tall, thin man with owlsh spectacles and a bald head. (The verb is omitted.)

- Floated toward the beaches. (Here the subject is omitted. What floated?)
- Just as the searchlight swept across the harbor. (This tells when something happened, but the main statement is still incomplete.)
- Bailey, the new striker, looking as if he would burst with pride. (There are modifiers here for the subject, “Bailey,” but no main statement about that individual.)

Often an incomplete sentence results from the writer’s failure to recognize that a modifying phrase or clause is really part of the preceding sentence. For instance, a comma should be used instead of the first period in the following example:

- The cruiser was headed for the canal zone.
Steaming eastward through the Caribbean.

The result in this case is one complete sentence instead of a sentence followed by a fragment.

You should not be misled by the fact that some writers deliberately construct incomplete sentences at times. As the late Emily Post once said about etiquette: “Well-bred persons sometimes break some of the rules; but to break them and get away with it, you first have to know them.”

It is true that fractured sentences may occasionally produce the desired effect, but be sure you know why they are being used and that they are suitable to what is being written. Many regard a sentence that begins with “but,” or another connective, as incorrect, largely because the connective standing first seems to indicate a fragment. In this instance, the rule may be ignored occasionally, if by doing so you achieve a more effective statement.

RUN-ON SENTENCES

Another common error in sentence structure is the punctuation of two or more sentences as if they were one. This usually occurs with sentences that are closely related in thought. Note the following examples:

Poor: The ship held its first swim call, the water was 4 miles deep.

Improved: The ship held its first swim call.
The water was 4 miles deep.

Often a run-on sentence is the result not only of faulty punctuation, but of the writer’s failure to think the construction through and recognize the

relationships of the various ideas. Consider the following examples:

Poor: Detailed decontamination is a lengthy process, it is usually carried on at a home base or rear area.

Improved: Detailed decontamination is a lengthy process, usually carried on at a home base or rear area.

Poor: An emergency tourniquet can be made from something like a neckerchief, it is wrapped once around the limb and tied in an overhand knot.

Improved: To apply an emergency tourniquet made from something like a neckerchief, wrap the material once around the limb and tie an overhand knot.

DANGLING MODIFIERS

A writer’s misplacement of a modifier can confuse the meaning of the sentence, often with ludicrous results. Modifiers should be positioned close to the words they modify; otherwise, they may seem to modify something else. Haste, carelessness or lack of understanding of grammar may cause a writer to use a construction without thinking exactly what a particular word is supposed to modify. This kind of error is fairly common in using participles with other adjectives or with adverbial modifiers, as in the following examples:

Dangling Participle: Returning to the ship, the package was found on his bunk.

Improved: Returning to the ship, he found the package on his bunk. (It was he who returned to the ship, not the package.)

Dangling Participle: Entering the halon-flooded compartment, the gas overcame him.

Improved: Entering the halon-flooded compartment, he was overcome by the gas.

Dangling Participle: Running rapidly out from the windlass, he caught his foot in the anchor chain.

Improved: He caught his foot in the anchor chain, as it ran rapidly out from the windlass.

Misplaced Prepositional Phrase: At the age of two his father died.

Improved: He was two years old when his father died.

Misplaced Prepositional Phrase: Baker saw the driver of the car that had hit him in the theater.

Improved: In the theater, Baker saw the driver of the car that had hit him.

Misplaced Relative Clause: The chief mess management specialist discovered that old baking powder had been used in the biscuits, which caused all the trouble.

Improved: The chief mess management specialist discovered that the trouble with the biscuits was the use of old baking powder.

A frequently misplaced word is “only.” By moving this one word around in a sentence, you can change the meaning entirely. Study the following example:

- Only he could read the strange dialect.
- (Nobody else could.)
- He could only read the strange dialect.
- (He could not write or speak it.)
- He could read only the strange dialect.
- (He could read nothing else.)
- He could read the only strange dialect.
- (Only one dialect was strange, and he could read it.)

MISPLACED CORRELATIVE CONJUNCTIONS

Correlative conjunctions, (such as **not only—but also** and **either—or**) are often misplaced. Their correct position is just ahead of the words or groups of words they connect. Consider the following examples:

Misplaced: The Navy letter form **not only** omits the salutation **but also** the complimentary close. (The words that should be connected are “salutation” and “complimentary close”.)

Correct: The Navy letter form omits **not only** the salutation **but also** the complimentary close.

Misplaced: **Either** secure lines to the arresting hook **or** the hoisting sling. (As this sentence stands, the words that should be connected are

“arresting hook” and “hoisting sling.” The sentence will be better, however, if two complete prepositional phrases are used instead.)

Correct: Secure lines **either** to the arresting hook **or** to the hoisting sling.

Other frequently used correlative conjunctions are “both—and,” “neither—nor” and “whether—or.”

SPLIT INFINITIVES

Splitting an infinitive means placing one or more modifiers between the “to” and the verb form. You will hear people say that a split infinitive is no longer regarded as incorrect, but that is only a partial truth. Some writers consider that splitting an infinitive is desirable at times for the sake of emphasis; for example, “To **deliberately** disobey an order is a serious offense.” Even this sentence will grate on some ears, and generally, it is better for you to keep the adverb outside the infinitive construction. That is especially true when you have more than one adverb or a phrase.

Awkward Split: The only way for a person to win against a fire is **to** regularly and thoroughly **practice** the rules of fire prevention.

Better: The only way to win against a fire is **to practice** rules of fire prevention regularly and thoroughly.

ERRORS IN AGREEMENT

You probably have no trouble, most of the time, with agreement of verb and subject. You are not tempted to write: “The propellers was damaged.” But how about, “The propeller and shaft was damaged”? Wrong, to be sure, but it is an easy mistake to make when you are thinking of the two parts of a compound subject as belonging together. It should, of course, read “The propeller and shaft **were** damaged.”

In a compound subject with “or” or “nor” as a connective, the verb should agree in number with the **last** noun in the subject.

Incorrect: Neither the propellers nor the rudder **are** damaged.

Correct: Neither the propellers nor the rudder **is** damaged.

When a parenthetical expression beginning with words such as “together with,” “with” or “including”

comes between the subject and the verb, there is a temptation to make the verb plural as if the subject were compound. Consider the following example:

Incorrect: One mast, together with a spar running athwartship, **are** used for flags.

Correct: One mast, together with a spar running athwartship, **is** used for flags.

Disagreement between subject and verb sometimes occurs because, in a complicated sentence, a nearby noun is mistaken for the subject. This is the case in the following example, in which the plural nouns “officers” and “commands” seem to have confused the writer. The subject of the sentence, however, is “duty.”

Incorrect: The primary duty of such staff dental officers serving in these commands **are** very similar to those of a district dental officer.

Correct: The primary duty of such staff dental officers serving in these commands **is** very similar to that of a district dental officer.

Correct: The primary duties of such staff dental officers serving in these commands **are** very similar to those of a district dental officer.

GERUNDS

A gerund is a verb (verb form) used like a noun. For example: **Running** is good exercise. A gerund retains some of its verb qualities, however, such as taking a subject or object, or being modified by adverbs. Only one of these verb qualities—taking a subject—differs from what would be used with the same verb if complete. The subject of a gerund is in the possessive case instead of the nominative. For example: Had you heard about his **passing** the test?

“Passing” is a gerund with “his” as the subject and “test” as the object. The complete phrase is used here as the object of the preposition “about.”

ERROR IN NOUN CLAUSES

The pronoun that introduces a noun clause is sometimes given the wrong case because of the writer’s failure to recognize the structure of the sentence. The case of any pronoun is determined by its use in the clause of which it is a part. Note the following examples:

Incorrect: The award will go to **whomever** submits the best entry.

Correct: The award will go to **whoever** submits the best entry.

“Whoever submits the best entry” is a noun clause. The whole clause is used as the object of the preposition “to.” “Whoever” is the subject of the clause and therefore nominative.

COPY-EDITING MESSAGE RELEASES AND NEWSWIRE COPY

LEARNING OBJECTIVE: *Identify the methods used in copy-editing message releases and newswire copy.*

A **message** is an official communication in brief form transmitted by rapid means such as telegraph, radio, flashing light, flaghoist or semaphore. A message is usually received by a command’s communications department, reproduced, then distributed to staff members of departments concerned. It is tersely written, contains many abbreviations and is printed in capital letters.

However, when operations and time permit, timely news releases are transmitted in news style and contain all the information necessary for a good news story. Sentences are grammatically complete, including the necessary articles, adjectives and adverbs. A good message news release is very similar to newswire copy as it arrives in a radio, television or newspaper newsroom. It requires only copy editing and duplicating to get it ready for release to the news media.

A message news release is designated by the acronym PRESREL, which is a standard Navy communications abbreviation for press release. In the same line as PRESREL are the date and time (date-time group) the release was transmitted. For example: PRESREL 211802Z JUL 93. In this case, the story was sent on the 21st day of July, 1993, at 1802. The “Z” represents Greenwich Mean Time. The use of a different letter here would indicate local time in the area where the story originated.

All message releases are for immediate release unless otherwise designated. Occasionally, circumstances may dictate the use of such releasing instructions as: HOLD FOR RELEASE UNTIL (date and time), FOR SECURITY REVIEW AND RELEASE or FOR SIMULTANEOUS RELEASE. (Fill in the appropriate data.)

Because message news releases arrive printed in capital letters, you will use a different system for copy

~~FR. COMSECNDFLT~~
~~ACTION. CINCLANTFLT~~

~~PRESREL 051500Z JUL 92 U.S./FRENCH EXERCISE~~

~~FOLLOWING PRESREL PASSED FOR IMMEDIATE RELEASE X QUOTE~~ WITH THE
SECOND FLEET AT SEA -- ELEMENTS OF THE SECOND FLEET AND PLANES
FROM FLEET AIR WING (ELEVEN) ARE ENGAGED WITH UNITS OF THE FRENCH
ATLANTIC FLEET IN JOINT AIR, SURFACE AND SUBSURFACE OPERATIONS
IN THE WESTERN ATLANTIC X PARTICIPATING U.S. VESSELS ARE THE
CARRIER RANDALL E. CEDILLA, GUIDED MISSILE FRIGATE MACRON, GUIDED
MISSILE DESTROYERS OGONEK, CARON AND POLLY N. ANNISH AND THE
SUBMARINE JACK CREVALLE X THE FRENCH UNITS WILL DEPART FOR HOME
AT THE COMPLETION OF THE EXERCISE X ENROUTE, THEY WILL CONDUCT
ANTI-SUBMARINE WARFARE TRAINING WITH A NEW DETACHMENT OF U.S.
SHIPS FROM DESTROYER SQUADRON TWENTY-FOUR X ^{THIS GROUP WILL} THEY WILL INCLUDE THE
GUIDED MISSILE FRIGATE RUPRECT, ^{THE} DESTROYERS CARNEY, FORREST E.
BROOKS, ROECHETAL AND SEADOG, ^{THE} AND SUBMARINE SERGEANT X

~~BT~~

- END -

Figure 6-3.—Copy-edited message news release.

editing. You must assume that all of the capital letters are lowercase and begin your copy editing from there. In other words, any time you want to capitalize a letter

you must underscore it three times. An example of a copy-edited message news release appears in figure 6-3.

CHAPTER 7

GATHERING AND DISSEMINATING NAVY NEWS

To gather and disseminate news, you must first know what news is and how and where to find it.

News is new information about anything. It is material previously unknown (or at least unpublished) that the public, in whole or in part, needs or wants to know. News also can be thought of as information that someone or some group, such as the Navy, wants the public to know.

A fundamental definition of news—a key part of newswriting—is basic to a journalist's understanding of the craft. Some think of news as a combination of the compass points: north, east, west and south. Although this is not strictly the meaning of the term, the idea does emphasize the broad dimension the field covers. News is everywhere.

The primary commodity of the mass media is news. This commodity is mass-produced by world events and is retailed in printed, pictured and spoken form to millions of customers. As a Navy Journalist you are a middleman for this commodity. However, you handle only the portion known as **Navy news**.

In chapter 2, you learned what news is and the ways in which it is presented to the public. In this chapter, you will learn the types of news sources and the methods used to obtain and distribute news (see fig. 7-1).

TYPES OF NEWS SOURCES

LEARNING OBJECTIVE: *Identify the types of news sources used in producing and disseminating Navy news.*

For an energetic and resourceful journalist, the avenues for finding news stories are limitless. In reality, however, you will find that your job in the Navy does not give you the luxury of spending days, or even hours, tracking down elusive leads that may eventually result in one story.

As stated in chapter 1, the Navy Journalist is a public information specialist, and not a free press journalist. Your job is to tell the Navy story. That means you must write positive copy about your command and its people (save adverse news



Figure 7-1.—Military news conference photo.

(Photo by: Chief Photographer's Mate Dolores L Anglin)

situations). You are employed by the Navy. Therefore, you are expected to **work for** the Navy.

This is especially true regarding a ship or station newspaper to which you may be assigned. Such publications may be compared with the house organs of civilian businesses covered in chapter 4. Their purpose is to inform, educate and entertain their readers and to provide a means of recognizing the achievements of the personnel in the organizations they represent. They are not intended as forums for expose'.

WRITTEN COMMUNICATIONS

When performing your job as a Navy Journalist, you will find that there are three primary sources of Navy news. They are as follows:

- Messages, directives, electronic mail and official correspondence
- Special contacts (both official and unofficial) maintained by the public affairs officer and his or her staff
- The future file

Information about practically every significant event that occurs in the Navy is passed on to those concerned via messages, directives, electronic mail or official correspondence. This includes news of coming

events; current fleet exercises and operations; collisions at sea; search, rescue and salvage operations; plane crashes; acts of heroism; weather warnings and unusual weather conditions; changes of command; personnel promotions; new performance records; participation of Navy teams in athletics; upcoming charity drives and countless other occurrences.

Messages

Messages are transmitted between commands by rapid means, such as radio, teletype and flashing light. When a message arrives aboard ship or at a shore activity, a number of copies are made and distributed to various departments. The PAO normally gets copies of all message traffic that might be of interest in carrying out PAO duties.

Information contained in a message is usually brief and tersely written. The information is seldom detailed enough to be used for writing a comprehensive story. However, the basic facts are included and they provide a good starting point for you to develop a story.

Directives

Directives provide another source of Navy news for release to the civilian news media. You will find that much of the information they contain is intended for use by Navy personnel. Information about pay and allowances, uniform changes, advancements and promotions, service members' and dependents' benefits, training and educational programs, new regulations, morale, leadership, charity drives and similar subjects are put out in directive form. When analyzed and written in news story form to play up local interest or some other news peg, information of this type makes good copy for command newspapers and other publications written primarily for a Navy-oriented audience.

Official Correspondence

Official correspondence between commands often provides tips for worthwhile stories. An Aviation Machinist's Mate first class, for example, submits an idea to the Naval Air Systems Command via the chain of command about an improved method for servicing aircraft. The idea is tested and adopted, and the individual is commended for the initiative and ingenuity shown. The entire transaction takes place on paper in the form of official correspondence. If copies of the letters are routed to the PAO for information, you

will have an opportunity to develop a good story for internal and external release if the facts are unclassified.

Security is an important factor for you to consider before using any information available in naval messages, directives and official correspondence for a news release. If the material is classified, you must not use it.

SPECIAL CONTACTS

Every public affairs office depends on tips from outside sources to develop stories. Regardless of the size of a command, it is impossible for you to know everything that is going on. By creating a list of special contacts, both officials and personal friends, and acquainting them with your job, you will assure yourself of having a steady flow of news items. Although a stranger may be reluctant to telephone your office and suggest a story, a friend or an acquaintance will feel free to call.

Officially, you should at least know the name, rank and title of every senior officer in your command. You should also have a good idea of the type of work they do and where they can be reached when you need information. If you remain in your job long enough, you will probably have personal contact with them. If you show them you are an efficient and capable person and establish credibility, they will be good sources of news as well.

You will find that your job is easier when Cmdr. Tilde, the medical officer, calls to tell **you** about a new medical device being tested at the clinic; or when PNC Umlaut informs **you** that the Navy's oldest enlisted man has reported aboard; or when Mr. Caret at MWR lets **you** know that a base civilian signed a minor league contract to play in the New York Mets organization; or when Lt. Breve announces to **you** that he is engaged to marry a former Miss America.

Eventually, all of these stories might have filtered down to the PAO, but the fact that you were informed firsthand gives you a head start on getting the story out while it is still news.

FUTURE FILE

Most public affairs offices should maintain a current listing of all events that have been scheduled or planned for the future. Material collected in the **future file** usually falls under the heading of **created news**. The public affairs office develops the ideas, plans and

writes the stories, and releases them to achieve maximum dissemination.

The public visitation of your command, for example, is scheduled months in advance. To make sure the visitation is a success, the PAO embarks on a planned publicity program. Prominent public figures are invited as guest speakers. Displays and exhibits are set up. Parades, reviews and drill team demonstrations are planned. An air show, ranging from a simple, low-level flyover to unique maneuvers of the famed Blue Angels, may be scheduled. A steady flow of releases about the program plans is sent to news media to attract attention and visitors. Another event similar to public visitation is a planned, detailed program about the construction of a new ship, especially a new type of ship. A public affairs program is generated for the keel laying, building, christening, launching, fitting out, commissioning, sea trials, assignment to fleet and force commanders and finally, the shakedown cruise.

However, not all material developed by the PAO takes place on such a large scale. A visit by an important dignitary, a CO's speech, the return of a ship from extended operations, special anniversaries, observances of national holidays in conjunction with the civilian community and athletic and entertainment events that will benefit charities are all created news items included in the future file. The PAO gives these events advance buildups, spot news coverage and occasionally, follow-up coverage.

The future file is usually a collection of file folders, each one containing advance information about a particular upcoming event. It can also be as simple as a calendar pad with enough space in its blocks to write key words that serve as reminders. A wall-sized grid under plexiglass works well too.

Another variation of the future file is the date-box. This consists of 31 file folders containing advance material for each day of the month.

Whatever arrangement is used, all public affairs offices should maintain a good tickler system of upcoming events to assure complete coverage of all news events.

METHODS OF GATHERING NEWS

LEARNING OBJECTIVE: *Recognize the most commonly used methods of gathering Navy news.*

The four most commonly used methods in news gathering used by Navy Journalists are observation, telephone conversations, research and interviews.

OBSERVATION

Observation consists of your actually seeing an event take place and then reporting what you have seen in the form of a news story. The difference between a good story and a poor one is often in the skill of the observer. Skilled observers use their eyes, ears, mind, notebooks, and tape recorders. They make sure they get the concrete facts, specific figures and accurate information. They look for the colorful, the dramatic or the unusual in any situation.

Skilled observers always try to get more information than they actually need. They know it is easier to discard excess material than to retrace their steps after the story is cold. Developing your powers of observation can come only through experience. You cannot become a skilled observer by simply reading a book. The key to becoming a good observer is to look for more than you see on the surface.

THE INTERNET

One of the most common sources of information today is the Internet. Nearly every Navy command has its own official command World Wide Web Site. These sites provide valuable information on the makeup of the command, command history and special events. An advantage to using the Internet is that the information is regularly updated and remains more current than other sources.

Information taken off the Internet must be downloaded to your work center computer, stored on a diskette and then compiled. Be careful to check everything you download for viruses before opening them on your work center computer station. A computer virus can wreak havoc with your PC and any computers you transfer or share information with. Contact your command Information Systems Security Office to ensure your work center PC has the latest computer virus protection software.

Once you have downloaded, checked for virus, and compiled the information, electronic transfer is swift and easy.

TELEPHONE CONVERSATIONS

The telephone plays an important role in your daily work as a journalist. It saves you time, legwork and

often allows you to reach people who are ordinarily too busy to see you in person.

Telephone conversations may range from full-scale interviews to brief queries to verify or amplify information. But regardless of how often you use this method of newsgathering, you should keep the following points in mind:

- Know what information you want before you dial. Keep your pencil and paper handy. Do not call someone and then ask that person to wait while you look for writing materials.
- Speak politely in distinct, well-modulated tones.
- Be cheerful and businesslike.
- Make sure you get your facts straight. Ask the other person to repeat figures or spell out names.
- Avoid three-way conversations among yourself, the person on the telephone, and somebody else in your office.
- Recheck your information by reading it back to the person who has given it to you.
- Record the conversation using a “telephone pick-up” (device that attaches to the telephone receiver and plugs into the microphone jack of the cassette tape recorder). To avoid “privacy” problems, inform the person on the other end that you are recording the conversation for note-taking purposes only.
- Do not discuss classified information.

Although a telephone is a very useful instrument, remember it is not the only, and not necessarily the best, method of gathering news. It should supplement, but not replace, all other methods. Whenever it is proper and convenient, use the telephone, but do not be afraid to engage in a little legwork.

RESEARCH

Research is nothing more than digging out information from files and reference works. Research is used to verify or amplify facts in news stories and to give depth to feature stories and magazine articles. Very few Navy public affairs offices have adequate reference libraries. To do any extensive research, learn to use the facilities of the nearest Navy, public or college library. Here you can find the necessary books, encyclopedias, almanacs, magazines, atlases, directories, indexes and similar references. The Naval Historical Center (OP-09BH), Washington, D.C., is a

good source of additional information about the Navy (www.history.navy.mil/index.htm).

INTERVIEWS

About 90 percent of everything in a news story is based on some form of interviewing—either in person, by telephone or occasionally, by correspondence.

As a Navy Journalist in search of information, you must learn who to get information from and how to record facts. You must learn techniques for handling different kinds of people—how to draw some out, how to keep others on the topic, and how to evaluate the motives or honesty of others. In short, you must learn how to get along with people and how to treat them with tact and understanding while still accomplishing your purpose (see fig 7-2).

INTERNET WEB SITES

Some of the official Navy world wide web sites that could be accessed for information include:

U.S. Navy Homepage:	www.navy.mil
CHINFO:	www.navy.mil/chinfo
Navy Historical Society:	www.history.navy.mil
BUPERS:	www.bupers.navy.mil
CNET:	www.cnet.navy.mil
Navy Exam Center:	www.cnet.navy.mil/advancement
Naval Media center:	www.mediacen.navy.mil

For a list of all official Navy web sites, visit the official U.S. Navy homepage.



Figure 7-2.—Media interviews require careful planning.

(Photo by PH1 Michael Wormer)

Types of Interviews

A distinction must be made between news stories that are merely based on interviews and actual interview stories. Very seldom is a journalist present at the scene of an accident as it takes place—for example, at a collision between two automobiles. A story of this type must be based entirely on interviews—either in person or by telephone—with the police, with eyewitnesses, with the victims themselves, and depending upon the gravity of the accident, with the garage mechanics, hospital attendants, relatives of the victims and others.

In news stories of this kind, the journalist is concerned with a news event that requires interviewing people to learn the facts. The **interview story**, on the other hand, is essentially a feature built around the views, personality or exploits of an individual or group of individuals. The difference, in most cases, is largely in the emphasis. In writing the **interview-based news story**, you stress the news, whereas in the **interview story**, you place the stress on the person being interviewed.

Interviews are as varied as the people who grant them, the journalists who conduct them and the news that suggests them. Rarely are interviews so mechanical that they can be reduced to standard formulas or categories. Several types, however, deserve special attention because they are the ones that occur most frequently. They are as follows:

- News interview
- Telephone interview
- Casual interview
- Personality interview
- Symposium interview
- News conference
- Prepared question interview

NEWS INTERVIEW.—The news interview is based on “hard news,” some event or development of current and immediate interest. Suppose you are a journalist assigned to the staff of Commander, Naval Air Force, U.S. Atlantic Fleet (COMNAVAIRLANT), and a new supercarrier has been launched for the Navy. Later, you learn the carrier will be assigned to the Atlantic Fleet, and you are assigned to write the story. The original news announcement released by the shipyard or naval authorities would most likely contain

only the broad, straight facts—cost, size and construction details.

A story of this scope is of major interest to the local community of the supercarrier’s homeport. Media want more information than is offered in the initial report. By interviewing competent news sources, such as key officers on COMNAVAIRLANT’s staff, and asking well-defined, carefully considered questions, you can localize, illuminate, expand and add depth to the original story. When will the ship be commissioned? How will the ship’s presence affect the local economy? What will its mission be? When is it expected to join the fleet? To which carrier division will it be assigned? Will there be a flag officer embarked? Has a prospective CO been selected? How will this new carrier strengthen our national defense effort?

In any interview, try to speak to the best authority available. Do not settle for the supply clerk, if the information you need should come from the CO.

TELEPHONE INTERVIEW.—The telephone interview, a modified version of the news interview, has a number of obvious advantages, and at the same time, it has several limitations that challenge a resourceful journalist. Ingenuity and clear thinking are sometimes needed to locate a news source when a big story breaks; the power of persuasion is often necessary to elicit information from a reluctant person who can easily hang up the receiver, and a sympathetic telephone voice is important when you are talking to a family where tragedy has struck.

CASUAL INTERVIEW.—An accidental encounter between a journalist and a news source on the street or at a social gathering can often result in a tip that arouses the curiosity of a writer. A major news story may be the result after you do some digging.

PERSONALITY INTERVIEW.—In the personality interview an effort is made to let the reader see the appearance, mannerisms, background and even the character of the subject. Magazines like the *New Yorker* have developed this type of interview, called “a profile,” into a high art not easily attained by daily newspapers under the pressure of deadlines. However, with preliminary research on an interviewee’s background, intelligent planning of questions and skillful interviewing, a good journalist can let a person’s words and mannerisms bring that individual vividly to life in an interesting newspaper feature story.

SYMPOSIUM INTERVIEW.—From time to time, news developments of current interest require a journalist or a team of journalists to seek information not from one or two sources but from a dozen, or perhaps a hundred or more. For example, which of the two presidential candidates in the television debate made the best impression on the public? How do the residents of a city feel about their football team winning the Super Bowl? For some stories—as in a pre-election poll—all of the techniques of a scientific opinion sampling may be required. In other instances, reactions and comments may result in a lively feature story. Depending on the subject, the symposium (or group) interview may bring out opinions of importance, entertainment or merely the views of the “man on the street” on some subject of general interest.

NEWS CONFERENCE.—Since the 1960s, one of the most popular methods of getting news is the news conference. By presenting news conferences “live” on television, President Kennedy raised them to one of the most potent forces in the public exchange of opinion between the people and their government. Today, every level of the government uses the news conference to release sensitive information in a timely manner. For close to 70 years, in a different format, the news conference has been an important source of news. The person interviewed at a news conference may be the President of the United States, the Chief of Naval Operations, a senior government official, the manager of a big league team, a movie star plugging a new motion picture or any other person promoting what is believed to be a news story of interest to the public. As in every interview story, preliminary groundwork pays off; a knowledge of the interviewee’s background is indispensable. During the interview, an alertness to story possibilities often leads to unexpected results. Additional details on news conferences are covered later in this chapter.

PREPARED QUESTION INTERVIEW.—When direct person-to-person questioning cannot be arranged with an important news source, journalists occasionally resort to giving that source a set of prepared questions to which a reply is requested. More often than not, however, the questions go unheeded. When the journalist does get a reply, a major news story generally results.

In every interview assignment, the journalist’s objective is always the same—to ferret out as much news, details, significance and color about a personality or event as possible. The success of the story depends on the quantity and quality of the

information gleaned from the interview and the journalist’s sense of news values and writing ability.

Interview Tips

The manner in which you prepare for conducting interviews can often determine the success or failure of those projects. What follows are 10 tips on handling interview assignments that should prove useful to you.

1. **Know what you want.** Whether you are interviewing someone for a hard news story or you are on an assignment for a feature, remember you are the one who will have to write the story. This means that you must bear in mind the essence of the story you are after or the angle you want to develop. If you are covering a fire, what are the things you should find out? They will include whether anyone was hurt, the extent of the damage, the cause of the fire, how it was discovered, which fire stations responded, how long it took to put out the blaze and many other facts.

The same kind of analysis must be applied to all stories. This will guide you in your questioning, and most important, in your search for details. Learn how to dig for facts. Be alert, interested and curious. Details are more vivid than generalities. For example, if your subject casually mentions he was the editor of a college newspaper, find out the name of the college, and when the position was held. These are simple, natural questions that will come to the minds of some of your readers; do not leave them unsatisfied. Every story is unique. It will differ from others in many details. Unless you know what to look for and how to get it through proper questioning, your story will be incomplete.

2. **Prepare for the interview.** Whenever possible, particularly on a feature assignment, look up your subject’s background. From news clippings or from reference works like *Who’s Who*, try to determine beforehand any views the individual may have on the topic of your interview. Ignorance of an important person’s biography and work may seem insulting to the individual concerned, and you may lose the person’s cooperation. However, you should never try to impress the interviewee with your knowledge of the individual’s own subject.

3. **Plan your questions.** This does not mean you should read them formally or present them in an artificial manner. Conduct your conversation in a natural, informal fashion. Always keep your questions in mind and try to guide the conversation along lines that will give you a story with substance. Planned questions,

jotted down on a pad in front of you, are particularly valuable when you interview someone by using the telephone. At the same time, be receptive to a new angle that may arise and may be better than the one you had originally planned.

4. **Be careful about taking notes.** Some interviewers write everything; others write hardly a word. Some subjects become uncomfortable in the presence of a reporter transcribing every word they say and at the prospect of having their names appear in the paper. Other interviewees prefer to have their words written down to avoid being misquoted. In general, you will probably remember most of the conversation if you write the story while it is still fresh in your mind. Details, such as names, dates, statistics, key words and distinctive phrases, should, of course, be jotted down on the spot.

If you have access to a small, portable tape recorder, by all means use it. Some subjects may be uncomfortable in the presence of a tape recorder, but most will not. Try to use a tape recorder with a built-in microphone. This will avoid the sometimes-awkward practice of holding a hand microphone to the interviewee's face.

5. **Know your subject.** Some people need to be flattered; others cajoled. Some are naturally shy; others will talk a blue streak. Evaluate your interviewee and guide yourself accordingly. The majority of people will react favorably to a straightforward, factual approach and will not be impressed by arrogance or excessive humility. Only courtesy, intelligent curiosity, a sincere desire to be natural and knowledge of what you are after will help you come away from an interview with a newsworthy story.

These are major principles that can be applied in nearly all interviews. However, as previously mentioned, alert and resourceful journalists must be ready to vary their techniques depending on the temperament and views of the interviewee, the nature of the story and the dictates of circumstances.

6. **Be specific.** A question like "Anything new?" will, in most cases, bring forth very little information because the average layman knows little about what is of news value. Ask direct and leading questions.

7. **Be accurate.** The smallest error can cause embarrassment and even a libel suit. Do not be afraid to ask questions and to check facts. When you interview someone by using the telephone, one letter can easily be mistaken for another. Therefore, spell out names by using phonetic aids. Spell it: "S-M-I-T-H. S as in

SIERRA, M as in MIKE. ..." (Of course, make sure it is "Smith" and not "Smythe.") People dislike having their names misspelled. Also, obtain the complete and correct addresses of people in a story.

8. **Look for color.** In personality features, particularly, an apt word or phrase describing your subject's appearance or mannerisms will help your readers "see" the person. Here is a helpful suggestion: As you conduct the interview, try to think of words that would best describe your subject in a nutshell. In some stories, a reference to a person's movements, gestures, way of talking, and his or her surroundings may give a better picture of that individual. Often, you will be able to make some comparison in terms of a figure or object familiar to your readers, but be careful not to offend the interviewee.

9. **Do not talk too much.** You are interviewing someone to **get** information, not to demonstrate how smart you are. At the start, you may need to lead the conversation along general lines to put the interviewee at ease and to get around to your subject. But after that, be self-effacing. On occasion, you may have to play dumb; then assume nothing and ask everything. Be conscious of time; do not waste yours or the interviewees. Occasionally, a time limit is imposed on an interview. When time is limited, you will have to arrange your questions in order of importance. Although the relationship between you and your subject should be informal, remember that the nature of your call is business, not social.

10. **Remember your sense of humor.** This may break the initial ice or even save your interview if the interviewee has a negative attitude.

One final thought —the best kind of interview is one that proceeds in a friendly, natural, informal way. There was a time when some news people thought little of using deception or impersonation to get the information they wanted. Respectable newspapers and other media frown on these practices today.

Additional information on interviews may be found in chapter 15 ("Radio and Television Interviewing").

AUTHORITY FOR RELEASING NAVY NEWS

LEARNING OBJECTIVE: *Identify the proper authority for the release of Navy news.*

When information previously limited to a controlled number of persons is made available to the general public, it is said to be “released.” If this is done in formal written form, the document itself is termed a **release**, or a **news release**. Officers in command of all ships and stations, as well as senior commands, are authorized to release certain types of news without requesting advance approval from higher authority.

News of purely local interest is the first of this type. However, there are certain cautions. All officers in command are responsible for keeping CHINFO and other concerned seniors informed of all events and actions when any possibility exists that the national news media may become interested. There are also special procedures for handling news releases relating to members of Congress and civic officials.

Spot news, including announcements or answers to queries of an emergency nature, where delay in issuing information would be harmful to the best interests of the Navy, is releasable without advanced approval of higher authority.

Categories of news releases for which local release is not authorized, without prior approval of higher authority, are covered in detail in *PA Regs*. A partial list of these categories is included in table 7-1.

In some cases the PAO is authorized by the officer in command to release certain news items, such as “hometowners” and news of a purely routine nature.

Release of information by any command is carried out by, or with, the assistance of the command PAO. Offices or divisions within a command cannot release information to the public without consulting the PAO.

For a complete study on the proper release of information through channels from the heads of government down to individual units, refer to the most current version of *PA Regs*. It describes the procedures for releasing news at all levels of interest —local, regional, national and international.

METHODS OF DISSEMINATING NAVY NEWS

LEARNING OBJECTIVE: *Determine the methods of disseminating Navy news.*

Navy news material, properly authorized for release, can be channeled to the media in several ways. The nine commonly used methods are as follows:

- Standard Navy news release

Table 7-1.—Subjects Not Releasable Locally (Unless Approved by Higher Authority)

A. Accidents and Casualties

1. Civilians on board Navy ships, etc.
2. Foreign nationals in training with the Navy
3. Involving more than one service
4. Nuclear
5. Names and photographs of casualties

B. Biological Research, Chemical Warfare and Psychological Warfare Programs

C. Classified Information and Intelligence Activities

D. Foreign National and Foreign Countries

1. Policy
2. U.S. foreign defense plans
3. Operations and training exercises

E. Movements of Units

1. Between ports in the U.S.
2. Overseas areas

F. New Weapons and Equipment

1. Performance or capabilities
2. Modifications resulting in improvement

G. Nuclear

1. Nuclear propulsion
2. Nuclear weapons capability of U.S. forces
3. Port visits of nuclear-powered ships
4. SSB(N) operations

H. Personnel

1. Movements of
2. Name and address lists (example: “FOUO” directories)
3. Reduction in personnel
4. Statistics

I. Scientific Results (unclassified)

J. Submarine Sightings

K. Supply

1. Sources/quantities of strategic or critical supplies.
2. Movements, assembly and storage of supplies/ materials

L. Technical Information

M. Training of Specialized Units

- News advisory
- Spot news announcements
- News conferences

- Interviews
- Background briefings
- Feature releases
- Advance releases
- Personal appearances

STANDARD NAVY NEWS RELEASE

A Navy news release is an official Navy statement prepared in news story form. The enlisted journalist normally prepares and edits it, then the PAO, through the authority of the officer-in-command, approves the release. As a Navy Journalist, you will work with the Navy news release more than with any other method of news dissemination. A well-prepared and edited standard Navy news release—placed in the hands of all interested media at the same time, supplying all with identical information—remains the most satisfactory method of releasing news.

Most public affairs offices, particularly at larger commands, use a printed heading for their news releases. These are attractive and help members of the media identify the source of the release more quickly. However, they are by no means necessary. If a printed heading is used, keep it simple, informal, suitable and in good taste to cover all types of releases. The news value of the material, and not the packaging, is the most important consideration. A sample release format is shown in tables 7-2 and 7-3.

Certain information, however, should always be included in the heading of a release. Make sure your release format includes the following items:

- Name, address, ZIP code and electronic mail address of the originating command
- Office telephone numbers (including facsimile number)
- Point(s) of contact for further information
- Type of release
- Release number
- Short headline to identify the content of the release
- Date of release

News releases should be double-spaced, typed on only one side of a sheet of paper and legibly reproduced. Official directives regarding economy in duplication on both sides of the paper do not apply to news releases.

Timing of Navy News Releases

The timing of news releases is almost as important as their content. An improperly timed handout may be lost in the media editor's in-box simply because it is poorly timed.

Most Navy stories are distributed **For Immediate Release**. This authorizes the media to use the story as soon as it is received.

Occasionally, however, it is necessary to distribute a story on a **Hold For Release** basis. This tag, along with the authorized date of release, is attached to important feature stories. It is usually typed in the spot where **For Immediate Release** appears in table 7-2.

Assume that the CNO accepts a speaking engagement in your city. If an advance copy of the speech is available, it may be released to news media on a **Hold For Release** basis. This would give news media several advantages. First, reporters covering the event would not have to take notes of the speech. They would merely check their future release to make sure the CNO followed the text. Second, television or radio people may not want to record the entire speech. With an advance copy of it in their possession, they could tape only key portions. Third, if the speech is important enough, newspaper editors may decide to publish it verbatim. The advance copy would permit them to set the speech in type beforehand so the speech could be printed immediately after it was delivered.

In general, however, news media prefer to use news as soon as it is received. Reporters take pride in bringing facts to light, not in withholding them. Never give them a story marked **Hold For Release** unless you have a good reason.

News Release Numbering System

For quick reference and orderly filing, a release number is assigned to all outgoing stories. There are various systems of assigning release numbers. Most commands follow the practice of beginning a new series at the beginning of each year. The first release sent out in 2001, for example, would have a release number of 1-01. The second release would be 2-01, and so forth. All releases are numbered consecutively in this manner until the end of the year. Remember that release numbers are assigned to each story, not to each copy of a story. If one release is sent to 17 different media, all 17 copies should bear the same release number.

Table 7-2.—Sample Navy News Release Format (page 1 of 2)

**PUBLIC AFFAIRS OFFICE
NAVAL STATION WEIERSTRASS
MAKAPUU POINT, HAWAII 96885-7748**

**TELEPHONE: (808) 885-9847
886-9848
DSN: 334-9999
FAX: 885-9849**

FOR FURTHER INFORMATION, CONTACT

**LT HACHEK PRAWN (PAO)
JOCS JEAN IOTA (APAO)**

OFFICIAL NEWS RELEASE

FOR IMMEDIATE RELEASE

**RELEASE #12-94
FEBRUARY 2, 1994**

SHORT HEADLINE HELPS EDITORS IDENTIFY STORY'S NEWS PEG

WITH THE FIRST FLEET, February 2 — This is the recommended first-page format for Navy news releases. It is for immediate release under a dateline. The "heading" contains the office of origin and its mailing address, telephone numbers, fax number, point(s) of contact for further information, type of release, release number, headline and date.

Other recommended styles of datelines are as follows:

1. For releases originating ashore:

SAN DIEGO, Calif., Feb. 2

2. For releases originating at sea:

ABOARD THE USS CONTOUR INTEGRAL AT SEA, Feb. 2

If there is more than one page of copy in a Navy news release, end each page, except the last, with the word "more."

-more-

Table 7-3.—Sample Navy News Release Format (page 2 of 2)

**NS WEIERSTRASS PAO
NAVY NEWS RELEASE FORMAT
2-2-2-2-2**

Second and subsequent pages of the release should be "slugged" for identity and numbered as shown above.

Do not hyphenate words between lines, and do not break sentences or paragraphs between pages. Paragraphs are indented five spaces. Begin your first paragraph about one-third to one-half of the way down the first page.

The copy itself should be neatly typewritten, double-spaced in lines 60-75 characters in length with one-inch or better margins all around. This allows the editor to edit or make notes on the release.

Use a high-speed copier when several copies of a release are necessary. Make sure each copy is legible. When a number of pages are involved, check to see that the pages are in order and that there are no blanks.

Remember, do not clutter an editor's desk with a news release unless you are telling him something newsworthy.

Finish your story on the last page with either "-30-", "-end-" or "-USN-" to indicate the end.

-USN-

NEWS ADVISORY

A news advisory is an abbreviated form of a news release intended to get the news media to cover an event themselves. The news advisory is normally no more than a page in length and includes a compact description of the event. Pertinent information, such as the date, time, location, specific details, and the significance of the event, also should be included. You may disseminate the news advisory in the same manner as a news release, using the format in table 7-2.

SPOT NEWS ANNOUNCEMENTS

When an event of immediate and urgent news interest occurs within the command, such as an unscheduled VIP visit or an accident involving casualties, all available and properly releasable facts are issued promptly and without waiting until a complete account is compiled. Spot news of this type is usually released by bulletin or in memorandum form. However, if circumstances require, it may be read over the telephone. Spot news is always issued **For Immediate Release**.

NEWS CONFERENCES

Whenever a news event is of great importance to the local public or when there is a visit by a prominent official who wishes to address the media, a command calls a news conference and sends invitations to all interested media. Information is released at a news conference through a senior naval officer or other Navy spokesperson, an individual involved in unclassified activity of public interest, an expert in some newsworthy project, survivors of an accident, or perhaps someone directly involved in some activity or event.

Often, after an advance release goes out announcing the intended visit of a VIP or some other event of significance, the media requests a news conference.

When time permits, prepare media information kits (covered in chapter 16) to supplement information made public at news conferences.

Avoid, if possible, requesting media to submit questions in advance. When advance questions are desirable, as in cases where highly technical answers would be required for some questions, correspondents should be advised of this. When written questions are volunteered, detailed answers are normally prepared

and distributed to all attending media representatives immediately preceding the conference.

A news conference can be abused. The only reason to call a news conference is to release information that cannot be covered adequately by a news release. A news conference should not be used solely as a prestige vehicle. It should be called only when there is something to say. Most media cannot spare the time and personnel for this type of coverage. The quickest way to alienate reporters is to make them cover an event in person when they could have covered it over the telephone.

A news conference can do a lot for the Navy when it is used properly. News conferences establish public esteem, erase controversy, and show that the Navy has nothing to hide. Reporters are given the opportunity to ask questions and get all the information they want. This often results in clearing up misunderstandings. Finally, it enables all media to get the same information at the same time.

INTERVIEW

An interview differs from a news conference in that it is usually initiated by a media representative and involves communication of information from a responsible spokesperson to only one reporter.

BACKGROUND BRIEFINGS

Background briefings differ from a routine news conference or interview only in their usual provisions that a precise source is not identified in the reporters' stories. The content or source of a story written from a briefing is usually attributed to a "Navy spokesperson," "informed military sources" or some other truthful, but not specifically identified, individual imparting the information. In such cases, the ground rules are clearly understood and agreed to by all participants. In most cases, especially when the subject is not of a technical nature, these briefings are conducted by the command PAO.

FEATURE RELEASES

Features, or "time releases," differ from spot news mainly in the degree of immediacy. That is, it makes little difference whether particular news accounts are passed along to the general public today, tomorrow or next week.

A feature may concern previously undisclosed developments dating well into the past or some

upcoming event or anniversary. Either way, it must contain a high degree of general human interest. This type of release is usually made in writing, but it may be given out through an interview or news conference. Often a feature release lends itself to pictorial treatment by the use of still photographs or videotape. Feature releases are issued for both immediate and future use.

ADVANCE RELEASES

You read about advance releases (stories) in chapter 5. Advance releases are issued concerning events scheduled or anticipated for the future. They are generally on a **Hold For Release** basis, specifying exact times, to make sure of simultaneous use by all interested media, and to prevent premature disclosure. An advance release often is accompanied by an invitation to media representatives to attend an event

and is usually supplemented by follow-up releases. Official photographs, printed programs or other material providing in-depth background on a forthcoming event are often enclosed with an advance release.

PERSONAL APPEARANCES

Personal appearances include formal speeches and informal remarks by Navy officials and authorized spokespersons in which information is released to appear as an official news announcement. The information could be given at public or semipublic meetings, in public forums, on radio and television programs or during any other contact with the public. The size of the group being addressed is irrelevant, and it does not matter whether the remarks are or are not reported by the news media.

CHAPTER 8

PUBLICATIONS

Despite the popularity of radio and television, the Navy and the public-at-large are very much print-oriented. All large ships and stations and many of the smaller Navy commands publish newspapers, magazines and brochures regularly. Consequently, as a Navy Journalist, you can expect to be tasked with editing or assisting in the production of such a publication.

Should you somehow miss out on this challenging opportunity, a number of other items requiring an editor's skills and knowledge will likely surface on your desk some morning. Among these highly probable assignments are family grams, change of command programs, public visitation brochures and cruise books.

Therefore, the information in this chapter, while directed primarily to potential newspaper editors, also is intended to acquaint you with the fundamentals and terminology of laying out and making up copy for the publisher. Tips on designing Navy newspapers for a contemporary audience are included in this section as well.

DESKTOP PUBLISHING

LEARNING OBJECTIVE: *Define desktop publishing and explain its limitations and capabilities.*

In less than 10 years, desktop publishing has surfaced as one of the predominant personal computing applications. It has changed the way you, as a Navy Journalist, produce a wide array of publications, from ship and station newspapers and family grams, to welcome aboard pamphlets and commissioning/decommissioning brochures (see figure 8-1).

DEFINITION

Simply stated, desktop publishing is an application that combines an economical personal computer system with page layout software and a laser publisher to produce typeset-quality-printed products. This eliminates the need to work with dummy layouts and galley proofs because the entire product is composed on a computer screen.



Figure 8-1.—The components of a typical desktop publishing system: personal computer, laser printer, scanner, mouse and software.

Using computers to compose pages is now commonplace throughout the country. For many years, newspaper and magazine publishers have used computers for all facets of page layout and editing. However, the cost of their computer systems and accompanying software was prohibitive, and therefore, limited to national publications or those in relatively large markets. Accordingly, the manufacturers of customized computer publishing systems were hesitant to produce cheaper versions of their products. This changed in 1985 when desktop publishing went mainstream.

TRADITIONAL VS. DESKTOP PUBLISHING

Desktop publishing allows you to throw away your drafting board, paste-up sheet, “T” square, rubber cement and the rest of the printing and layout “tools of the trade” that were formally used to lay out pages.

Consider, for example, you are a JO3 tasked with laying out and designing page 5 of your weekly funded newspaper. In the old days, you would work with the newspaper dummy where you indicate the arrangement of the copy, headlines, photographs and cutlines. Your main tools would be a pencil, printer's rule and eraser.

If you worked the same page on a typical desktop publishing system (fig. 8-1), you will notice a tremendous difference. You may layout and design the entire page on the computer screen using a publication software program, the computer keyboard and a mouse. You could indicate the size and kind of type and its page position with relative ease. Using a scanner, you could insert illustrations and photographs into the layout; then make modifications as necessary. All the while you are working on-screen with body copy that will result in typeset-quality text —without the involvement of a military or civilian publisher.

STRENGTHS

With the proper computer hardware and software in place, you will enjoy the following attributes of desktop publishing:

- A cut in printing costs by as much as 75 percent.
- Fast turnaround time.
- Making corrections to spelling errors, omission of words or entire lines of text and poor word division at your office.
- Making last-minute changes without a major reworking of the paste-up.
- Using less office space, a key consideration especially aboard ship.
- Eliminating the need to work with a publisher on the initial paste-up of a product, as discussed earlier.
- Eliminating the need to work with the subcontractors of the publisher, such as typesetters, proofreaders and so forth.

WEAKNESSES

Any computer-literate JO can operate a desktop publishing system with relative ease. However, there are two common hazards you should recognize and avoid.

The old saying, “Familiarity breeds contempt,” certainly applies to desktop publishing. Some novice desktop publishers, convinced that the computer hardware and software are suitable replacements for talent and skill, become complacent in the basic principles of layout and makeup. In turn, they produce page layouts you would only see in your worst nightmares. Make sure you follow the

long-established rules of layout and makeup covered later in this chapter.

In addition, you should apply some forethought when selecting your computer hardware and software. On occasion, some hardware components will not function properly with others, and there are some word processing programs that will not work well with certain desktop publishing programs. If you are purchasing a new system, make sure you get satisfactory answers to questions about compatibility.

DESKTOP PUBLISHING SOFTWARE

LEARNING OBJECTIVE: *Identify the most common desktop publishing software and determine their basic features.*

There are several desktop publishing software programs for both Macintosh and PC-based computer systems. You should be aware that although these programs are similar in terms of overall operation, they vary widely in their capabilities and functions.

For instance, less elaborate desktop publishing programs are mainly suited for simple pamphlets and brochures, while more complex versions include advanced features, such as indexing, style sheets, and typographic operations you can use to control the spacing of single characters.

Since new desktop publishing software programs (and newer versions of existing programs) are introduced to the marketplace frequently, you should research the features of as many programs as possible. As stated previously, make sure the program is compatible with your hardware. It should be able to convert files from your current word processing program, have a good graphics file and a large selection of type fonts from which to choose.

NEWSPAPER FORMATS

LEARNING OBJECTIVE: *Recognize the types of formats of ship or station newspapers.*

The three formats used in ship and station newspapers are full format, tabloid and magazine. These formats are shown in figure 8-2 and are described in the following text.

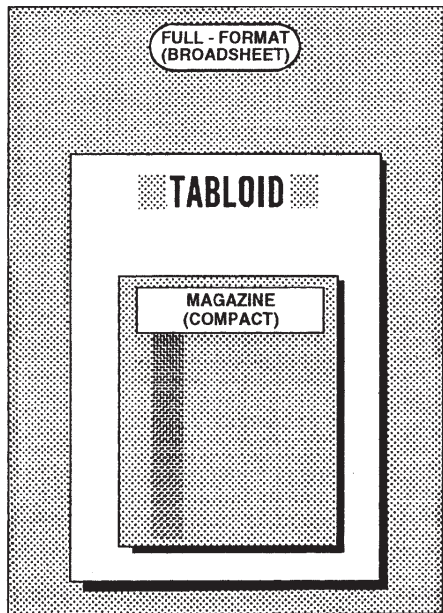


Figure 8-2.—Formats of ship and station newspapers.

FULL FORMAT

A full-format (also known as broadsheet) newspaper is one that measures 16 or 17 inches wide and 21 to 22 inches deep. A full-format newspaper can be made to have five columns, six columns, seven and one-half columns, eight columns or nine columns.

TABLOID

A tabloid newspaper is about half the size of a full-format newspaper. It measures 10 to 12 inches wide and 14 to 18 inches deep. A tabloid format newspaper can have two, three, four, five, five and one-half and six columns.

MAGAZINE

A magazine-format (also known as compact) newspaper is about half the size of a tabloid newspaper. It measures 7 to 8 inches wide and 10 to 11 inches deep. It can be made to have one column, two columns, and three columns.

NEWSPAPER DESIGN

LEARNING OBJECTIVE: *Recognize the techniques used in ship or station newspaper design and any specific considerations, respectively.*

Other important considerations (beyond the news gathering, news writing, and copy editing aspects covered in the preceding chapters) are the techniques

for putting the material together so that your paper emphasizes what is important. You will also need to know what makes an attractive appearance and draws and holds the reader's eye. All of this is done through good layout and makeup designed to achieve the best overall appearance and style of the publication and to allow the reader to obtain the maximum information in the shortest time.

Layout is the planning of the position and page that each piece of copy or art will occupy in your publication. This includes your choosing the styles and sizes of headlines desired, the kinds and sizes of type to be used and deciding how to use them, and indicating these plans on the layout sheets.

Makeup is normally the execution of that layout by the publisher (the compositor), although sometimes the terms *layout* and *makeup* are used interchangeably. For instance, the name "makeup editor" is used on some newspapers instead of "layout editor."

THE DUMMY

Indicating on the layout sheet where each element will be placed (sometimes called dummieing or roughing in) may be done as each segment of material is forwarded to the publisher. Some publishers will even give you rough proofs of galley type, headlines, and art and let you make a paste-up dummy on a layout sheet. Paste-up dummies ensure a high degree of accuracy in page makeup because they give the publisher a better overall picture of what you want. Do not confuse a paste-up dummy with a paste-up for photo-offset work. A paste-up dummy is merely a guide for the publisher; a paste-up for photo-offset is smooth copy to be photographed for printing.

THE BLUEPRINT

The blueprint for a newspaper is its layout sheets, or dummies, on which a detailed plan or sketch shows the arrangement of art, heads and copy to guide the compositor in making up the actual pages. Figure 8-3 is an example of such a dummy, and figure 8-4 shows the finished product that resulted from it.

The layout is an absolute necessity if you are to avoid the amateur editor's nightmare — finding out the day before publication that you have only eight pages of material for a 12-page publication. What is more, if you piece together a publication at the last minute without a layout—throwing in an article here and a

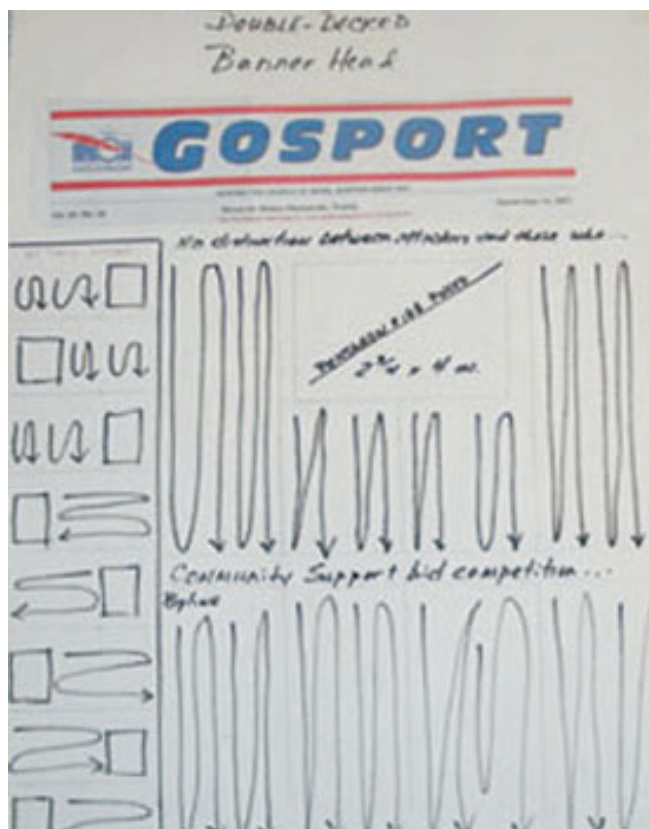


Figure 8-3.—Newspaper blueprint (dummy).



Figure 8-4.—The finished product based on the blueprint. layout in figure 8-3.

picture there—you will come up with a meaningless hodgepodge.

Whether you consider layout an art or simply a mechanical skill, it is clearly an involved, demanding function. You must acquire the following skills to become a good layout editor:

- A keen news sense to know which stories to emphasize and how strongly to emphasize them
- A good working knowledge of typography
- An understanding of graphic design principles and techniques
- A familiarity with modern newspaper design techniques

Layout duties on ship and station newspapers are usually handled by the editor, associate editor and subordinate editors (sports, leisure and so forth). On large commercial dailies, front-page layout is usually done by one of the executive editors—managing editor, news editor or copy editor—to ensure top-level emphasis of particular stories and ideas. Other pages are done by department editors (sport, feature, editorial) and by copy editors.

Remember: your layout is your blueprint, and blueprints are drawn to scale. So start by making up a standard layout sheet, showing the page with its columns drawn either to scale or to size. (A layout sheet of actual page size is the easiest to use.) The layout sheet should be marked for column widths. The top of each page should allow space for showing the issue, the page and the section of the paper. The best way to indicate where a story goes is to write in the story slug (the short identification line that goes right before the writer's name on a piece of copy), as shown in figure 8-5. You can use keys for art and your headlines can be written in.

COPY FITTING

As a layout editor, you must be able to determine an approximate length, in column inches, of a story from typed copy. (A column inch is one inch of copy, measured down the column, regardless of the column width being used.) By making a few simple calculations, you can determine beforehand how much space the typed copy will fill when it is set in type (on the basis of 2 3/8-inch or 14-pica-wide column—six picas equal one inch). For most 10-point type, three typewritten lines, 60 characters wide (on a regular 8 1/2- by 11-inch sheet of paper) equal one column inch

THE AMPHIBIAN
Amphibious Force Pacific Fleet

Pg #1

Record EM Advancements
Predicted for Test Takers *A - line, 2 cl.*

Exams 1/1/1
JOSN Jackson

10 pt, 2 cl. line

Navy Enlisted who have just completed taking the March advancement exams should be happy about a recently-completed planning report which forecasts a "projected" total of more than 122,000 vacancies in pay grades E-4 through E-7 during 6 months covered by the promotion cycle.

The figures indicate promotion spots will be available for more than 5,800 new chiefs, more than 15,000 new first class petty officers, nearly 42,000 second class POs and more than 58,000 third class petty officers.

14

Last August, 103,000 promotions were forecast, and more than 105,000 had earned their new stripes by December. The totals could go higher than the predicted 122,000 when the final returns are in, sometime this summer.

If qualified test-passers can be found to fit the predicted vacancies, the March tests seem likely to produce the largest crop of advancements since the Navy went to the bi-annual promotion cycle.

-more-

Figure 8-5.—Copy as marked for the publisher.

of copy. If other than 10-point body type is used, check with your publisher. Your publisher will provide for you a simple fitting formula for all sizes and styles of typefaces available, taking into consideration such things as variations in column widths, differences in fonts and so forth.

While it seems easier to simply take a story file from a disk, insert it into your software and then make the story fit your space, it is recommended that you plan your layout ahead of time using the layout steps mentioned previously so that you become familiar with the method.

Before forwarding your copy to the publisher, mark it clearly with all necessary instructions (guidelines) for the typesetter. If the publisher is going to make up the entire page from your layout plan, a piece of copy must contain the following notations:

- A key to its position in the layout (shown by the slug on the story and the slug on the dummy).
- The type and size of headline according to a headline chart (see chapter 9).

- The specifics on the size and style of typeface (if it varies from the standard body type previously agreed upon between you and the publisher).
- The column width (one column, two columns and so forth, should be designated by picas to avoid confusion with column inch measurements).

Once your layout is completed, you should be able to relax. A good publisher can make up your pages exactly as you want them from your blueprint, as long as you have provided the necessary information.

This section has covered layout techniques for offset printing, but most of the basic ideas covered here also can be applied to desktop publishing, including brochures, newsletters, Familygrams, newspapers and web sites.

GRAPHICS AND IMAGES

Desktop publishing software has made the insertion of photos and graphics into your publication, one of the most tedious and time-consuming tasks in the past, into one of the easiest.

Images can be stored on a computer's hard drive or on a disk, and easily inserted into the software program. In this computer-literate society, almost anyone can take and process digital images. But in newspaper and other publication processing, images almost always need some sort of editing to fit the space allotted in your publication. Whether it be enlarging, cropping or fixing the color (or black and white) resolution of your photos or graphics, you will rely heavily upon another computer software program to edit these images.

PRINCIPLES OF IMAGE EDITING

It is important to remember that even though you may be working with a digital image instead of a photograph taken with a 35mm Single Lens Reflex (SLR) camera, there are many rules you need to follow to process your images correctly. There are also several steps you should take to screen your photos for improprieties and security violations, which we will cover later in this chapter.

All the rules of basic photography still apply when it comes to shooting with a digital camera instead of an SLR camera. Framing, composition, lighting and the rule of thirds will always be the parameters that you will use to judge the value and the quality of the photographs you shoot.

The following sections address cropping photographs that will be scanned for insertion into your publication. Although the old method of cropping and scaling may seem outdated because of today's technology, it is still important for the staff journalist to know and understand the basic principles applied.

CROPPING

Cropping is used when you only want to reproduce a portion of a picture. Pictures are cropped for the size, emphasis and composition desired. They are also cropped to focus on one specific area to achieve a desired effect in makeup. A picture can be cropped to show the hugeness or smallness of the topic. It can also be cropped to delete a dead area.

Cropping Concerns

As a public affairs practitioner, your first responsibility is to make sure security, accuracy, propriety and policy are not violated when photographs are cropped. These areas are explained in the following text.

SECURITY.—During exercises, operations plans, maps, charts and equipment can be compromised easily by a photographer. Access is usually limited and photographers are kept away from secure areas, but breaches of security may occur in the heat of battle.

As you have heard before, "Operational security is everyone's business." When cropping a photograph for reproduction in your newspaper, you should be aware especially of the background areas that might reveal classified information. Remember—exercises test war plans, and those plans cannot be compromised.

ACCURACY.—Make sure the photograph reflects reality. A photograph taken from the wrong angle or at the wrong time can, in fact, misrepresent the facts of the story. A road race picture taken at the finish line can show the second place finisher ahead of the winner, if taken from the wrong angle. A sneeze or facial twitch during a somber ceremony can make the subject look like a fool in addition to misrepresenting the story.

PROPRIETY.—Beauty pageant swimsuit competitions, a Sailor in an embarrassing pose and ethnic misrepresentations are but a few of the many propriety violations you might face when cropping a

photograph. Although a photo editor should catch such violations during the process of photograph selection, you also must check for violations in the cropping phase.

POLICY.—Policy considerations are described, but are not limited to, the provisions of *PA Regs.* The DoD and DoN have release authority over certain types of information. Information on weapons systems, controversial national and international subjects and certain Navy contracts will have to be approved for release.

In overseas locations, local policies come into play. Photographs of antigovernment protests in your host country, for example, normally should not be taken in the first place. If you allow the photograph to be published in your newspaper, no matter how good your cropping job, you may enrage officials of the host country and your superiors. Policy considerations also include uniform violations, unsafe acts and promotional activities favoring one organization over another.

Distractions

Distractions come in the form of anything that takes the eye away from the center of interest and action taking place. It could be a spectator in the stands at a softball game or a student looking away from the instructor in a class. It could be anything that detracts from the purpose of the photograph. You must eliminate portions of a photograph that do not contribute to good composition.

When cropping photographs, narrow the cropped area to the center of interest as much as possible. The rule of thumb is to crop ruthlessly and enlarge generously.

Try to limit the number of people in the photograph to three, or only those necessary to tell the story. When cropping people, do not crop them at the neck, waist, knees or other joints.

Dead Space

To avoid unnecessary dead space in the photograph, you should keep the center of interest contained. However, in cropping out dead space, leave enough space to accommodate the action of the center of interest. For example, if a car is traveling to the left of the photograph, leave room on the left for the vehicle to travel. Do not cut it off at the front bumper. The car needs dead space in which to travel.

If the subject or center of interest in a photograph is looking to the right, you must allow enough dead space for him to look into. Be careful not to allow too much dead space in a photograph. Too much background may make the center of interest get lost or not stand out.

If you are working with a printed photograph, before scanning the image, the cropping marks are made at or near the corners of the photograph, as shown in figure 8-6. A china marker normally works best when making your cropping marks in the borders of photographs. China markers allow you to make changes without difficulty and mess.

Aesthetics

The aesthetics, or beauty of the photograph should be improved by cropping. The rule of thirds (fig. 8-7) suggests that the center of interest be positioned roughly at one of the four intersections created by equally spaced horizontal and vertical lines. These lines divide the photograph into horizontal and vertical thirds. When the subject is centered in the photograph, as is frequently done by amateur photographers, the photograph is often static and boring.

When you consider aesthetics, cropping should be based on the movement of the subject, leading lines, lines of force and other framing considerations that are explained in more detail in chapter 12.

Shapes

The shape of the photograph also must be considered before it is cropped. Normally, a 3:5 proportion is most pleasing to the eye. Proportions of 2:3, 3:4, 4:5, 4:7 and so on, are acceptable proportions. Simply cropping a photograph to make it square (3:3, for example) leaves a newspaper page dotted with square blocks and results in an unattractive page.

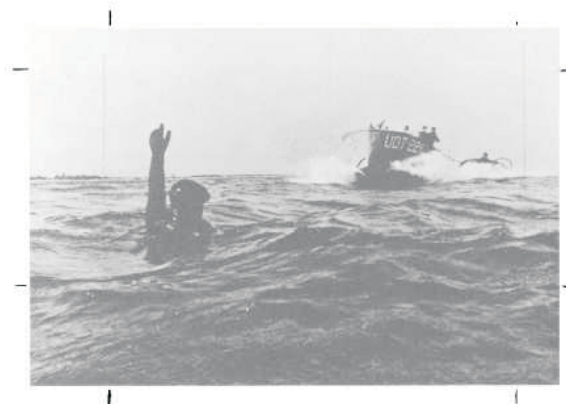


Figure 8-6.—Cropping marks on a photograph.

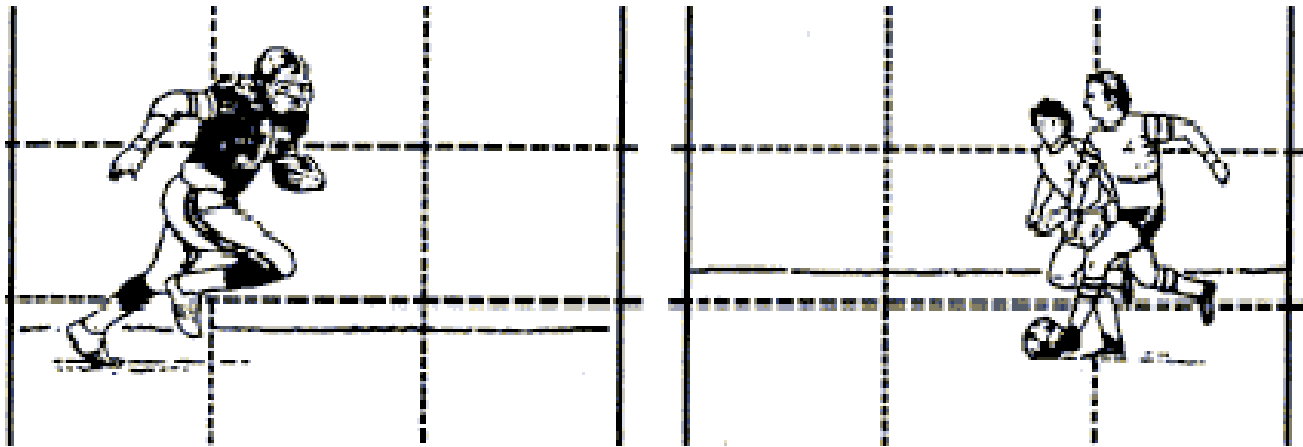


Figure 8-7.—The rule of thirds.

When you are considering the shape of a photograph, there are times when a strong vertical or horizontal will improve the look of a newspaper. Obvious examples where extreme horizontals and verticals work well include tall buildings, parades, travel photo features and many sporting events.

Photo Within a Photo

Careful examination of a print may allow you to extract two or more reproduction-quality photographs from a single print. There may be two centers of interest or separate actions taking place that separately qualify as photographs. In a football game, an offensive lineman may be blocking the star defensive end, while a wide receiver catches a short pass across the middle of the playing field. Both actions could be stand-alone photographs.

Cropping Methods

To manually crop a picture, you must mark off the unessential parts. This can be done by cutting, masking or using cropping L's.

CUTTING.—If the photograph or piece of artwork is expendable (you have several originals or the negative), you can do your cropping with a paper cutter. This is the most accurate method and the one most commonly used by ship and station newspaper editors.

MASKING.—When a section of a valuable photograph is to be reproduced, you may mask it by covering the picture face with a sheet of paper that has a window cut out to expose the desired area.

CROPPING L's.—Cropping L's (fig. 8-8) are useful tools when you are narrowing a photograph to its center of interest. Cropping L's are L-shaped cardboard or plastic devices, often black in color, used to eliminate dead space. When you place them over a photograph in the form of a rectangle, you can adjust them and see the effects of cropping before a crop is actually made.

Digital Cropping. —Using the cropping icon on your software editing program, highlight the area that you want the photograph to display. Your software program will ask you to set the size, style and format settings for your images and then automatically process them based on your input.

Photograph Dimensions

Before you can scale a photograph (explained later), you normally have to know the following three dimensions:

- Cropped width

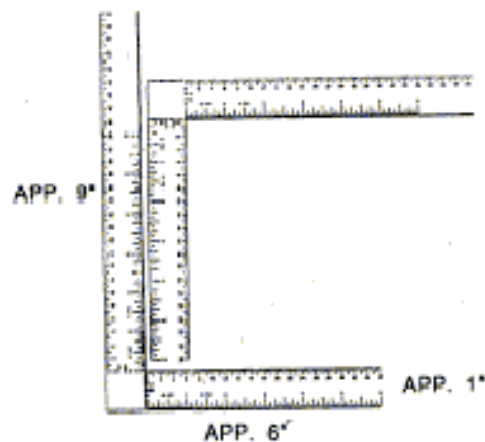


Figure 8-8.—Cropping L's.

- Cropped depth
- Reproduction width or reproduction depth

CROPPED WIDTH (CW).—The cropped width is the width of the photograph, in picas, columns or a local unit of measurement, after cropping is completed. In the manual scaling of photographs and artwork, width is usually represented in picas, columns or the local unit of measurement. Width is not usually represented in inches because most other horizontal measurements in newspaper design are in picas, columns or a local unit of measurement (such as cicerós). In digital cropping, the width or height of your images may be measured in inches or in pixels. Using either method will require you to have a strong grasp and understanding of the photo or image software program you are using.

CROPPED DEPTH (CD).— The cropped depth is the depth of the photograph after cropping has been completed. Depth is usually represented in inches, **not** picas or columns.

REPRODUCTION WIDTH (RW).—The reproduction width is the actual width of the photograph for reproduction. This is the predetermined space allotted for the photograph before cropping or scaling takes place. The measurement usually is given by columns: two columns, three columns and so on. You must know the standard width of the column and alley and the space between the columns (one pica, one-eighth inch and so on) to get an accurate reproduction width.

You will use the three known dimensions (cropped width, cropped depth and reproduction width) to determine the unknown dimension, usually the reproductive depth.

REPRODUCTION DEPTH (RD).—The reproduction depth is the number of inches deep the photograph will be after enlarging or reducing it to fit in the space allotted for it on the newspaper page.

On occasion, you may set aside a vertical space to fill in your newspaper page design. In such a case, you are using the cropped width, cropped depth and reproduction depth to establish the unknown reproduction width. This reverse procedure is used frequently in photo layouts where standard column widths may not apply.

SCALING

Scaling is the act of either enlarging or reducing a cropped photograph or artwork to fit a hole on a

newspaper page. Since you must first know the cropped dimensions, you cannot scale a photograph before you crop it. Once you know the dimensions, then you can scale the photograph to fit that hole snugly.

In scaling a photograph, you are trying to determine either the reproduction depth or the reproduction width. As you enlarge or reduce the photograph to reproduction width, the reproduction depth will change proportionately. Consequently, when you scale for reproduction depth, the reproduction width will change proportionately.

It is important to note that scaling photographs or images on a computer makes all the difference in the world of the quality of photographs or images you will have. Images should be reduced or enlarged before inserting them into your publication. This will maintain the proper settings of the image. Resizing images after they are inserted into your publication could result in distorted, out-of-focus or unproportional images in your publication.

When scaling digital images, you will need to use a software program that is not only one you can understand, but also one fully compatible with your publication's desktop software program.

Images can be cropped and scaled in a matter of minutes using digital software, but the basic rules of photography still apply. A good rule to remember is "Crop first, then insert." This will ensure that the final image product is the same as the one you ended up with when you cropped (or scaled) it back at the office.

The two simple manual ways to scale a photograph or artwork to size are as follows:

- The diagonal method
- The proportional scale method

The Diagonal Method

The diagonal method of scaling a photograph or artwork is a mechanical procedure that does not require great mathematical skill or special tools. Diagonally scaling for reduction (fig. 8-9) includes five steps as follows:

1. On a separate sheet of paper, draw a rectangle that has the same dimensions as the **cropped** photograph/artwork.
2. Draw a diagonal line from the lower-left corner through the upper-right corner of the rectangle.

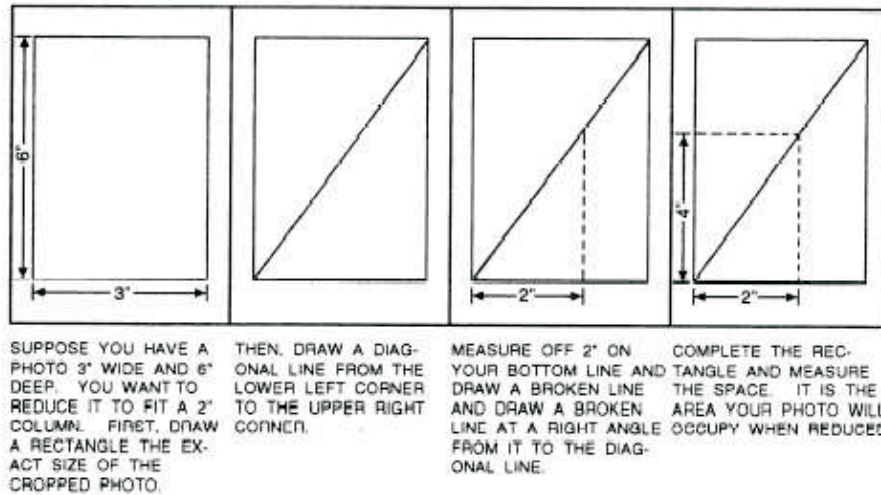


Figure 8-9.—Scaling for reduction.

3. Measure from the lower-left corner, along the baseline, the width desired for the picture. Make the baseline extend to that point.

4. Draw a broken vertical line at a right angle from it to the diagonal line. Stop where the broken line and diagonal line intersect.

5. Complete the rectangle and measure the space. This is the area your photograph will occupy when it is reduced.

Diagonally scaling for enlargement (fig. 8-10) is slightly different from the procedure used for reduction. It contains the following five steps:

1. On a separate sheet of paper, draw a rectangle that has the same dimensions as the **cropped** photograph/ artwork.

2. Draw a diagonal line from the lower-left corner through the upper-right corner of the rectangle.

3. Extend the baseline with a broken line to the width desired for the picture.

4. Draw a broken vertical line at a right angle from it to the diagonal line as before. Extend the diagonal line to meet the broken line.

5. Complete the rectangle and measure the space. This is the area your photograph will occupy when it is enlarged.

The Proportional Scale Method

Perhaps the most common way of scaling is the proportional scale method. The proportional scale (fig. 8-11) has a movable inner disk with a window

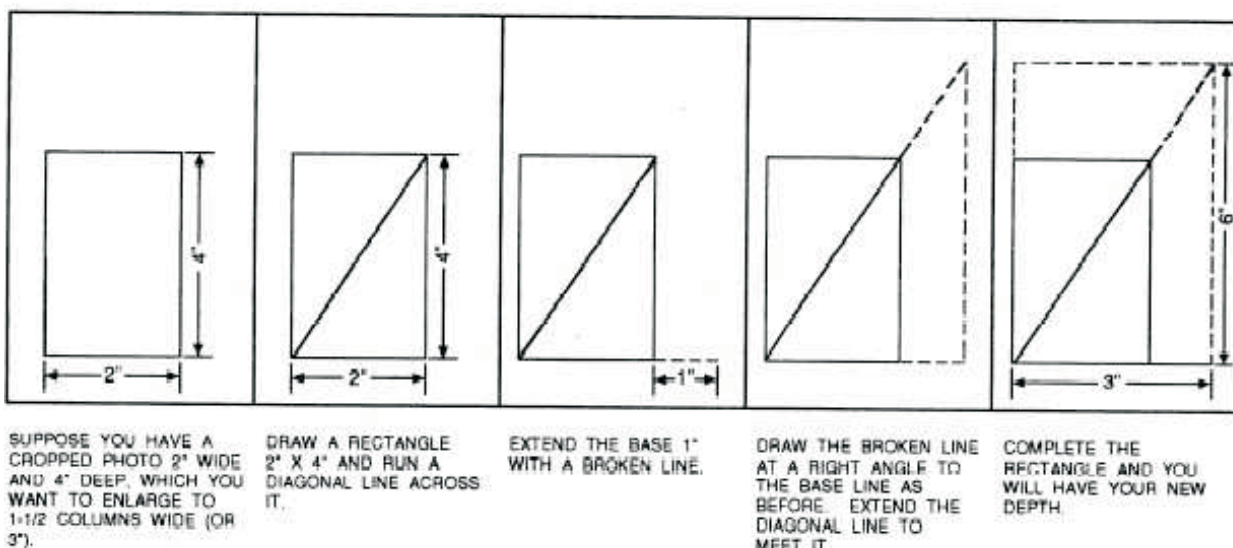


Figure 8-10.—Scaling for enlargement.

mounted on an outer disk. Both disks have unit graduations from 1 to 100. Any unit of measurement can be used with the proportional scale.

To use the scale, you need to know three of the four measurements involved in scaling. You must know the cropped width, cropped depth and reproduction width (or the reproduction depth if you are establishing a reproduction width).

Use your proportional scale to determine the reproduction depth in the following example:

PHOTOGRAPH DIMENSIONS: The cropped width is 5 inches and the cropped depth is 2.5 inches. It will be used in a one-column, 13.5 pica-wide space.

STEP 1: Align the cropped width (5 inches) on the **inner** disk, with the reproduction width (2 inches) on the outer disk.

STEP 2: Find the cropped depth (4 inches) on the **inner** disk and read the reproduction depth opposite it on the **outer** disk. The reproduction depth is 2 inches.

The window on the inner disk displays the “percentage of original size.” In the preceding example, the photograph will be reduced to 50 percent of the cropped size. Percentages less than 100 indicate a reduced size; those higher than 100 mean the photograph will be enlarged. If you work for a CE or funded newspaper, your printing contract may stipulate maximum reduction and enlargement percentages and sizes.

Marking Photographs

Photographs or other artwork must be marked appropriately so the publisher will know exactly what you want. Instructions are usually printed on the reverse of a photograph with a china marker. For instance, you mark a photograph “1-A, reduce to 24 picas by 5 inches” (width is always given first in art sizes). The “1-A” is a way of letting the publisher know you want the photograph to appear on page 1, fitted into a space designated “A” on the layout. It also tells the publisher that you have scaled the photograph, and when reproduced, it will occupy a space 24 picas

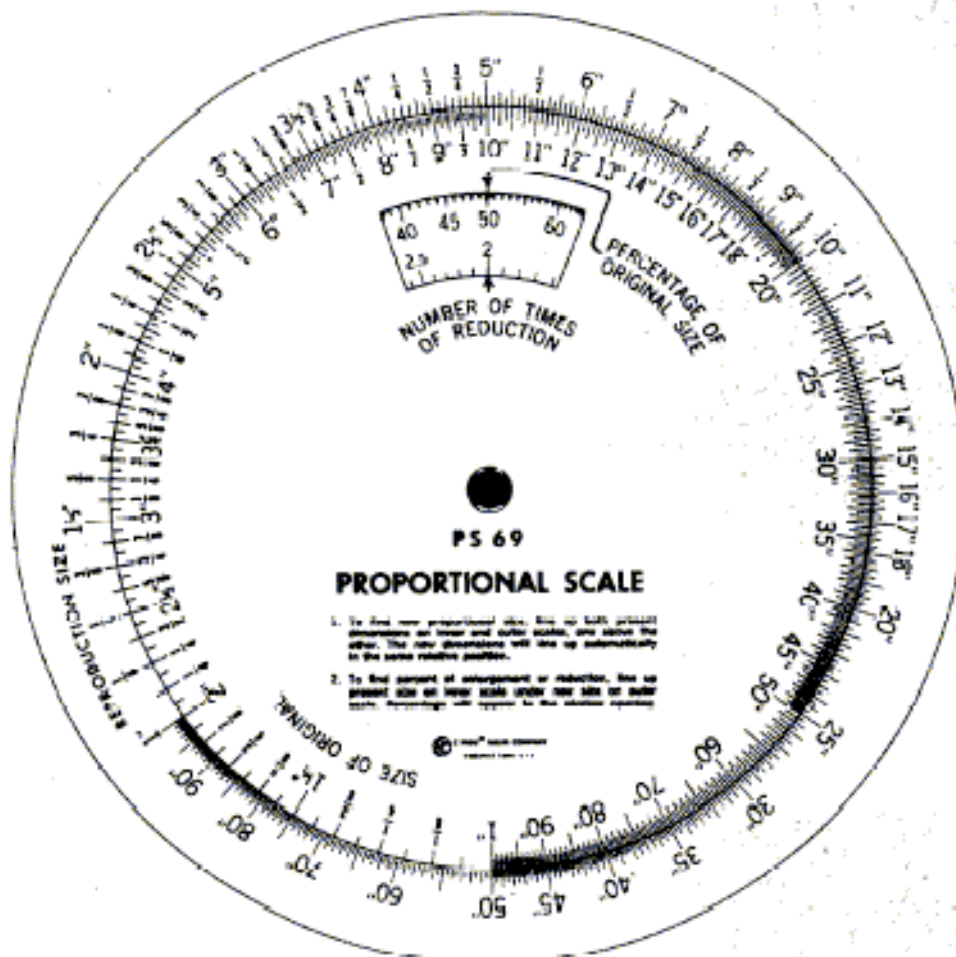


Figure 8-11.— Proportional scale.

wide and 5 inches deep; or you might simply use slugs to match a story with a related head, art and outline. Usually, an editor devises the “key” system to be used.

TYPOGRAPHY

Typography is the art of printing with type. It involves the style, arrangement and appearance of the printed page. As editor of a ship or station newspaper, you should be familiar with a few important type-related terms.

Printers’ Measurements

Type size is measured in **points**. One point is approximately one seventy-second of an inch. Twelve points equal one pica (remember—six picas equal one inch). Points are used to measure the height of a letter of type. The width of a line of type is given in picas. Most newspaper columns are about 12 picas (2 inches) wide. Type ranges in size from 3 to 120 points. Your stories will usually be printed in 8- or 10-point type. Most of your headlines will range from 12 to 36 points. The depth of a column of type or art (measured down the page) is given in inches. A **column inch** is one column wide and 1 inch deep; a photograph two columns wide and 3 inches deep occupies six column inches.

This method of measuring copy is still used today throughout the newspaper industry despite the use of desktop publishing software. All newspaper editors should know how to measure copy, and the various type (or font) families available for use in their publications.

Type Classification

Did you ever stop to think how many different kinds of handwriting you come across in a single day? Some are large and bold, some are weak, some small, some clear and some are almost illegible. Type styles, called **typefaces**, are much the same.

The first concern of selecting a type is, of course, clarity. Type must be legible. However, there is more to it than that. Like handwriting, typefaces reflect certain characteristics, such as refinement, dignity, boldness or strength. Properly used, they can convey the feeling or mood of a message. They may be warm, brisk, dignified, modern or old-fashioned—whatever is needed to emphasize or suggest the thoughts expressed in copy.

Type can be used to attract the reader’s attention. The use of large boldfaces is one of the most effective ways of stopping the eye. Large, boldface type, however, is difficult to read. It should be limited to a few words and should be followed by smaller, more legible typefaces that invite reading.

Most kinds of type have both capitals and small letters. Publishers use the term **uppercase** for capitals and **lowercase** for small letters. These terms originated in early printshops where type was set by hand. The less-used capital letters were stored in an upper storage case and the frequently-used small letters in a lower one.

As early as the seventeenth century, publishers knew they had to organize their typefaces efficiently. They arranged their typefaces into main type classes. The six main classes of type (fig. 8-12) are as follows:

- Roman
- Gothic
- Text
- Italics
- Script
- Contemporary

ROMAN.—Roman is the type most commonly used for the text of magazines, newspapers and books. It is chosen because most readers are familiar with it and because it is the easiest to read in smaller sizes and in lengthy articles.

Roman types are divided into two classifications: **modern** and **old style**. The chief difference between modern and old style roman is found in the serifs (the small cross strokes at the ends of the main lines of a

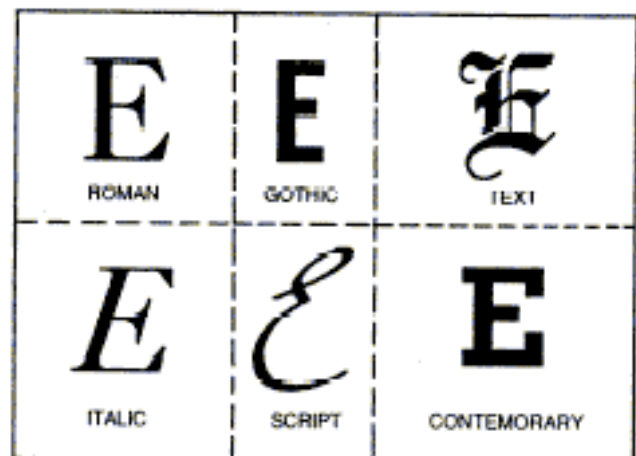


Figure 8-12.—The six main classes of type.

letter). The old style letter has soft, rounded serifs, while the modern letter has heavier shadings and thin, clean-cut hairlines.

GOTHIC.— Study the difference between the roman letter and the gothic letter in figure 8-12. You will notice that where the roman letter is composed of a series of thick and thin lines, the gothic letter is constructed of lines of even weight. It has no serifs (known in the printing profession as “sans serif”); it is perfectly plain. Gothic type is popular for use on posters and as headlines.

TEXT.— Text type is sometimes referred to as “Old English.” Text was the first type style used in the history of printing. Although it is still used frequently, it is generally limited to a few lines of copy. As far as newspaper work is concerned, it should be limited to something formal, such as religious announcements, prayers, programs and invitations.

ITALIC.—In italic type, the letters are slanted and made to match almost every roman, gothic and contemporary type style in use today. Italic is used in text matter to show emphasis. Although italic was originally used for text, it was rather hard to read in lengthy articles and it is seldom used for this purpose today.

SCRIPT.—Script typefaces have little connecting links, or kerns, that combine the letters and give them the appearance of handwriting. Script is suitable for announcements and invitations.

CONTEMPORARY.—The past 50 years have been highly significant in typographic history. The old gothics have had their faces lifted, and new streamlined faces have appeared everywhere. Contemporary type refers to the thousands of modern, artistic faces used in a variety of ways, such as advertisements, labels on cans and boxes, display composition and television commercials. The example of contemporary type shown in figure 8-12 is bold (heavy block), but the same group contains lightface letters. In general, modern types feature more lightfaces than bold.

Type Families

From classes, type is further categorized into typefaces that are similar in design, though not exactly alike. These groups are called type families. Each type family has a name and a certain basic family resemblance. Many type families are named for their creators, such as Bodoni and Goudy. Some names come from regions or nations: Caledonia and Old

English. Some type families include dozens of typefaces, all different in some way, yet all having general characteristics that unmistakably identify them as members of their particular family, such as the Bodoni family in figure 8-13.

Type Series

The next type category refers to the weight, width and angle of type. This category is called type series. When a series carries only the family name, with no adjectives indicating variations in width, weight or angle, assume that the type is normal. The usual distinction is between big letters (called display or headline type) and small letters (called body or text type).

Type Font

Type font is the next category and has all the letters, numbers and characters necessary to set copy in one size of type. However, a modern newspaper uses



Figure 8-13.—Various typefaces in the Bodoni family.

either one or two families of compatible type to achieve variety in the series choice and point size.

INITIAL LETTERS

Initial letters are large, ornate, capital letters that are sometimes used at the beginning of a paragraph to dress up the page and add white space. They come in all sorts of styles. When an initial letter is used, the remainder of the word it begins with is generally capitalized. You may use either regular capital letters or slightly smaller capital letters of the same style of type.

ORNAMENTS

Ornaments, such as stars (called “dingbats” in publisher’s lingo) and dots (called “bullets”), are used to add interest and beauty to a job. When using ornaments, you should always select something that goes well with the style of type you are using. Above all, do not overdo them. Fancy types and decorations should be used only if they make your newspaper page more effective. Decoration, just for decoration’s sake, was abandoned at the turn of the century in favor of simple harmony and balance.

BORDERS

You should select borders and layout lines with the same care you use to select a typeface, because the same general principles of typography apply. Figure 8-14 shows some typical ornaments and borders.

A study of type size and classifications could take up an entire book. The basics presented here will help you both in preparing an attractive publication and in conversing with the publisher. For all practical purposes, all you have to know is the answer to the question, “What kind of type is available to me?” A trip to your publisher or local printshop will give you that answer.

NEWSPAPER MAKEUP

LEARNING OBJECTIVE: *Recognize the objectives of a ship or station newspaper makeup and the techniques used to meet them.*

“Newspaper makeup” is defined as the design of a newspaper page or the manner in which pictures, headlines and news stories are arranged on a page. The objectives of newspaper makeup are as follows:

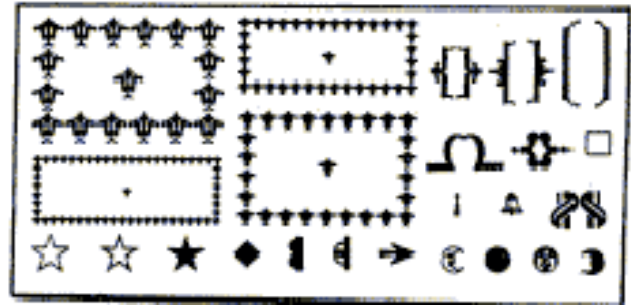


Figure 8-14.—Ornaments, borders and dingbats.

- To indicate the importance of the news
- To make the page easy to read
- To make the page attractive

FRONT-PAGE FOCAL POINT

Each page of a newspaper has a focal point —a point on the page to which the reader normally looks for the most important story. Any area can be the focal point, depending on the chosen design. Advertisements can also dictate the focal points of the inside pages of a newspaper.

On the front page of some daily newspapers, the focal point is often in the upper right-hand corner, a now-dated practice that reflects the style of a bygone era. Americans, although trained to read from left to right and top to bottom, greatly altered this pattern for many years with respect to their newspaper reading habits. Through the use of banner headlines that extended more than half the width of the page, readers were trained to seek the upper right-hand corner of the front page. Newspaper readers begin their reading by following the banner headline across the page and continuing down the right-hand side of the page. Therefore, many newspaper readers have come to expect the most important story in each issue to appear or touch in the upper right-hand corner of the front page.

The right-hand focal point is not as important to makeup editors as in the past, since fewer newspapers use banner headlines on the lead story. However, many newspapers still carry the most important story in the upper right-hand corner of the front page because of established practices.

Today, a large percentage of newspaper editors use the upper left-hand corner as the focal point. These editors think that readers, trained in school to read other literature from left to right, prefer their newspapers to be designed that way, too. A few editors

still use other areas, such as the upper center of the front page as the focal point. Only time will tell which is best, if indeed, there is a “best.”

INSIDE PAGE FOCAL POINT

The focal point on inside pages is the upper left-hand corner if there are no advertisements. Therefore, the focal point is influenced by a newspaper reader’s natural sight tendencies and is not hampered by customs.

On inside pages with advertising, the way ads are placed on the page influences the position of the focal point. The focal point is always opposite the lower corner of the page that is anchored by the largest mass of advertising.

MAKEUP LINES

You will use the following four basic types of “lines” in newspaper makeup:

- Vertical
- Diagonal
- Circular
- Horizontal

Vertical Line

The vertical line is used to get the reader to read up and down the page. The line is carried out on the page by displaying stories, headlines and pictures vertically on the page. It is characteristic of the makeup of newspapers in early America and is still used to a limited degree in making up newspapers today.

Diagonal Line

The diagonal line is used in newspaper makeup to get the reader to read through the page. The line is carried out on the page by displaying headlines and pictures so together they form a diagonal line from the upper left-hand corner to the lower right-hand corner of the page. Also, a page can contain a double diagonal by forming another diagonal in the opposite direction from the first. The diagonal line lends a sense of rhythm to the page. It is characteristic of many of today’s newspapers.

Circular Line

The circular line is used in newspaper makeup in an attempt to get the reader to read around the page. The line is carried out on the page by displaying stories, headlines and pictures on the page so the reader sees each as being equally important. This creates a tendency on the reader’s part to read all the stories. The circular line is used to a limited degree in modern newspapers.

Horizontal Line

The horizontal line is used in newspaper makeup to get the reader to read back and forth on the page. The line is carried out by displaying stories, headlines and pictures horizontally on the page. The horizontal line is a post-World War II development and it is probably the most striking change in the appearance of newspapers in this century. It is a characteristic of many present-day newspapers.

NEWSPAPER DESIGN CONCEPTS

LEARNING OBJECTIVE: *Recall the design concepts used in ship or station newspaper makeup.*

Successfully designing a newspaper page encompasses more than experimentation. It is actually a calculated art evidenced by the following five newspaper design concepts:

- Balance
- Contrast
- Rhythm
- Unity
- Harmony

BALANCE

In the balance concept, the page designer (hereafter referred to as the editor, although it may be any member of the newspaper staff performing this function) tries to balance heads against heads, pictures against pictures, stories against stories and artwork against artwork. This balance, however, is a relative balance, and it is not measurable but is something gauged in the viewer’s mind. Therefore, the editor has to sense, rather than measure, the balance for a page. This perception is one developed by experience. The editor looks at the page as a whole and tries to achieve a

relative balance in either the horizontal or vertical halves of the page.

CONTRAST

In the contrast concept, the editor strives to separate display items on the page so each gets the attention it deserves. The editor uses type, headlines, pictures, white space and color to achieve contrast.

For example, the editor can achieve contrast with type by using regular type with boldface type. Headlines also can be contrasted by using bold, black heads or by displaying roman type with italic type. The editor can achieve contrast with pictures by using verticals with horizontals, small column widths with large column widths or dark and light photographs. Further, the editor can achieve contrast through color by displaying black type with color boxes, pictures and heads.

RHYTHM

By using the rhythm concept, the editor tries to get the reader to move from one element to another element on the page. Rhythm is achieved in newspaper makeup by staggering headlines, stories and pictures on the page.

UNITY

The unity concept of newspaper makeup is used to tie the page together; therefore, the page is not divided into one, two or more sections.

A page that lacks unity is called a paneled page. You can avoid paneled pages by crossing the column gutters (space between columns) with headlines and pictures in the middle areas of the page.

HARMONY

The harmony concept is used to give a newspaper a standard appearance from day to day. Harmony generally refers to typographic harmony. This means using one typeface for body type and a contrasting typeface for cutlines. Headlines should have the same typeface as the body type and may be varied by weight and the use of italics on occasion.

ELEMENTS OF NEWSPAPER MAKEUP

LEARNING OBJECTIVE: *Identify the individual elements used in ship or station newspaper makeup.*

Thus far, all the subject matter in this chapter has dealt with the tools and materials available for presenting the reader of a ship or station newspaper with an attractive, interesting and convenient look at the news. Whether you achieve the desired product will depend on how these tools and materials are used in assembling your newspaper.

If you are the person responsible for laying out, making up or actually pasting up your newspaper, you should adopt a basic typographic plan or style. First, read all of the copy being considered for the newspaper. Study the pictures and other artwork closely. Visualize the news story message or ideas, and the nature of the artwork as a whole. Decide the relative importance of the elements; then put the entire page together using the individual components of newspaper makeup (fig. 8-15).

Makeup creates recognition of a newspaper. A good editor varies the makeup in each issue, so the readers are not bored with the newspaper. On the other hand, each page will resemble the previous editions enough so the reader can immediately identify it.

The following components help the reader identify a newspaper:

- Nameplate
- Flags
- Masthead
- Headlines
- Pictures
- White, gray and black
- Rules

NAMEPLATE

The nameplate should be simple in design, attractive and in harmony with the character of the paper. Its type should either harmonize or contrast with the headline type. The nameplate can combine type and artwork together. The artwork, however, should not make the nameplate jumbled and hard to read. Figure 8-16 shows several examples of nameplates.

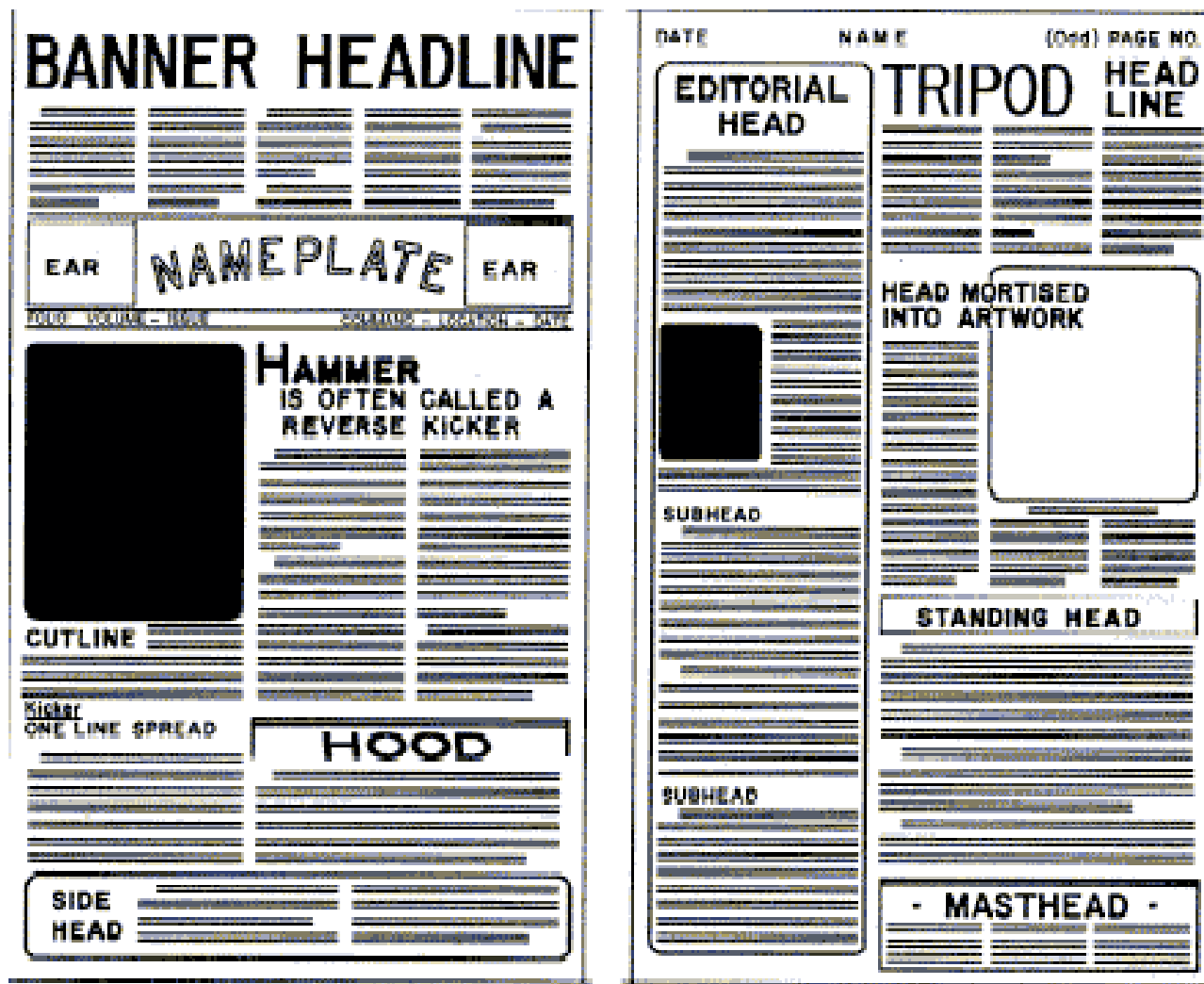


Figure 8-15.—Individual components of newspaper makeup.

The nameplate can be made to float on the page. Although a nameplate that runs the entire width of the page can be made to float, a floating nameplate usually occupies two or three columns and is placed anywhere in the upper third of the page.

FLAGS

A flag of the newspaper is a display used by a newspaper to indicate section pages or special pages, such as editorial, sports and family pages. Just like nameplates, a flag should not dominate its page and should appear above the fold. Flags can also be floated. (NOTE: Some authorities maintain that a flag is the same as a nameplate and identifies a section head as a “section logo.” We do not.)

MASTHEAD

A masthead of the newspaper is often referred to, incorrectly, as a nameplate. A masthead is a statement

that should appear in every edition to give information about the publication.

The masthead of a CE or funded military newspaper includes the following elements:

- The name of the officer in command or head of the activity.
- The name of the newspaper and the producing command.
- The following statement: “The editorial content of this newspaper is prepared, edited and provided by the public affairs office of (command).”
- The name, rank or rate (if military) and editorial position on the newspaper staff or all personnel assigned newspaper production and editing duties. This is listed under the heading “(command) Editorial Staff.”

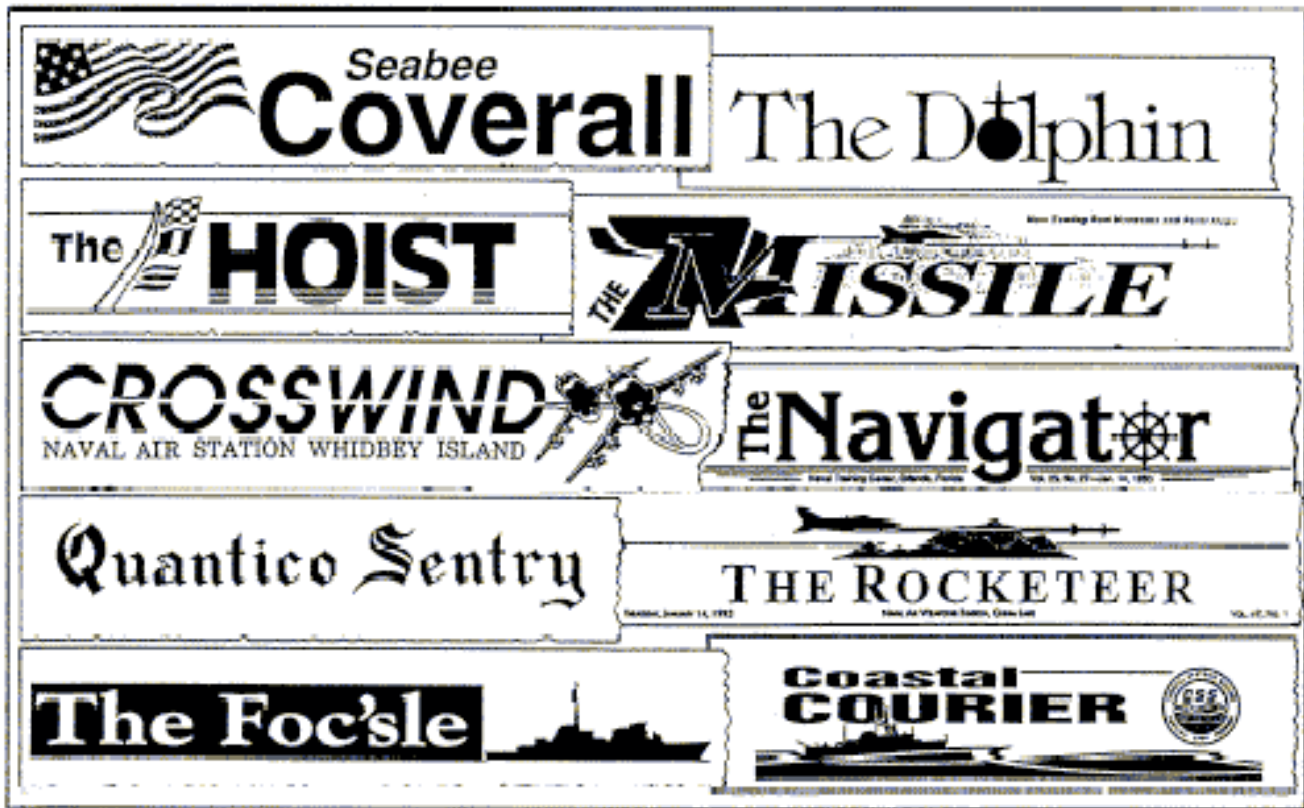


Figure 8-16.—Newspaper nameplates.

- The following disclaimer: “This newspaper is an authorized publication for members of the military services (add the words ”stationed overseas,” “at sea” or “and their families” if applicable). Its contents do not necessarily reflect the official views of the U.S. Government, the Department of Defense or the U.S. Navy and do not imply endorsement thereof.”
 - The following disclaimer (for CE newspapers only): “The appearance of advertising in this newspaper, including inserts of supplements, does not constitute endorsement by the Department of Defense, the U.S. Navy, (name of command) or (name of publisher) of the products and services advertised.”
 - “Everything advertised in this newspaper shall be made available for purchase, use or patronage without regard to race, color, religion, gender, national origin, age, marital status, physical handicap, political affiliation or any other nonmerit factor of the purchaser, user or patron. If a violation or rejection of this equal opportunity policy by an advertiser is confirmed, the publisher shall refuse to print advertising from that source until the violation is corrected.”
 - “Published by (name of publisher), a private firm in no way connected with the DoD or U.S. Navy, under exclusive contract with the U.S. Navy.”
- For second-class mailing, postal regulations require a masthead to be within the first five pages of the newspaper. These regulations also require that the masthead contain the following information:
- Name of publication
 - Date of issue
 - Frequency of publication
 - Issue number
 - Subscription price (if applicable)
 - Name and address of the publisher
 - Second-class mailing imprint
- The masthead of CE or funded newspapers must be printed in type not smaller than six point. Additional information on mastheads may be found in *PA Regs* or *Ship or Station Newspaper/Civilian Enterprise (CE) Publications*, NAVPUBINST 5600.42.

HEADLINES

Headlines, or simply heads, contribute to all five concepts of newspaper design —balance, contrast, rhythm, unity and harmony.

The headline for one story should be separated from that of another. Heads that appear side by side (called “tombstones”) could be read as one head and confuse the reader. Tombstoning also prevents each head from gaining its share of attention.

When headlines and pictures are used together, they should be placed so the reader is not confused by their positions. You should not place a picture between a headline and a story, because the reader might begin reading the cutline thinking it is the first paragraph of the story.

Heads of the same column width should not be placed lower on the page than a smaller one, or higher on the page than a larger one. This does not mean that the bottom of the page cannot contain a large multicolumn head. It only means that heads of the same width should decrease in point size as they descend the page.

Do not run stories out from under their heads. This creates a readability problem by confusing the reader about where to find and finish reading the rest of the story.

A story can be wrapped (to continue a story from one column to the next) under its main head, or lead, to achieve variation. A story is always turned to the right from its main part. A turn running above the headline of the story could confuse the reader and cause the individual to abandon the item.

A story requiring a “jump,” or continuation, to another page should be split in midsentence, never at a period of a paragraph.

For example, “(Continued on page __, col. __)” will direct the reader adequately. The jumped portion should carry a brief head, or key word, taken from the main head to identify it as a continuation. The “jump head” should be keyed to the same type style and face, although it seldom will be in the same type size, as the original headline. Never jump a story on a hyphenated word, or carry over the last line of a paragraph.

PICTURES AND IMAGES

Readability studies have shown that pictures (images) are one of the most popular elements in a

newspaper. For that reason alone, important images should be large and positioned in a manner that maximizes their display.

Images of two-column widths or more should be placed on a page so they stand or hang from something that gives them support. An image can stand on a headline, another picture or the bottom of the page. Images can hang from a headline, another image or the top of the page. An image of two-column widths or more should not float in copy, but a one-column-wide picture or smaller can float in copy.

Images and headlines that are not related should be separated by more than a rule, if the possibility exists that, when placed together, they are humorous or in bad taste.

Avoid any clashing items. For example, do not place an accident story next to a mortuary advertisement. (Discuss the placement of advertisements with your editor or the CE newspaper publisher.)

If you run two photos, two boxes or a photo and a box side by side, except in cases where the subjects are related, they tend to cancel each other out. It is best to separate unrelated artwork with body type.

Reader’s eyes have a tendency to follow the line of sight of people in pictures. Therefore, if people in a picture look off the page, readers will tend to look off the page. To prevent the reader from doing this, the main subjects in pictures should look straight ahead or into the page. This also holds true for pictures showing action. The motion should go toward the center of the page whenever possible. This reader tendency can be used to your advantage. The line of sight and motion can be used to guide the reader’s eye through a page.

Try to avoid running images on the horizontal fold of a newspaper, because the area along the fold becomes distorted once the newspaper has been folded.

Do not give a photograph more display space than it deserves, especially a “mug shot” (portrait-type, close-up photograph of an individual). Mug shots can float in copy, but it is best if they stand on or hang from something. If a mug shot floats, it is best to float it within a sentence in a paragraph. Mug shots should be accompanied by at least a name line for identification. By omitting the name line, the reader is forced into trying to identify the individual in the picture.

“Thumbnails” also are used in making up newspaper pages. The term refers to half-column mug

shots. A thumbnail is best used when it looks into the story or directly out of the page. A name line, in most cases, should also be used with thumbnails.

WHITE, GRAY AND BLACK

A newspaper page is made up of varying degrees of white, gray, and black. Some pages may contain other colors. A good editor strives for relative balance of colors on a page and will not let any color dominate the page. You will not have any problems with white pages, black pages or any other colored pages; your concern is staying away from gray pages.

There are many ways to relieve grayness, or gray-out, which is created by large areas of body type. One way is to use multicolumn images to break up columns of type. Another way is to use thumbnail images.

Type also can be used effectively to relieve grayness. To break up gray areas in a long story, you can set selected paragraphs in boldface type, if used sparingly. Another method of breaking up long gray stories is to use boldface subheads set about two points larger than your body type size. A third method of using type to break up grayness is to use boldface, all-cap lead-ins. This method is particularly effective in matter set in wider measures. In two-column matter, the first three to five words of the paragraph containing a lead-in can be set in boldface and all caps, and in one-column matter, the first one to three words of the paragraph can be set in boldface and all caps.

The paragraphs to be set in any of these boldfaced methods should be the paragraphs that introduce a new element into the story or ones that contain information of more than usual interest. Two paragraphs using the same boldfaced method should not be run side by side because they tend to cancel each other out. Note that the use of boldface type is not favored by the editors of contemporary newspapers as much as by the editors with traditional leanings. (More about traditional and contemporary designs will be presented later in this chapter.) “Modern” editors rely on the use of different design concepts to eliminate large gray areas on their pages and, consequently, have little use for boldface type, except possibly as subheads.

Other useful devices in breaking up grayness are initial letters (mentioned earlier in this chapter), kickers, and hammerheads (covered in chapter 9) and sandwiches.

A sandwich is a device for handling “reefers” (references to a related story on another page). It is a small, sideless box made with the same rule used for regular boxes. The reefer type in the sandwich should be set in boldface and not be indented. No headline is needed and it should be brief, containing not more than two or three lines.

The sandwich should be placed about 2 1/2 inches deep into the story. Presumably, this practice gives the reader enough time to become interested enough in the subject being addressed to want the related information being offered. The use of the sandwich assumes the reader will immediately turn to the related story, read it, and then return to the original story and continue reading below the sandwich.

Special effects can be obtained with special art, such as boxes and ornaments (art borders around individual stories, announcements and ads or the entire page). These devices are also effective gray breakers but should be used sparingly, so their use does not create a cluttered effect. In using boxes, you can indent a story on all sides and use a box of white space all around the story. You can also indent on all sides of a story and then use a ruled box. Dingbats, once in vogue, are now considered old-fashioned and are shunned by modern editors. White space provides margins to frame your page. Side margins should be the same width, but bottom margins should be about one-fourth wider than your top margins to give your page a lifted look. White space is also used to give breathing room around headlines and pictures in much the same manner as margins frame the page. However, you should make an effort to avoid the appearance of trapped white space. White space should run to the outside of the page.

RULES

Rules are commonly used typographic devices in newspaper makeup. Properly used, they separate unrelated items and unite related ones. The two types of rules used are the column rule and the cutoff rule.

Column Rule

The column rule is a vertical, thin line that runs from the top to the bottom of a newspaper page. Use the column rule to separate columns of type and to separate unrelated items, such as photographs and stories, from the rest of the page. Part of a column can be deleted to indicate that the items joined are related.

Cutoff Rule

A cutoff rule is a horizontal, thin line that runs across one or more columns of a newspaper page, depending on the width of the items to be separated or united. A cutoff rule is used to separate unrelated items, such as boxes, photographs, multicolumn headlines, and advertisements from the rest of the page. A cutoff rule helps the reader's eye turn the corner from where a story ends in one column to where it begins in the next column, except when the story wraps from the bottom of a page; then no cutoff rule is needed.

ADDITIONAL MAKEUP CONSIDERATIONS

Newspapers have other elements that usually appear in each issue and other makeup devices that are used to design newspaper pages. Some of these are described in the following text.

Widows

Avoid having widows at the tops of columns. A widow is an incomplete line, as one that ends a paragraph. When there is a widow, carry two lines to the new column or page.

Wrapping Copy

When you wrap copy, wrap at least 1 inch of copy into the next column. That is approximately six lines of type. Studies have shown that anything less than an inch of copy lacks eye appeal.

When you wrap a story, split paragraphs at the bottom of the column, when possible, to indicate to the reader that the story continues in the next column.

Folio Line

A folio line is an identification line of the newspaper on each page. The folio line on the front page is different from those on inside pages, as described in the following sections.

FRONT-PAGE FOLIO LINE.—A front-page folio line joins the nameplate and consists of the volume number (the number of years the publication has been in print), the issue number (the number of issues published within the present year), command, location (city and state) and date of publication. It does not carry a page number and is usually separated from

the flag by a border and a cutoff rule or by two cutoff rules.

INSIDE PAGE FOLIO LINE.—An inside page folio line generally runs at the top of each page. It also can run as part of a flag that appears on special pages or within the masthead on the editorial page. The inside page folio line consists of the publication date (left corner of the page), name of the newspaper (centered) and the page number (right corner of the page). An inside page folio line is normally separated from the rest of the page by a cutoff rule, but as you can see in figure 8-15, this is not a requirement.

PAGE PERSONALITY

The quality of the layout and makeup of the inside pages of your newspaper should receive the same attention as the front page of the newspaper. Readers should not be shortchanged once they leave the front page of a newspaper. Special pages, such as editorial, family and sports, should have their own personalities.

Editorial Page

The editorial page probably is the least read of all the inside pages. The reason can be attributed particularly to makeup. Most editorial pages are very dull and very gray. A good editorial page should be as different in makeup from other inside pages as possible. Use pictures and artwork, white space, odd-column sets and other elements of makeup to give the editorial page its own special traits.

Family/Leisure Page

An appealing family/leisure page features delicate type, white space, and artistic designs. Use large and dramatic pictures to complement articles on off-duty leisure activities.

Sports Page

An attractive sports page contains plenty of action pictures. Be sure to include masculine type, white space, odd-column sets and large, bold headlines to complement the flavor of this popular newspaper page.

Other Pages

Inside news and feature pages should be as attractive as front pages within the limitation of available space. Use pictures, white space,

multicolumn heads, artistic designs and groupings of related news and features on these pages.

PICTURE STORY LAYOUT

LEARNING OBJECTIVE: *Identify the main points of a picture story layout.*

The picture story layout (also addressed in chapter 12) is a special challenge to a layout editor. A good picture story is a logical, well-organized, self-contained unit in which each part has a specific function.

The format used to lay out the picture story depends on space limitations and what you, as the layout artist, consider the most attractive arrangement. With an imaginative photographer, the number of interesting picture stories your publication can produce are unlimited. Once you have been provided with a variety of interesting, action-packed pictures suitable for reproduction, the layout is up to you. Let your experience and good judgment be your guide in determining the arrangement of pictures, headlines, cutlines, text and borders.

A good picture story layout (fig. 8-17, 8-18 and 8-19) can add immeasurably to the interest and attractiveness of your publication. Like feature stories, picture stories can be made up in advance and used as either regular attractions or to spice up occasional issues.

In the following text, we cover the major points of assembling a picture story.

NUMBER OF PICTURES

The number of pictures required to make up a picture story depends on the importance and

complexity of the subject. However, an odd number of photographs should be used in a double-truck layout. The term *double truck*, also called a centerfold, is used for a two-page layout made up as one page, with the “gutter,” or normal margin between the two pages, eliminated.

LEAD AND LAST PICTURE

The most important picture of any picture story is the one that opens the story —the lead picture. This picture has a double function. First, it must attract the reader’s attention and make that person want to know more about the subject. For that reason it should be the largest in your picture story. Second, it must show the subject and theme of the story in a graphically interesting form.

Almost as important as the lead picture is the last picture. The closing picture should show the reader the significance of the subject to the story line or theme.

BODY OF THE STORY

The body, which shows important scenes of the subject in action, must be varied and lively in visual rendition and presentation. To provide this variety and liveliness in a story, the photographer should start with a good script, excellent change of pace in coverage techniques and a quick eye for unexpected developments during actual shooting. By careful study of major picture magazines, photographers, as well as layout artists, you can gain a great deal of insight into the type of pictures being used in picture story assignments.



Figure 8-17.—Picture story layout, PT I.



Figure 8-18.—Picture story layout, PT II.



Figure 8-19.—Picture story layout, PT III.

PICTURE DIRECTION

Some photographs, because of their compositional direction, are natural right-hand or left-hand photographs. This means that the photograph is a natural to be used on the right or left side of a page, photo display or picture layout. Picture stories are viewed in the same manner in which we read, from left to right. Therefore, the lead photograph should be one that has the subject facing toward the viewer's right and the ending photograph facing toward the viewer's left. When possible, all lead and ending photographs should be taken twice: once with a left-hand direction and again with a right-hand direction. By duplicating these shots, you provide flexibility for layout. All photographs have direction: left, right, upward, downward, straight in or straight out of the page.

HEADLINES, CUTLINES AND TEXT

Headlines, cutlines and text have double functions. First, they give the reader facts that supplement the pictures editorially. Second, they serve graphically as elements of composition that contribute to the organization of the picture story.

PROOFREADING

LEARNING OBJECTIVE: *Identify the purpose of proofreading newspaper galley proofs and recognize the standard proofreader's marks.*

Proofreading is one of the final steps in the printing process (from the standpoint of the JO, not the publisher).

After the publisher has typeset your copy, you will receive the initial copies of your typeset stories. These copies are called "galley proofs," "galleys" or just plain "proofs." The galley proof name originated in the printing profession many years ago. Proofs of long rows of type came direct from the "galleys," or trays, in which the type sits until makeup time at the printshop.

WORKING WITH GALLEY PROOFS

Your job is to read through the galley proofs—every word and every punctuation mark—to make sure there are no errors and that they conform to the original copy. If an error is found, it will be corrected at the expense of the publisher (in a commercial printshop). However, the cost of any changes in the original copy must be borne by your

command, since they result in extra work for the publisher.

In photo-offset printing, you are likely to be given the complete paste-ups of pages (publisher's reproducible, sometimes called reprints) for proofreading. Proofreading is usually done by all members of the newspaper staff and printshop personnel. The reason is obvious; checking the content of your publication is part of your job.

PROOFREADER'S MARKS

Proofreader's marks (fig. 8-20) and copy editing marks are, for practical purposes, the same. The main difference is in their usage.

There are two popular methods of noting proofreader's marks on galley proofs: the "book" and "guideline" systems. Both systems are covered in the following text.

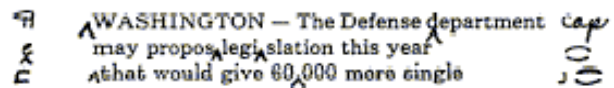


Figure 8-21.—Proofreader's marks using the book system.

Book System

In using the book system (fig. 8-21), you make two marks to correct each error: one under the error and one in the margin. Place a caret (^) under the error. In the margin, place the appropriate proofreading symbol level with the line in which the error occurs.

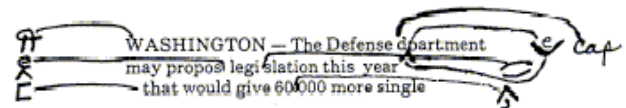


Figure 8-22.—Proofreader's marks using the guideline system.

PROOFREADER'S MARKS	
○ Insert period	Cap. Caps—used in margin
^ Insert comma	≡ Caps—used in text
:	Cap. & small caps—used in margin
;	≡ Caps & small caps—used in text
? Insert question mark	lc. Lower case—used in margin
! Insert exclamation mark	/ Lower case—used in text
/ Insert hyphen	wf. Wrong font
↓ Insert apostrophe	○ Close up
⌘ Insert quotation marks	⌘ Delete
— Insert 1-en dash	⌘ Close up and delete
— Insert 1-em dash	⌘ Correct the position
# Insert space	⌘ Move right
⌘ Insert lead	⌘ Move left
~ Insert virgule	⌘ Move up
✓ Superior	⌘ Move down
^ Inferior	Align vertically
(/) Parentheses	≡ Align horizontally
[] Brackets	⌘ Center horizontally
□ Indent 1-em	⌘ Center vertically
□ Indent 2-em	↓ Push down space
¶ Paragraph	~ Use ligature
No ¶ No paragraph	⌘ Equalize space—used in margin
tr Transpose—used in margin	~ Equalize space—used in text
tr Transpose—used in text	✓ Decrease space
sp Spell out	⌘ Let it stand—used in margin
ital Italic—used in margin Let it stand—used in text
— Italic—used in text	⌘ Dirty or broken letter
bf Boldface—used in margin	run over Carry over to next line
~ Boldface—used in text	run back Carry back to preceding line
sc. Small caps—used in margin	Copy out Something omitted—see copy
≡ Small caps—used in text	⌘ Question to author
rom. Roman type	^ Caret—General indicator used to mark exact position of error in text.

Figure 8-20—Standard proofreader's marks.

Guideline System

In the guideline system (fig. 8-22), you place the appropriate proofreading symbol in the margin and draw a line from it to the error. This is the most common form of using proofreader's marks.

Check with your editor or associate editor to see which proofreading method is preferred.

WHAT HAPPENS AFTER PROOFREADING

After the corrections have been made and you have approved the galley proofs, the publisher takes and assembles type, along with photographs and other art, into pages according to the layout plan you submitted. From these, the publisher makes page proofs—and usually gives you a final chance to make sure there are no errors. Make sure headlines are with the proper stories, stories “jump” to the correct pages, paragraphs are in proper sequence and cutlines are under the correct photographs. Check the body type, too. Sometimes a slug gets misplaced or jumbled, but routine typesetting errors should have been caught long before you reach this point. You will make a permanent enemy of the publisher if you start making unnecessary alterations.

After the final proofs are reviewed and approved, the publisher produces a “blueline” version of the newspaper for the editor to review. The blueline is a replica of the newspaper in reverse and is comparable to a blueprint. After the blueline is approved by the editor, the newspaper is published and distributed. Additional information on the blueline can be found in the *JO 1 & C*.

If you work on a newspaper staff, you will do a lot of proofreading. For this reason, you should ask for a tour of the newspaper printing plant. Observing the printshop in operation makes you more aware of the publisher's problems than you might otherwise see and helps you give clearer, more useful directions for what you want on the galley proofs.

FRONT-PAGE PATTERNS

LEARNING OBJECTIVE: *Identify the patterns used to design the front page of a ship or station newspaper.*

So far in this chapter, we have concerned ourselves with the tools and the basic principles of producing a newspaper. In this final section, we will examine the patterns followed in designing the front page of newspapers to give you, as a potential or current editor, a starting point for designing your own.

The following are three different meanings to the word *design* in the newspaper lexicon:

1. It refers to the basic format of the entire newspaper.
2. It refers to the arrangement of news on an individual page after that page has been made up.
3. It is used as a slightly altered form of the word *makeup*.

“Makeup” consists of building a page, element by element, until all the space on a page is filled, but “design,” using the third definition, means to plan for the total structure of a page before any layout is done.

Logically, it requires more time to “design” a page than to “make up” one. Consequently, when the pressure of a deadline is present, your most important concern is meeting that deadline. However, when there is ample time for preplanning, as is the case with most weekly issues of a newspaper, you should “design” the front page, if not every page.

The primary purpose of designing a page is to **make it easier to read**. This enables your readers to cover the material faster, and as a result, it encourages more of them to read all that is written. Remember, unread copy serves no useful purpose. When you design your front page, it is important for you to note that there is no “best” pattern, only different patterns. Any design repeated too often loses any freshness it may have had, and of itself, becomes a deterrent to the enjoyment of the reader. Consequently, a good editor will vary those patterns from issue to issue.

Not unlike other aspects of our culture, newspapers have changed over the years and are still changing. A number of editors, however, remain devoted to what is called “traditional” style and continue to design their publications accordingly. Others have opted to follow or to lead the way in developing modern journalistic trends by producing newspapers with a “contemporary” style. Undoubtedly additional styles will be forthcoming as tastes continue to change. Meanwhile, the traditional patterns currently in use are covered in the following text.

TRADITIONAL PATTERNS

The term *traditional patterns* (fig. 8-23, views A through D) refers to the following front-page design strategies:

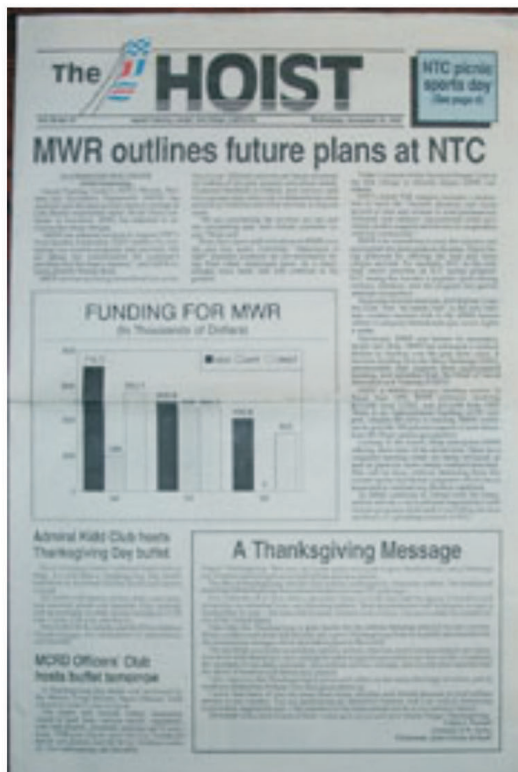
- Formal balance
- Quadrant



A. Formal Balance



B. Quadrant



C. Focus (Brace)



D. Circus (Razzle-Dazzle)

Figure 8-23.—Front-page design strategies; (A) Formal balance; (B) Quadrant; (C) Focus (Brace); (D) Circus (Razzle-Dazzle).

- Focus (brace)
- Circus (razzle-dazzle)

Formal Balance

In formal balance design (fig. 8-23, view A), the page is vertically divided in half. Each element to be placed on one side of the vertical centerline is duplicated by the same treatment of elements at the same point on the opposite side. In this type of design, there are two lead stories; both are usually of equal importance.

Formal balance design forces the news into a formula and does not distinctly tell the relationships, values and relative worth of the news. It also creates an artificial look, with the makeup being the dominant factor on the page. It is considered “visually boring” by modern editors. Most editors still using formal balance vary its use often enough to escape the deadening effect of sameness (fig. 8-23, view A).

A variation of formal balance is the dynamic (informal) balance design. It follows the same fundamental principle as described in the formal balance design, except when you progress below the horizontal fold of the page. This is where the exact duplication of the formal balance design is abandoned.

Since the dynamic balance design gives the editor more latitude in designing the page, it is slightly more pleasing to the eye.

Quadrant Design

In quadrant design (fig. 8-23, view B), the page is divided into four quarters, and a dominant, eye-stopping element (picture or headline) is placed in each quarter so that diagonal quarters balance each other. The diagonal line, then, is the type of line used. In this type of design, the lead story is placed in the upper left-hand corner or the upper right-hand corner, depending on which is being used as the focal point of the page.

Quadrant design formalizes quarter-page balance and is useful for giving equal display to equally important stories (fig. 8- 23, view B).

Focus (Brace) Design

In focus (or brace) design (fig. 8-23, view C), the page is made up by placing headlines and pictures on the page to form a diagonal line from the upper

left-hand corner to the lower right-hand corner. Then a strong typographical display is used in the upper right-hand corner for sharp emphasis. The diagonal line is the type of line used here. In this type of design, the lead story is placed in the upper right-hand corner.

A letter or figure pattern is discernible in the focus design. Note in figure 8-23, view C, that the figure “7” is apparent in the pattern. Also note that attention is “focused” on the corners by the stair-step arrangement of headlines that appear to “brace up” those corners (fig. 8- 23, view C).

Focus design is useful when you have one story that outweighs any other in news value. It also is useful in getting readers to read through the page.

Circus (Razzle-Dazzle) Design

In circus (or razzle-dazzle) design (fig. 8-23, view D), the page is made up by placing elements on the page so all elements scream for the reader’s immediate attention. Therefore, there is no focus of interest on the page.

The circle is the type of line used in the circus design. In this type of design, the lead story is placed in the upper left-hand corner or the upper right-hand corner, depending on which you are using as the focal point of the page.

Circus design is characterized by immense type, large art masses arrayed in unorthodox shapes and positions, use of colored ink for headlines, use of white space, movement of the nameplate to a minor spot on the page, use of widely varying headline typefaces with emphasis on the boldest weights and preference for multicolumn displays.

Because it is difficult (if not impossible) to make up a page so no one item stands out above any other, circus design is probably the most difficult design to use successfully (fig. 8- 23, view D).

CONTEMPORARY PATTERNS

While not really offering a new concept in newspaper style, the following design concepts represent a break from the pure traditional patterns:

- Functional
- Horizontal
- Modular
- Total/Single Theme
- Grid

Functional Design

In functional design, the page is made up according to no set pattern. It is based on presenting the day's news in the way that will be most appealing and convenient to the reader. The vertical line, diagonal line, circular or horizontal line could be the type of line used in functional design. In this type of makeup, the lead story is placed in the upper right-hand corner (fig. 8-24).

Functional design always lets the news dictate the layout and is characterized by very few banner headlines. It often has stories that run over the nameplate and uses short and floating nameplates, kickers, down-style headlines and several pictures. Functional design uses no decks on headlines and avoids jumps. (Headlines and headline terminology will be covered in detail in chapter 9.)

Horizontal Design

In horizontal design (fig. 8-25), the page is made up by placing elements on the page so the majority of the elements present a horizontal display. In this type of makeup, the lead story is placed in the upper left-hand corner or the upper right-hand corner, depending on which one you use as the focal point of the page.

Horizontal design provides strong horizontal units with a few vertical displays for contrast. It is characterized by large multicolumn headlines, large



Figure 8-25.—Horizontal design.

horizontal pictures, white space, and odd-column measures. This format came about as a result of readability studies, which indicate that readers estimate their reading time of horizontal copy blocks to be about half that of vertical blocks.

Horizontal modules of headlines, copy, photographs and even the flag give the page a strong horizontal thrust.

Modular Design

In modular design (fig. 8-26), pleasing blocks (modules) of vertical and horizontal rectangles are combined. Irregular story shapes are avoided to maintain this modular look. An earmark of a classic modular format is a strong vertical chimney (a panel running at least half the depth of the page) on the left or right side of the page. This chimney may contain news briefs, a complete story or only a photograph and outline. Highly flexible and uncluttered, this design gives the editor a wide range of formats for visual impact.

Total/Single Theme Design

In total/single theme design, strong emphasis is placed on a single, important story or issue. Both emphasize simplicity with strong visual impact.

The total page design may contain a large photograph (or line art) covering the entire area, a



Figure 8-24.—Functional design.



Figure 8-26.—Modular design.

single story and photograph, or a billboard (dominant photograph with page reefers to major stories).

The single theme page design is essentially similar, but normally does not contain stories or reefers. If you use this design strategy, make sure you stick with the theme and develop it on subsequent pages. You might have a single-page feature, two or three major stories about various aspects of the theme throughout the newspaper, a photo feature or any combination of these elements.

Figure 8-27 shows an example of a total page design.

Grid Design

The grid design (fig. 8-28) consists of a page of modules of varying sizes with the grid lines formed by the spaces between columns and the spaces separating stories.

A grid design is a pattern of intersecting lines, forming rectangles of various shapes and sizes. The objective of this concept is to take advantage of contemporary artistic principles to give a page the “now look” found in today’s magazines. Lacking the flexibility of other patterns, the grid design cannot be combined with other makeups but must stand alone as a single unit. Its intersecting lines are highly structured



Figure 8-27.—Total page design.



Figure 8-28.—Grid design.

and carefully placed to divide a newspaper page into clean-cut, simple-appearing modules whose total effect is contemporary. Stories are squared off and designed into vertical or horizontal shapes with the division of space on the page always arranged in unequal portions. The page might be divided (from left to right) into two and four columns or one and five columns, but never three and three.

The top of the page is never top heavy as is the case in traditional designs. While story placement is still based on the importance of giving a particular story featured treatment, the grid design allows all other

stories a better chance of being seen, since they are not buried or lost to the reader (fig 8-29).

FINAL NOTE

Remember that the front-page designs covered in this chapter are only suggestions for what you can do with your newspaper. A pure sample of a formal page layout is nearly impossible to find, because experienced editors are not concerned with producing textbook examples. Rather, their interest is in presenting the news of a particular day in what they believe is the best and most interesting manner. Most often that is done by combining features of several page patterns.

As you gain experience as a layout editor and become familiar with established patterns, you can try out new ideas as they come to you. Trust your instincts and do not be afraid to experiment. A controversial page design is better than a dull, uninviting one.

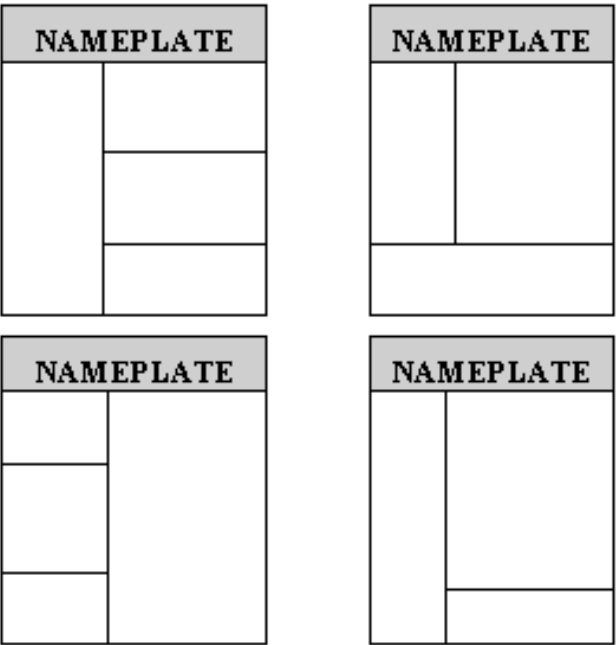


Figure 8-30.—Grid design examples.

CHAPTER 9

WRITING HEADLINES AND CUTLINES

You have just delivered a story to your associate editor that is the best you have ever written. The lead is first-rate, the body copy is flawless and the ending is textbook.

However, the story might vanish into obscurity on any newspaper page if the accompanying headline does not entice or inform the reader.

Well-written headlines grab the reader's attention, convey clear, concise thoughts and dress up the publication. Poorly written headlines can mislead, confuse, and even embarrass the newspaper staff, command and Navy. Headlines must be free of libelous statements and must not contain violations of security, accuracy, policy and propriety.

A reader often decides whether to read a story based on what the headline says. A headline tempts the reader to dig into the story. To do this, you, as a headline writer, must have a sense of what will attract the reader. You must have a broad vocabulary and enough versatility to say the same thing several ways to make sure the headline will fit the space allotted for it on the page.

In the following text, we cover the essentials you need to become an effective headline writer. Additionally, we examine the methods used to write cutlines (the explanatory matter supplementing photographs) in the final third of this chapter.

HEADLINE EVOLUTION

LEARNING OBJECTIVE: *Evaluate the evolution of the headline.*

The first American newspaper headlines were nothing more than labels. A large capital letter, called an "initial letter," may have been used to set off the first paragraph of each story. Sometimes the front-page headlines were one-line labels showing the origin of the news (England, France, Spain).

By the time of the Revolutionary War, American newspapers had made some progress in the art of writing headlines, but not much. A full-page account of the battle between the *Bon Homme Richard* and HMS *Serapis*, for example, might have been carried

under a 10-point, Old English typeface headline that read as follows:

Epic Sea Battle

An epic sea battle between the Bon Homme Richard and the HMS Serapis was waged on the high seas. ...

During the Civil War, American newspapers began putting more information in their headlines, but their form was very different from what we are accustomed to today. Figure 9-1 shows a multidecked headline carried by the *New York Sun* over the story of the assassination of President Lincoln in 1865.

Toward the turn of the century (during the Spanish-American War), technical improvements and a circulation war between the Hearst and Pulitzer newspapers in New York helped speed the adoption of multicolumn headlines. Important stories were introduced by screaming headlines (banners) across the entire page, followed by as many as eight or more related heads. Sometimes headlines occupied more space than their stories.

However, by the end of World War I, many editors began experimenting with headlines that were more streamlined and more compact. They found the space they saved could be used more advantageously for news and advertising—especially advertising, which then, as now, paid the bills.

HEADLINE FUNCTIONS

LEARNING OBJECTIVE: *Recognize the functions of the headline.*

The modern trend in headlines is toward simplicity. Most newspapers now use heads that say what has to be said in a minimum of words. A good headline conveys the news in a story and the significance and meaning behind the story. It never implies more—and should not say too much less—than what actually appears in the story. It does not contain misleading suggestions and it does not leave false impressions.

An easy way to remember the functions of the headline is through the acronym **HEADS**:

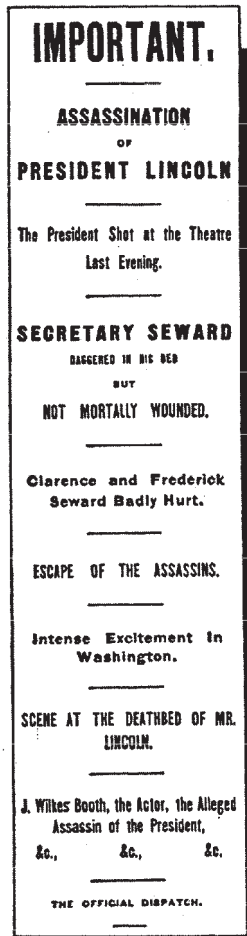


Figure 9-1.—Multidecked headline from the New York Sun following the assassination of President Lincoln.

H - Heralds the days news; tells what is of importance.

E - Entices the reader with essential or interesting facts.

A - Advertises the most important story by size or placement on the page (the most important stories are displayed at the top of the page).

D - Dresses up a page with typography; helps make design attractive.

S - Summarizes the story with a “super” lead; tells what the story is about.

HEADLINE STYLES

LEARNING OBJECTIVE: *Recognize the various types of headline styles.*

There are several ways in which you can display headlines. For style variation, your headlines can be

set in all-caps, caps and lowercase or downstyle. These methods are covered in the following text.

ALL-CAPS HEADS

The all-capital letter headline style is almost extinct. All-caps heads, while they are easier to write than others, are the most difficult to read. To test this premise, read the following paragraph:

AS THIS PARAGRAPH DEMONSTRATES, THE ALL-CAPITAL SETTING IS NEITHER EFFICIENT FOR THE READER, NOR PLEASING TO THE EYE. WILLIAM RANDOLPH HEARST USED TO HAVE KEY GRAPHS IN HIS EDITORIALS SET ALL-CAPS. INSTEAD OF MAKING THE POINT EMPHATICALLY, AS HE INTENDED, SUCH SETTING ACTUALLY CUT DOWN THE READERSHIP AND ITS IMPACT.

Even the most patient, attentive and skilled reader will be blinded by the onslaught of all those capital letters. By the way, did you spot the typo? Emphatically is misspelled.

CAPS AND LOWERCASE HEADS

A widely used headline style is the uppercase and lowercase head. In this headline style, all words, other than articles, conjunctions, and prepositions of fewer than four (and sometimes five) letters, are set with the first letter in caps and the others in lowercase.

DOWN-STYLE HEADS

The down-style head usage has increased in popularity in recent years. In down-style heads, the first letter of the first word—and the first letter of any proper noun—is set as a cap, and all other letters are lowercase. Down-style is presented in the way persons are taught to read and write. The style is visually attractive and enhances the readability of the line. By design, it lacks the numerous capital letters in a headline which serve as “eye stoppers.”

HEADLINE FORMS

LEARNING OBJECTIVE: *Identify the most common headline forms.*

Headline forms constantly come and go. Regardless of the form, the most common headlines

are easy to read, easy to write, and easy to set. Some of the most common headline forms are explained in the following text.

BANNER HEAD

The banner head (fig. 9-2) is set the full-page width at the top of a news page to draw attention to the lead story or that particular page. If you run a banner head above the flag or nameplate, it is called a **skyline**. A **streamer** applies to the widest and biggest multicolumn head on a page, regardless of whether it is the full width.

CROSSLINE HEAD

The crossline head (fig. 9-3) is very similar to a banner headline. Although it does not always span the full width of the page, it does cover all the columns of the story to which it pertains.

FLUSH LEFT HEAD

The flush left head (fig. 9-4) is a two- or three-line head with each line set flush left. The lines do not have to be equal in width or set full. The white space at the right is considered enhancing, because it allows "air" into the otherwise stuffy column spaces. Flush left is the most commonly used head today.

NEX gift certificates great holiday gift idea

Do you have a hard time selecting the right gift for everyone on your holiday list? Do you spend hours guessing at the proper size and color? If this is you, your holiday shopping just got a lot easier.

Navy Exchanges have just introduced a new worldwide NEX gift certificate. The new gift certificates are available and redeemable at any Navy Exchange around the world. They come in three convenient denominations — \$10, \$25 and \$50. Select the amount that's right for you.

Navy Exchange gift certificates aren't just for Christmas either. They make the perfect gift for birthdays, weddings or any other special occasion.

Since gift certificates are good at any Navy Exchange, at home or abroad, they are the gift that's easy to send to friends and family wherever they may be located. However, the person receiving the certificates must be an authorized Navy Exchange customer in order to enjoy using the gift certificates.

Navy Exchange gift certificates are easy to buy, too. Just see the customer service representative at your local NEX.

Pick up Navy Exchange gift certificates for everyone on your list this season. They are the gift that always fits. Your Navy Exchange makes holiday giving and holiday shopping a pleasure.

Figure 9-4.—Flush left head.

SIDE HEAD

The side head (fig. 9-5) is a headline form that runs alongside a story. It is normally three or four lines and looks best when set flush right. A side head is usually placed slightly above the center of the story.

KICKER

The kicker (fig. 9-6) opens up the area on a page where the headline is located. It can be used to

Local pilot had unique role in Desert Storm

Story and photo by
Vance Vasquez

Two years ago, Jan. 17, the United States and other United Nations coalition forces joined together to liberate occupied Kuwait from Iraqi forces.

Operation Desert Storm affected the lives and careers of thousands of military personnel by participating in the first Congressionally-authorized war since World War

II. One such person, Cmdr. Robert E. Noziglia Jr., aircraft maintenance officer of Naval Air Weapons Station, Point Mugu, had a unique role in Desert Storm.

Noziglia was interviewed by Ambassador Edward W. Genhum, Jr., the U.S. designate for Kuwait, in Washington D.C., Sept. 15, 1990. He was selected to head the reconstruction of the Kuwait Air Force.

A Kuwaiti 747 airliner

was used to transport 86 contract technicians along with their supplies to Khams Mushayt, Saudi Arabia. They departed from Andrews Air Force Base, Md., and arrived in Saudi Arabia, Sept. 16, 1990.

"The technicians were both retired Navy and Marine Corps personnel with A-4 Skyhawk experience," said Noziglia.

When Iraq invaded Kuwait and overwhelmed the

small country, only a small portion of the Kuwait Air Force was able to escape into Saudi Arabia. A total of 18 A-4KU and two TA-4KU skyhawk, attack aircraft along with 15 F-1 Mirage fighters and three L110-30 (C-130) transport aircraft were saved.

The Kuwait Air Force arrived with no support facilities available; no equipment, tools or aircraft log books, which were left be-

hind in Kuwait.

"The aircraft was unique since no other country operated A-4KU Skyhawks; we were able to assemble new log books from information obtained from the United States," said Noziglia.

After the technicians arrived 34 days later, the A-4KU's were moved from Khams Mushayt and were forward-deployed to Dhahran, Saudi Arabia. The A-

4KU's were stationed far away from Iraq to avoid any possible airstrikes before the United Nations mandate for Iraq to leave Kuwait was ordered. The Kuwait Air Force was integrated with The Royal Saudi Air Force (RSAF) under a single command.

The coalition forces of France, Qatar and Kuwait operated the F-1 Mirage.

(Cont'd on page 5)

Figure 9-2.—Banner head.

Expanded dependents dental plan nears implementation

(ARNEWS) — More details were set for the expanded Dependents Dental Plan, in a workshop held by the Office of the Civilian Health and Medical Program for the Uniformed Services (CHAMPUS).

Enrollment in the expanded benefits plan will be automatic

for all sponsors with eligible family members, even if the sponsor had previously declined enrollment or had disenrolled from the basic plan.

However, sponsors stationed outside the continental United States when the extended plan begins will not be automatically enrolled, unless they are

already enrolled in the basic plan.

There will be a 90-day disenrollment period for those who wish to decline the new

program. Some issues still remain open, such as the monthly premium, co-payment cost and a premium rate for junior soldiers.

Figure 9-3.—Crossline head.

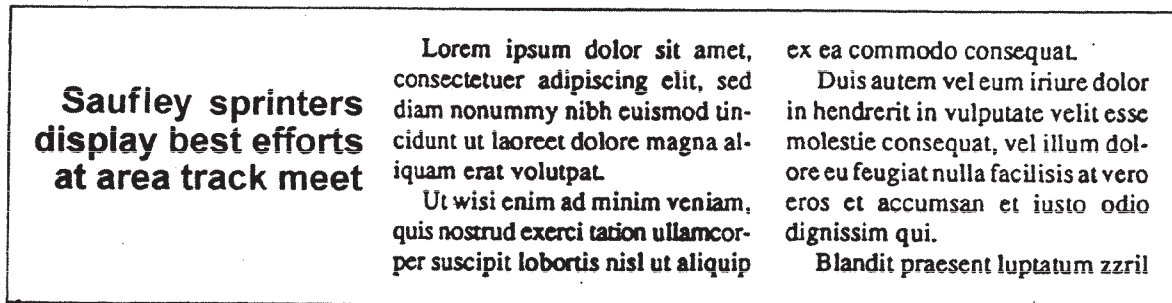


Figure 9-5.—Side head.



Figure 9-6.—Kicker.

introduce a feature article with a pun line above the main head.

The following are some basic rules for you to follow when writing kickers:

- Extract kicker information from the bridge or the body of the story.
- Do not repeat words in the kicker and main head. Interpretation of the main head should not depend on information in the kicker.
- Make the kicker 1/2 the point size of the main head. For example, a 36-point main head will have an 18-point kicker.
- Set the kicker 1/3 to 1/2 the width of the main head. For example, a three-column main head requires a one-column to 1 1/2-column kicker.
- Alternate type postures to give the head the proper emphasis. For instance, a roman style main head requires an italic kicker and vice versa.

- Indent the main head two counts (headline unit counting will be explained later) under the kicker to add white space.
- Always underline the kicker.
- Do not use a kicker at the top of a page.

HEADLINE VARIANTS

LEARNING OBJECTIVE: *Recognize the most common variations of standard headlines.*

There are countless variations of headline styles, all of which are viewed in terms of their visual impact when used with basic headline styles. Some of these variants are explained in the following text.

STANDING HEAD

The standing head (fig. 9-7) is essentially a label used for regular or recurring content, such as sports and chaplains' columns. It does not change from issue to issue.

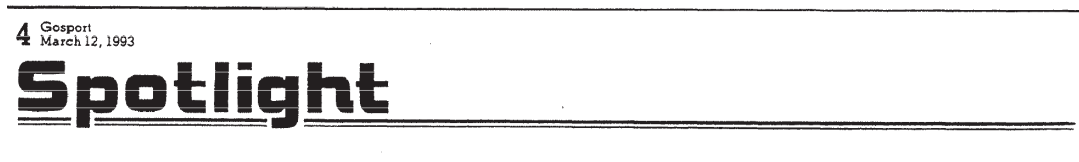


Figure 9-7.—Standing head.

World Series

Continued from Page 21
consectetur adipiscing elit, sed
diam nonummy nibh euismod tin-
cidunt ut laoreet dolore magna al-

iquam erat volutpat.
Ut wisi enim ad minim veniam,
quis nostrud exerci tation ullamcor-
per suscipit lobortis nisl ut aliquip

ex ea commodo consequat.
Duis autem vel eum iriure dolor
in hendrerit in vulputate velit esse
molestie consequat, vel illum dol-

Figure 9-8.—Jump head.

JUMP HEAD

The jump head (fig. 9-8) is designed to help the reader find a portion of a story continued from another page. The jump head uses one or two key words from the headline that introduced the story. It is set flush left followed by the words “Continued from Page ##,” usually set in boldface body type (it also can be set in italic). A two-point rule may be used to extend from the side of the head over the width of the article.

HAMMER HEAD

Often called a **reverse kicker**, the hammer head (fig. 9-9) is set twice the size of the main head, set flush left, and is no wider than half the width of the headline area.

TRIPOD HEAD

The tripod head (fig. 9-10) is a single, short line of larger type set to the left of two lines of smaller type. The tripod portion (larger wording) should be twice the

size of the definition or main headline. For example, a 36-point tripod would dictate that the main head be set in 18-point type to give the true tripod appearance. Punctuation in the form of a colon is required when the tripod conveys a separate thought.

WICKET HEAD

The wicket head (fig. 9-11) is a tripod in reverse (short line of larger type set to the right of two lines of smaller type). The colon is not used in the wicket. Although it is seldom used, on occasion, you may consider it to vary your newspaper design.

NOVELTY HEAD

The novelty head (fig. 9-12) features typographical tricks, such as setting part of the head upside down, using an ornate typeface or substituting artwork as characters. Use the novelty headline sparingly with appropriate feature articles. Overuse of this headline may lead to your readership questioning the credibility of the newspaper.

Champs!

Lion matmen capture all-Germany title

Lorem ipsum dolor sit amet, con-
sectetur adipiscing elit, sed diam non-
ummy nibh euismod tincidunt ut laoreet
dolore magna aliquam erat volutpat.

Ut wisi enim ad minim veniam, quis
nostrud exerci tation ullamcorper suscipit
lobortis nisl ut aliquip ex ea commodo
consequat.

Figure 9-9.—Hammer head.

Growth: NAVSTA seeks additional aid for building expansion plan

Lorem ipsum dolor sit amet,
consectetur adipiscing elit, sed
diam nonummy nibh euismod tin-

cidunt ut laoreet dolore magna al-
iquam erat volutpat.
Ut wisi enim ad minim veniam,

quis nostrud exerci tation ullamcor-
per suscipit lobortis nisl ut aliquip
ex ea commodo consequat.

Figure 9-10.—Tripod head.

NAVSTA seeks additional aid for building expansion plan

Lorem ipsum dolor sit amet,
consectetur adipiscing elit, sed
diam nonummy nibh euismod tin-

cidunt ut laoreet dolore magna al-
iquam erat volutpat.
Ut wisi enim ad minim veniam,

Growth

quis nostrud exerci tation ullamcor-
per suscipit lobortis nisl ut aliquip
ex ea commodo consequat.

Figure 9-11.—Wicket head.

How C-C-C-Cold Is It...?

Figure 9-12.—Novelty head.

HEADLINE WRITING SKILLS

LEARNING OBJECTIVE: *Recognize the components and attributes required in headline writing.*

Headline writing requires skill and concentration. Your headline must give the essence of the story. While explaining the story accurately, your headline also must fit into a limited space.

Some copy editors approach headline writing by looking for a key word or two that expresses the high point of the story. Then they add other words until they have a headline. Other copy editors begin by forming a sentence that contains the essential elements of the story. Then they edit out excess words (adverbs, adjectives, articles and so forth) and minor details until all that is left is a well-tailored headline that tells the story essentials.

Headlines are written in *telegraphic English*, a term coined because they closely resemble the wording found in most telegrams. While the consideration in telegrams is mostly monetary, the economical consideration of headlines is space. Therefore, headlines usually contain—as the “bare bones” of language—a subject and verb. Other strong uses of telegraphic English might include subject-predicate or subject-verb-object constructions.

A straight news headline is written for a straight news story and a feature headline for a feature story. If the story is a colorful account of some event or trip, the headline should be colorful. If the story is a romantic or dramatic account of an event, the headline should

follow form. If it is a human-interest story with an element of pathos, the headline should not be humorous. If the story is humorous, the headline should not evoke pity or compassion.

In the following text, we will cover some of the general principles of headline construction practiced by most copy editors.

USE OF VERBS

The key to good headline writing is the use, whenever possible, of strong action verbs. Headline writers use verbs in what is sometimes called the “historical present” tense—meaning they use the present tense verb to describe action that has already happened. Primarily, this tense is used to convey a sense of immediacy, in the same way many people normally speak in the present tense to describe exciting experiences to friends. Present tense verbs contain fewer letters than do their past tense forms.

Verbs may be omitted when implied. For example, the verb “appears” is implied in the following headline:

Acadia Boatswain's Mate On 'Supermarket Sweep'

However, do not overuse this approach. Action verbs are still best for capturing a reader's attention. The verbs **is** and **are** are frequently understood. It is not necessary to use them except for clarity. The infinitive “to be” is also awkward in headlines and you should avoid using it. Note the following examples:

Poor: New pay raise is approved

- Better:** New pay raise approved
- Poor:** Halloween Dance to be held
Oct. 31 at Fleet Park
- Better:** Halloween Dance slated
Oct. 31 at Fleet Park

Do not begin a headline with a verb that might convey the imperative mood (implying a command). Note the examples that follow:

- Poor:** Reject new pay hike
for armed forces
- Good:** Armed forces pay hike
rejected by Congress
- Better:** Congress rejects
new pay hike for armed forces

To give the reader a better sense of immediacy, the verb should be in the first line of a headline whenever possible. When you can avoid it, do not place the verb in the bottom line of a three-line head.

ARTICLES

Omit all articles (a, an, the) and other unnecessary words. Note the following example:

- Poor:** Today's submariners are "lucky" says
veteran of the USS *Grant*
- Better:** Today's submariners "lucky" says USS
Grant veteran

VOICE

Use the active voice in preference to the passive voice whenever possible. Note the following examples:

- Poor:** More pilots being sought for T-45 test
- Better:** Navy seeks more pilots for T-45 test
- Poor:** Navy flight training bolstered by
new T-45
- Better:** New T-45s bolster Navy flight training

DECKS

Make each deck (not necessarily each line) a complete construction. Write the headline so it will stand alone and make sense, especially when you use it as the main deck. Consider the following example:

- Poor:** Decade of off-duty study earns degree
at Memphis

- Better:** Memphis chief earns law degree
after decade of off-duty study

Because headlines are restricted to a small space, copy editors generally limit headlines to one specific idea expressed forcefully, rather than several ideas expressed vaguely. If space permits, editors sometimes connect two independent thoughts by a semicolon in a headline—or add another section to the headline (a second deck)—to include additional important aspects of the story.

If a story involves a plane crash that kills one crew member, injures the pilot, and disrupts a training exercise, you should limit the main deck to the death. Subordinate headlines, or the story, should cover the other news.

BE SPECIFIC

As with all forms of news writing, the use of specifics is better than generalities. Note the following headline:

Auto crash
proves fatal

This headline does not contain nearly as much information as the headline that follows:

2 die as car
smacks tree

BE POSITIVE

Another custom most headline writers observe is phrasing headlines in a positive, rather than in a negative manner. This is based on the principle that a newspaper is supposed to tell readers what **did** happen, not what **did not** happen.

When writing about a family that escapes injury when their car overturns and burns on a highway, a novice headline writer would probably write the following:

No one hurt
in car fire

Given the same story, a good headline writer composes the following headline:

Family escapes
flaming death

OPINIONS

Headlines on stories dealing with opinion should show the source of that opinion. If a story is attributed

to a secondhand source, this should be reflected in the headline. Consider the following examples:

‘Courts too lenient’
claims parish priest

NFL players unhappy
with owners’ offer
says arbitrator

REPEATS

You should avoid repeating words in the same headline deck. Also, watch out for similar phraseology in adjacent heads and decks. Consider the following example:

Former *Abraham Lincoln* journalist
returns to *Abraham Lincoln*
as public affairs officer

THE FIVE Ws

A good headline generally has the **who** and the **what** of the story in the first line, with the following lines explaining the **how** and **why**, if necessary.

People expect newspaper stories to concern events that have occurred since the previous edition was published. Therefore, the **when** can usually be omitted. If an event is yet to happen, however, warn the reader by the inclusion of the **when** through the use of the future tense or a specific day or date.

The **where** in a headline on a local story is generally omitted. Readers expect their newspapers to print local stories and will assume a story is local unless the dateline or headline specifies otherwise.

SHORT SYNONYMS

Use short, vigorous words. Headline writers usually have a vocabulary all their own. They learn to think in terms of short synonyms for longer expressions when writing headlines. Many copy-editing texts contain lists of short synonyms for headline use. Note the following examples:

- **Named** for appointed or elected
- **Set** for arrange or schedule
- **Win** for victory
- **Ex** for former

- **Job** for appointment or position
- **OK** for accept, approve or adopt
- **Try** for attempt
- **Vet** for veteran
- **Hike** for raise or increase
- **Tell** for reveal or inform

In addition to these synonyms, many more are commonly used in Navy newspapers. Some of these are as follows:

- **Sub** for submarine
- **Flyer** or **pilot** for aviator
- **Jet** for jet-propelled aircraft
- **All hands** for entire ship’s company
- **Ships** for reenlists
- **Crew** for crew members
- **Plane** for aircraft or airplane
- **XO** for executive officer
- **CO** or **skipper** for commanding officer or captain

SPLITS

Do not split words, phrases, proper nouns or compound nouns between lines. Note the following examples:

Words:

5,000 PO1 advance-
ments predicted off
September examinations

Phrases:

Crew members of
USS *Basil Fome*
visit Funafuti

Proper Names:

Capt. Robert J.
Macron assumes
command of HC-16

Compound Nouns:

Saufley chief petty
officers sponsor
orphans’ picnic

LINE BALANCE

Try to balance headlines typographically.
Consider the following examples:

Unbalanced:

Navy, Coast Guard icebreakers
save U.K. ship

Balanced:

Navy, Coast Guard icebreakers
rescue grounded U.K. corvette

ABBREVIATIONS

You should use commonly known and accepted abbreviations when they are appropriate. Do not be afraid to use Navy abbreviations for ships, aircraft, ratings, ranks, commands, titles and so forth, in ship and station publications.

The following are some commonly used Navy abbreviations:

- **CPO** for chief petty officer
- **PO1, PO2** and **PO3** for petty officer grades
- **ComRats** for commuted rations
- **NCO** for noncommissioned officer
- **LDO** for limited duty officer
- **GQ** for general quarters
- **SecNav** for Secretary of the Navy
- **CNO** for Chief of Naval Operations

Use these and other Navy abbreviations **only** in ship or station publications. Never use them in press releases to civilian news media. For further information, consult the latest edition of *The Associated Press Stylebook and Libel Manual*.

PUNCTUATION

Newspaper editors generally adhere to the following style for headlines:

- Use single quotation marks instead of double.
- Use commas to replace the word *and*. Also, where natural, use commas to make pauses or breaks in headline construction.
- Use semicolons to divide thoughts, where needed, especially three-line heads.
- Use periods only after abbreviations.

- In a caps and lowercase head, start each line and every important word with capital letters.
- Articles (which are rarely used) and prepositions (which do not lead off a line) are **not** capitalized in a caps and lowercase head.

CUTLINES

LEARNING OBJECTIVE: Recall the methods used in gathering material for cutlines and identify cutline components, typography, layout, and datelines.

Photographs have a unique storytelling ability. They are most effective when accompanied by some explanatory text.

A missile launching may make an exciting photograph, but it fails as a news vehicle unless the reader understands the **when, where** and **why** of the photograph, as well as the more obvious **what** and **how**.

The function of providing information the photograph does not furnish is performed by the photograph's cutline, also known as a photo caption. A cutline supplements the photograph by explaining action, naming people and giving background information.

The cutline writer is normally a middleman, who takes a photograph (which is inflexible) and adds the cutline (which is flexible) and comes out with a story. The cutline writer determines what additional information must be given to communicate the story the photograph is meant to tell.

Cutline writing is a specialized form of newswriting. It answers the same basic questions as the news story. Yet, it does this in a single, concise paragraph. The cutline writer must be alert to answer any questions the photograph may arouse in the reader's mind.

GATHERING CUTLINE INFORMATION

There is no secret formula to gathering cutline information. However, there are certain practices you should follow that will allow you to write effective cutlines after you return to your office. These practices are covered in the following text.

How to Record Cutline Information

Cutline information may be recorded in a notebook or a locally designed "caption log." A

caption log may serve as a handy reminder of what information you should record. An example of a locally designed caption log is shown in figure 9-13.

What Outline Material Is Recorded

When you gather material for outlines, you generally use the same methods and techniques as for gathering information for a news story. The major difference is that you do not need as much information, but it must be pertinent to the scene in the photograph.

The following are a few points to consider before you write a outline:

- What is the storytelling value of the photograph?
- Is the photograph intended for internal or external use? (Photographs for civilians may need more information.)
- Will the photograph be released to a hometown paper? If so, you must include a hometown tie-in.
- Will the photograph be used alone or with a story?

With these basic considerations in mind, try to stick with the old but reliable five Ws (and H) when you gather outline material. Find the answers to the most pertinent questions, and you will have more than enough information to write your outline.

WHO.—Identify people in the photograph by rank, full name, title, hometown and so forth. Also note relative positions of people in the photograph when there are more than one and if it is not obvious who is who by action, age, gender or rank. Sometimes it is helpful for you to note the clothing or physical characteristics of the people being photographed. Keep in mind that when you or your photographer use black-and-white film, it will do little good to note “yellow T-shirt” or “red dress” on the caption log. However, such notations as “Mets T-shirt,” “sunglasses,” or “curly blond hair” will prove helpful.

WHAT.—The “what” can apply to two areas. First, it may involve what is happening in the photograph. In the caption log, it may be necessary to jot down a word or two to describe the action. For example, “slicing cake,” “performing PMS check,” or “donning EEBD.”

PHOTOGRAPHERS NAME		DATE AND TIME
SUBJECT/SLUG		LOCATION
POC NAME AND PHONE		ROLL #
FRAME #	ACTION	I.D. (NAMES, EQUIPMENT, LANDMARKS)

Figure 9-13.—Sample caption log.

Second, the “what” may entail equipment in the photograph. Unusual equipment often is included in photographs. The equipment should be identified. An OBA may not require identification, but an OBA with a lifeline attached may need further elaboration. Ships and aircraft should always be identified. Never guess or suppose you know the proper nomenclature; ask an expert on the scene.

WHERE.—Make sure you record the location of the action. Write down the name or number of street names, building names or numbers and so forth. If there are landmarks, either natural or man-made, identify them as well. These might include rivers, lakes, statues, bridges and mountains.

WHEN.—Record the time and date the photograph was taken. This is especially important for “wild” or “stand-alone” photographs that will not be accompanied by a story.

WHY.—Unless it is obvious, record why an action is taking place. Is it part of a base basketball championship or a monthly awards ceremony? As in the “when” category, this is important for photographs that will stand by themselves.

HOW.—If there are circumstances that led to the photograph being taken and they require explanation, make sure you know how they came about.

Matching Outline Information with the Photograph

You should record outline information by individual frame number. However, if you shoot several frames of the same subject and action, it is not necessary for you to record information each time. Simply list the range of frame numbers in which the subject appeared.

When to Record Outline Information

Record the outline information immediately after each shot or series of shots. Do not let subjects get away without jotting down the required outline information. They may be hard or impossible to track down later, and you may forget who you shot or who was doing what in the photograph.

One exception to this practice is a sporting event where it is impossible to interrupt the action. In this instance, let the subject(s) know in advance that you will be taking photographs and will need to get identification as soon as possible after the event. Note

uniform numbers, clothing or physical characteristics. You also may record the information during breaks in the action.

CUTLINE COMPONENTS

We will not go into detail here on how your photographs should be posed and what to look for in the way of composition. This will be covered in chapter 12, *Basic Photojournalism*. The primary concern now is the text that accompanies the photograph and how it should be written. Although newswriting and outline writing are closely related, they are different.

The lead in a news story is the most important part of the story. The facts presented in the lead may be expanded and elaborated on in the bridge and body of the story.

The outline differs in that it is more than a part of the story—it is the **whole** story. Everything you have to say about the photograph is said in one paragraph. That paragraph must contain the essential facts, and the facts must be tied into the scene in the photograph. The length of a outline is always governed by what must be told about the photograph. It may consist of one word, one sentence, or it may consist of five sentences.

Cutlines have no set lengths. Strive for simplicity and brevity. The shorter you can write a cutline and still include all the essential information, the better it will be.

As in headline writing, a cutline is written in a manner appropriate to the subject matter. In other words, write a news cutline for a news photograph and a feature cutline for a feature type of photograph.

There are probably as many ways to write cutlines as there are newspapers, magazines and other periodicals. Just about every publication has its own individual requirements and style of outline writing. Some want long cutlines. Some want only one or two words to tease a reader into reading the accompanying story. Others use no outline at all.

Only one method of outline writing will be covered in this chapter. It is considered the handiest formula for a novice writer and consists of the following four major components:

- The action
- The identification (persons or things in the photograph)

- The background information
- The credit line

The Action

The first sentence of a cutline is the most important. It must link with the photograph by describing its action.

One of the peculiarities of the first sentence is its verb form. The verb in the first sentence of a cutline is in the present tense. The reason for this is that photographs, like paintings and sculpture, capture one moment of time and keep it in the present.

Another reason for using the present tense in the first sentence is that it gives the readers a sense of immediacy, as though they were actually witnessing the event shown. Thus a cutline that reads, “Navy Seaman Jack Frost **swims** through swirling flood waters of the Baylinguay River to rescue 6-year-old Tia Maria...” has more dramatic impact than one that reads, “Navy Seaman Jack Frost **swam** through. ...”

One problem that arises from the use of the present tense in the first sentence is what to do with the **when** element. To put the time element in the first sentence would result in a sentence such as “Ryan Thompson hits a line drive to center field yesterday. ...” This is somewhat jarring to the reader and should be avoided.

To alleviate this problem, you can usually reserve the time element in cutlines for the second sentence. This avoids awkward sentences such as the one just quoted.

The Identification

The second part of a cutline is the identification. This includes an identification of all persons and things vital to the storytelling function of the photograph. Everyone who is involved in the central action of the photograph should be identified. Do not identify persons who are blurred out, obscured or too far away for recognition. Anyone in a photograph who attracts the reader’s attention should be identified. The reader’s curiosity should never be impeded. If the identity of a pertinent figure in a photograph is unknown, make this fact a part of the cutline.

The next question concerning identification, is where should it be placed in the cutline? The best answer is, it should come as high as possible in the paragraph. Many times it will be possible to identify people at the same time the action is described. For

example, in the statement “Seaman Apprentice Jay B. McMannus sounds taps to climax Memorial Day ceremonies....,” the identification is included as the subject of the action. Sometimes, however, it may be preferable to use an impersonal identification (such as “A Navy musician sounds ...”) in the first sentence. In that case, the complete identification should come in the second sentence.

The only exception to the ground rule previously stated is in the case of group identification. When there are several people to be identified in a photograph, it is better that you not clutter the first two sentences with a list of names. This is apt to discourage the reader from finishing the cutline. The recommended way to handle a group photograph is that you use an impersonal identification in the first sentence (such as, “A group of sailors ...”), then list the names later in the cutline. This achieves complete identification without cluttering the important first sentence.

The identification itself can be handled in one of several ways. The idea is to handle it in the most natural and concise manner consistent with clarity. The best way to identify people is by action. If Kip Karuthers is throwing a pass to Ronnie Gato, it should be obvious from the photograph which one is passing and which one is receiving the ball. Thus they are identified by their activity, and you will not have to use left and right identifications.

Another simple manner of identifying people in a photograph is by obvious contrast. If there are two Sailors and an officer in a photograph, it is not necessary to identify the officer as being to the left, or in the center. The officer is well-identified by obvious contrast, therefore, place identification would be superfluous.

Identification by elimination is slightly more complex. Suppose there are four people in a photograph. One of them is receiving a medal from another. These two are identified by the action. A third person is the award recipient’s wife. She is identified by obvious contrast. Therefore, the fourth person is identified by elimination.

For example, the identification in the cutline might be handled in the following manner:

“Lt. Wayne E. Pilot receives the Distinguished Flying Cross from his squadron leader, Cmdr. William A. Aviator. Lt. Pilot’s wife, Gertrude, and Lt. Cmdr. Thomas V. Hoek, VAP-99 XO, look on.”

Finally, there is the traditional left, right, center or “from the left” identification. It is not necessary to say “from left to right.” This wastes space. If one starts from the left, there is no place to go but right! Use this type of identification only when the other means of identification will not suffice or when there is a chance of the reader becoming confused.

In cutline identification, avoid bromides, such as “pictured above” or “shown above.” It is apparent to both the editor and the reader that something is pictured or shown above the cutline. Even worse are such phrases as “posing for this picture are ...” or “smiling for the camera is ...”

The Background Information

The third component of the cutline is the background information. This consists of additional facts or explanations needed to clarify the subject matter of the photograph. The length of this section of the cutline depends on two factors mentioned earlier: (1) where the photograph will be used and (2) how the photograph will be used.

The amount of background information needed to explain a photograph of carrier operations to a civilian reader will obviously be greater than that needed to explain it to crew members who are participating in such operations.

If a photograph is to accompany a news story, do not duplicate details used in the story. If the photograph is to be used alone, the cutline must be complete.

Cutlines prepared for picture stories are similar to those written for single photographs, except that a story is told by means of a series of related photographs. In this case, a main cutline, usually written for the lead or key photograph of the story, can supply background information for the entire story.

Although present tense is used to describe the action, the correct past, present or future tense is used when presenting background facts related to the action. However, you should be careful of changing tenses in the middle of a sentence.

The Credit Line

The last component of the cutline is the credit line. Most ship and station newspapers use credit lines for photographs.

There are several ways of crediting photographs. Some newspapers and magazines give photographers personal credit lines (this is encouraged for ship and

station newspapers). Others use a blanket statement which states, for instance, that “all photos are U.S. Navy photos unless otherwise credited.” However, the recommended way is to put the credit line at the end of the cutline itself. The credit line should follow the last word of the cutline, in parentheses, in the following manner: (U.S. Navy Photo by JO3 Evelyn Grudge) or (U.S. Navy Photo).

CUTLINE TYPOGRAPHY

If you are writing cutlines for external release, do not concern yourself with the way the cutline will be set in type. However, if you edit a ship or station newspaper, you will need some knowledge of cutline typography.

Good cutline typography heightens the impact of a photograph by making the explanatory text as visually appealing as possible. It is a good idea to rewrite and reset Navy Editor Service (NES) cutlines, because they may violate your local style, and the typefaces used may not match yours.

For better display, cutlines are usually set in a larger or a different typeface than that used in the news columns. Some papers use the same size and style as their body type, except that it is set boldface.

Cutlines under multicolumn photographs are best displayed when set two columns wide for two-column photographs (fig. 9-14) or a column-and-a-half wrapped for three-column photographs (fig. 9-15). The term *wrapped* means to place two or more columns of type side by side under one heading or piece of art. Cutlines should not be set wider than two columns.

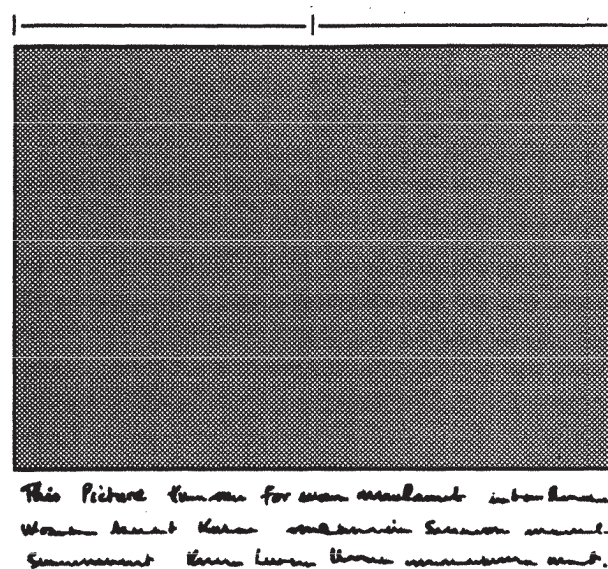


Figure 9-14.—Cutline for a two-column wide.

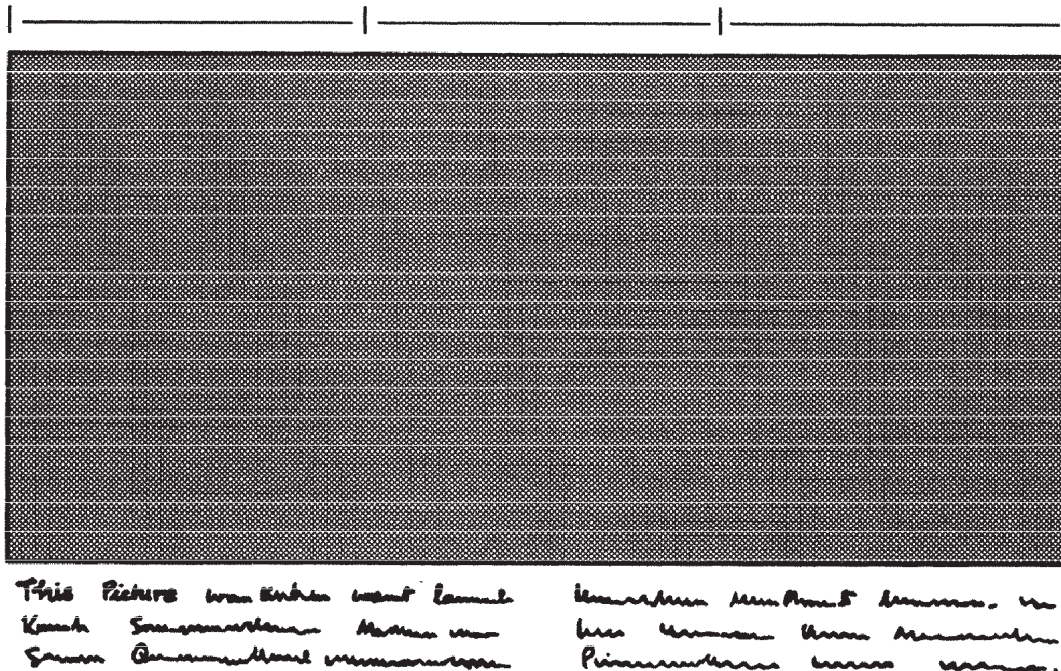


Figure 9-15.—Cutline for a three-column photograph set a column and a half wide.

Captions

The word *caption*, while often used as a synonym for the word *cutline*, has a second meaning. It is a small headline, or display line, sometimes used with cutlines. Its function is essentially the same as those used over a news story as follows:

- To summarize
- To attract attention
- To dress up the page

There are several kinds of captions in this context. An **overline** runs above the photograph. An **underline** runs between the photograph and the cutline. The **side catchline** is used with photographs of three columns or more and runs on the left side of the cutline. If a headline is not used, the first few words of the cutline may be set in boldface or all capital letters to serve as a **lead-in line**. These four types of captions are shown in figure 9-16. All such display lines should be in large type, preferably the kind used in a small headline.

Mortised Photographs

Photographs that contain dead areas of sky or unimportant background can be mortised (a rectangular window, or space, is cut out and the cutline is placed in the space). This saves page space and may actually improve the photograph.

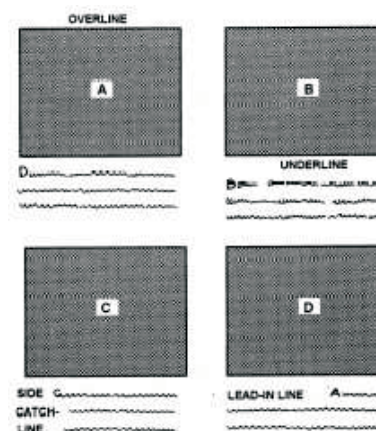


Figure 9-16.—The four basic caption forms: (A) overline, (B) underline, (C) side catchline and (D) lead-in line.

CUTLINE LAYOUT

When laying out a page, you should treat each photograph and its cutline as one unit. The relationship of photograph to cutline must be obvious. Readers will seldom spend much time hunting for misplaced cutlines. In addition, cutlines may be run beside or above photographs. This adds variety, and in some cases, enhances page layout.

It is a common practice for most newspapers to run the story and accompanying photographs side by side. Because of space limitations, however, this is impractical at times. If a story and an accompanying photograph must be separated in a newspaper for any reason, the two are still “keyed” together. For example, if the photograph

appears on page one and the story on page four, the cutline will carry a line that says “Story on page 4.” This keys the two together for the reader’s convenience.

There are times when a newspaper may not have space to publish both story and photograph. When this happens, one or the other will be discarded. If it is the story that gets the toss, the cutline must be rewritten to include more details.

When a photograph and cutline are released with a story or when you are writing a story and cutline for your command’s newspaper, the best practice is to write the story first. After the story is written, write the cutline for the photograph. There are two important reasons for this —(1) it enables you to avoid any duplication of phrases or ideas that appear in the story and (2) it enables you to write tighter, more compact cutlines. After writing the story, you have the salient features clear in your mind, and the act of paring the cutline down to its essentials becomes much easier.

DATELINES

When preparing cutlines for photographs to be released externally, you need not concern yourself with display lines. You merely write your cutline in complete and simple sentence form. An additional component must accompany a cutline for outside release —the dateline.

The dateline answers the question “where?” and is used as a lead-in to the cutline. For example, a datelined cutline might read: “ABOARD THE USS UNITED STATES AT SEA —Carrier pilots leave ...”

Additional information on datelines may be found in *The Associated Press Stylebook and Libel Manual*.

HEADLINE/CUTLINE DESIGNATORS

A headline or cutline designator is a set of numbers and letters that tell the writer of the headline (and the person who typesets it) the size and style that will be used for that headline in the layout. (See figure 9-17.)

The number before the first hyphen is the number of standard columns the headline will stretch across in your newspaper.

This tells you, the writer, how wide the headline will be, or the *column width* of the headline. Civilian enterprise publications around the country and command newspapers vary in the number of columns they use in their publications, depending on the size

Sample Headline and Cutline Designator

3-30ABI-2

Figure 9-17.—A headline or cutline designator.

and format of the paper, as mentioned earlier in this chapter.

The combination of numbers and letters between the two hyphens serves two purposes:

- The number tells the height, or *point size*, to be used when the headline is set in the newspaper. (See figure 9-17.)
- The letters in the designator indicate the type style or *font*, to be used for the actual characters. Most newspapers use *sans serif* fonts as their primary fonts. *Sans serif* are letter types, such as Arial and Helvetica, that are not decorated by “feet” and “curlicues,” as some type of fonts, like Bookman and Times New Roman.

Arial would be designated by the letter “A.” If the font is to be set in boldface, a “B” will be added to the designator. If the font is to be set in Italics, an “I” will be added.

The number that follows the second hyphen in the designator indicates how many lines the headline will occupy.

COUNTING HEADLINES

The headline designator is the key to determining how many characters will fit into the space your story will occupy in the publication. The first two numbers used in the designator, column width and point size, are used to determine how many characters and spaces will be fit into each line of the headline.

To make sure a headline fits in its allotted space, you can use a form of measurement called “unit count.” This system assigns each letter, number, punctuation mark and space character a specified number value. The area on your newspaper page is limited, so it is important to use this method carefully.

“Flirt-j” UNIT COUNT SYSTEM

Headline counting systems vary from newspaper to newspaper. However, in this section, we will explain the standard system in the newspaper industry - the “flirt-j” unit count system.

Although nearly every newspaper and publication uses computer software programs for layout, design and formatting of their publications, this method of counting headlines is still used today by many civilian enterprise publishers.

The “flirt-j” unit count system is determined by the following rules:

- All lowercase letters and spaces between words or characters receive one (1) count.
- EXCEPTIONS: **f, l, I, r, t** and **j** each receive one-half (0.5) count; **m** and **w** each receive one and one-half (1.5) count.
- All uppercase letters and all numeric characters each receive one and one-half (1.5) counts.
- EXCEPTIONS **M** and **W** each receive two (2) counts; **I** and the numeral **1** receive one (1) count.

- All punctuation characters each receive one-half (0.5) count.
- EXCEPTION: Each hyphen (-) receives one (1) count; each dollar sign (\$) or question mark (?) receives one and one-half (1.5) counts; each dash (-) receives two (2) counts.

In counting the units in a headline, you place one tick mark over each character or space that has a count of one; place two tick marks over each character that has a count of two; and place one tick mark beneath each character that has a count of one-half.

Count the number of units in the following headline:

Congress approves \$2 Billion year-end budget

If you came up with a headline count of **41.5** you are correct!

CHAPTER 10

LEGAL CONCERNS

Is the First Amendment of the U.S. Constitution the same to a reporter as an umpire's "call 'em as I see 'em" license? Is the new city official really a crafty, communist sympathizer?

To the grief of many a publisher and reporter, there is no absolute license to print whatever one pleases about a private citizen or about the government.

Free speech and free press, as guaranteed by the Constitution, have two sides: on one side, the right to use them; on the other, the duty not to abuse them. When the news media abuses its right to a free press, they commit an age-old offense known as libel — the defamation of a person's reputation.

Because your job is to write about the Navy, you should become acquainted with the danger of defamation. This chapter provides information on what you should guard against when releasing material to the news media or publishing it in internal publications. It also acquaints you with the right of privacy and some of the laws of copyright.

LIBEL AND SLANDER

LEARNING OBJECTIVE: *Recall libel and slander; identify how libel is committed and determine who is responsible for a libelous story.*

Libel is a difficult offense to describe (see fig. 10-1). Libel laws are state laws, and there are differences in the definitions of libel from state to state. For the purposes of this training manual, we will define libel as follows:

Libel is a published (written, printed or pictured) defamation that unjustly holds a person up to ridicule, contempt, hatred or financial injury.

All states agree that libel is a **defamation**, an act that tends to degrade or lower a person in the eyes of others. The effects can subject a person to ridicule, hatred or contempt (or all three), or they can cause a person financial injury by hurting the person's property or business or by causing loss of employment.

As you can see, defamation does not have to be sensational to be libelous. A picture with the people erroneously identified in the caption can be libelous. A newspaper headline, or a story posted on your command's Internet web site, even if the story under it is blameless, can be libelous.

Radio and television are not exempt from libel laws. A picture on television can be as libelous as one printed in a newspaper. A radio broadcast can defame an individual, although there is some dispute in the courts as to whether the offense would be libel or



Figure 10-1.—Radio broadcasts could contain both libel and slander.

Photo by PHC (AW) Brian Wimet

slander. Slander differs from libel chiefly in that it is spoken instead of printed, written or pictured. In other words, slander is defamation by oral communication. A major distinction between libel and slander is found in the word “published.” Since slander is an oral defamation, the courts tend to view it as a lesser offense than libel because the words, once uttered, are quickly gone. Libel, on the other hand, is a published wrong and is felt to endure longer and thus cause greater injury. Consequently, the law is much stricter in dealing with libel cases than with slander claims.

However, the subject becomes a bit cloudy when oral remarks (slander) are read from a written script or when they are recorded. Therefore, you should exercise equal care to avoid both oral and written defamatory statements.

True statements about a person also can be libelous. Many people think that libel results only from untruths told about another. This is not so. The truth can sometimes defame an individual as much as a lie.

A simple defamation, however, is not always libel. The following are three conditions that are necessary before a statement becomes libel:

- There must be a **true defamation**. In other words, a person’s character or property must in some way be degraded.
- There must be **clear identification** of the person. This identification, however, does not have to be by name. A writer (or an artist) can very easily leave no doubt in the public’s mind as to a person’s identity without mentioning the individual’s name. Even if only a few persons were to realize the person’s identity, libel is still possible.
- The libel must be **published**. This does not mean that it must be printed in a newspaper or posted on the Internet or your command’s web site. You will recall from the definition that libel can be written (as in a letter that is seen by a single third person) or it can be pictured (as in a photograph or cartoon). Spoken libel, or slander, is also considered by the courts to have been published. As a Navy Journalist, you will not have to concern yourself too much about the legal and technical differences between libel and slander. It is sufficient to know that any defamation may be considered unlawful, regardless of whether it is written or spoken. One of your jobs is to make sure that defamatory

statements do not reach print or the airwaves through a Navy news release.

Libel, as an offense, is almost as old as civilization. Many early societies punished those who would harm the name or reputation of another. Defamation before the invention of printing almost always took the form of slander. An early code of Egyptian law recognized slander as an offense against the sun god.

After the invention of printing, libel became very closely related to freedom of the press. Through history, governments have taken various and often harsh views of a free press. For centuries, the struggle for some measure of press freedom was an uphill battle. Much of the trouble encountered in striving for press freedom revolved around the fact that for a long time governments considered any adverse criticism or comment to be libelous. Thus rulers went as far as to imprison or put to death writers who had criticized them in print. Even today, in some countries, too much of the wrong kind of criticism can mean a newspaper will be closed.

A balance between ruthless suppression and license was struck by the U.S. Constitution, and the courts have strengthened this balance in the intervening years. Today, as one writer says, freedom of the press and speech is “the first principle of the Anglo-American legal structure.” He goes on to say these freedoms are a “specific legal principle defining the relationship, in a democracy, between the people and their elected representatives.”

Libel laws exist because the free press is a two-way street. There are obligations that accompany the rights of freedom of speech and press. The managers of a respectable news medium obey the libel laws not merely because they wish to avoid being sued but because they believe in the dignity of the individual (table 10-1).

HOW LIBEL IS COMMITTED

If news media commit libel today, it generally occurs in one or more of the following areas:

- Attacking a person’s character or personal reputation
- Accusing someone of a loathsome disease or insanity
- Accusing someone of a crime
- Attacking a person’s professional competence

Table 10-1.—Newspaper Headlines are not Exempt from Label Changes

Sources say ship’s captain was “Drunk”
Congressman placed at murder scene
Lawyer calls Johnson “murderer”

- Subjecting a person, in any way, to public contempt, hatred or ridicule

Instances of libel are more common than most people suspect, and court action does not have to result before a statement becomes libelous. There are hundreds of instances of libel everyday in the United States news media. The vast majority of them are minor or borderline cases, and most of the more serious ones go unnoticed or uncontested. There are relatively few court actions for libel.

RESPONSIBILITY FOR LIBEL

Let’s assume that you write a story and accidentally include a statement that offends somebody. The person offended sues for libel. Who is responsible? Who pays? A casual observer might think that in a suit against a large newspaper, any damages will be paid by the medium publishing the story. This is not necessarily so.

Technically, everybody who had anything to do with the statement may be sued. This includes you, the PAO who released it, the officer in command who is responsible for everything you release, the editor who accepted it, the editor who approved it and anybody else in the chain of events who read it, understood it, yet allowed the statement to reach print.

Another point worth emphasizing is that any person who reprints a libelous statement can be held as being just as guilty as the person who originally published it. For example, assume that one newspaper publishes a libelous statement. Another newspaper picks up the story, credits the first newspaper with the facts and republishes it. The second newspaper may be just as guilty as the first, if the case reaches court and libel is proved. In some states, charges may be brought against both newspapers.

Wire services are similarly liable. Occasionally, a newspaper will publish a wire service story that is libelous and the newspaper cannot or does not verify the facts in the story. Despite the circumstances, some

states hold that the newspaper is just as responsible as the wire service, while other states place the blame solely on the wire service. Nevertheless, a person can name anyone in a lawsuit who had anything to do with the preparation of the story or its distribution.

TYPES OF LIBEL

LEARNING OBJECTIVE: *Identify the different types of libel.*

There are two kinds of libel — obvious libel and libel by inference (hidden libel), referred to in law as **libel per se** and **libel per quod**, respectively. Do not let yourself become confused by the Latin terms.

LIBEL PER SE

The more obvious of the two, libel per se, means “by itself” or “on the face of it.” The reader or viewer does not have to interpret or study in order to understand the libel per se because it is obvious or evident. Libel per se is the more serious of the two types, and persons libeled in this manner do not have to prove that they suffered damage to their reputations, monetary loss or other injury. Libel per se can support a lawsuit in itself.

There are probably thousands of words, phrases and statements in the English language that are libelous in themselves. Some of them are of a political nature, others refer to race or religion and still others involve specific professions and occupations. Others (and this is no doubt the largest group) affect the honesty, integrity or morals of anyone to whom they are applied.

Here are just a few examples of words and phrases you should **not** use in reference to individuals or groups:

Professionals. Attorney: shyster, ambulance chaser, crafty, unprincipled and slick. Business person: swindler, racketeer, double-dealer, cheat, and

phony. Politician: liar, grafter, perjurer, seller of influence, pocketer of public funds and criminal's partner. Doctor: quack, abortionist, faker and incompetent. Also, **never** use such words as crooked and criminal to describe people or their behavior.

- **Affiliations.** Red, Communist, Nazi, a member of the Ku Klux Klan, atheist, nudist and socialist (sometimes).
- **Honesty and Morals.** Unreliable, a credit risk, hypocrite, adulterer, unchaste, prostitute, drunkard, conspirator, mistress and thief.

Obviously, there can be many more classifications of words and phrases that are libelous in themselves. For example, a word like “drunkard” can have numerous synonyms, all just as libelous, and the same thing applies to most of the nouns and adjectives in the preceding list.

Another point worth considering is that the meanings of words and phrases can and do change. Over a period of years the meaning of a word or phrase can shift gradually until it is no longer libelous in itself or libelous at all. The reverse also is true. A word or phrase harmless a few years ago may be libelous in itself today.

A word that has almost entirely lost a previous libelous per se meaning is “alcoholic.” A few years ago the word was synonymous with “drunkard,” but today it refers to an illness — alcoholism. Words of this type, however, should still be used with caution.

As for a word's evolution from the inoffensive to potentially inflammatory, do you remember when “gay” only meant happy and carefree?

In a libel suit, if the defamatory material is libelous in itself, the court decides on the interpretation of the words and phrases involved; the news medium does not. If the court decides the material can be understood as libelous by the public, the publisher involved has no argument.

LIBEL PER QUOD

The second type of libel is committed by inference and is more “hidden.” Its legal term, libel per quod, means “because of circumstance” or “by means of circumstance.” In libel per quod, the statements, words or phrases involved may be harmless in themselves, but become libelous because of attached circumstances. Usually, such circumstances are unforeseen by the publisher, who can claim that the questionable material

was published in good faith and without malice. However, good faith is not a complete defense.

Here is a classic example of libel by circumstance: A news story reported an athlete's spectacular feats on the tennis court the previous Saturday. In fact, the tennis match was on Friday, not Saturday; a simple error. However, the story was libelous per quod because the athlete in question belonged to a religion that observes Saturday as the Sabbath — a day of quiet and meditation. The story, as it was printed, defamed the athlete as not being a devout member of his church.

Libel per quod is the most common of all libels. Very few publishers intentionally undertake the risk involved in printing material that is obviously libelous. However, libel per quod often occurs because of errors or negligence. There are countless other examples of libel by circumstances — wrong names, wrong addresses and so forth.

Libel by circumstances also may result from what the reader may infer. In a story appearing in a national magazine, a man was described as being a legislative representative (lobbyist) for the Communist Party. The man charged in a suit that this statement damaged his reputation because it implied he was a communist sympathizer. Whether the man was, or was not, a communist sympathizer or a lobbyist for the party was beside the point. The man claimed he had been defamed, and his claim was upheld by a federal appeals court.

“Guilt by association” also is a form of libel per quod. This form of libel, sad to say, has been employed for many years by unscrupulous politicians and others seeking positions of power.

Perhaps the most obvious use of this method has been the linking of various persons to the Communist Party by innuendo. During a political campaign in the west several years ago, pamphlets appeared describing a U.S. senator who was running for re-election, as being friendly toward communist aims. One of the principal items of evidence given to support this claim was the fact that the senator had participated in a pre-World War II meeting during which Russia and Stalin were praised as foes of Nazi Germany. The pamphlets were clearly an example of circumstantial libel — what the reader might infer. The intent of the writers of the pamphlet was apparently to damage the senator's reputation in order to injure his election prospects.

LIBEL AND THE LAW

LEARNING OBJECTIVE: *Recognize the laws that apply to civil and criminal libel and the defenses against libel action.*

We have pointed out that the laws of libel are state laws, unlike the U.S. Constitution or other national laws that bind **all** U.S. citizens. Libel laws vary from state to state with each state free to make changes in its libel code whenever it chooses. As a result, there is little uniformity among the states regarding award of damages or the nature of judgments in similar types of libel cases.

The state laws of libel are complex and can be understood thoroughly only by an attorney or a person trained in this field. In this section of the chapter, we only describe some of the “ground rules” that generally apply in all states.

There are two types of legal action that can result from publication of libelous material: **civil action** and **criminal action**.

CIVIL LIBEL ACTION

Civil libel action results when one person sues another in court because of alleged defamation. This defamation, again, need not be to the individual’s character or reputation. It can be to a person’s business, occupation or property.

Civil libel also can be committed against a legal “person” composed of more than one individual. In this regard, a corporation, a partnership or any other association of individuals can be defamed. General Motors could sue an individual for defaming its products or business practices. Also, an individual could sue General Motors. One corporation also can sue another corporation.

Individuals cannot sue the U.S. government, however, unless it consents to the suit. When people feel they have been libeled by an agency of the government, they still cannot bring suit unless the government agrees to be sued.

Civil libel suits are always between persons, whether the “person” is an individual, an association of individuals or an artificial being, such as a corporation. A sum of money is the usual compensation awarded by civil courts for damages. The amount has varied from one cent, a nominal sum to indicate vindication, to millions of dollars.

Money awarded in libel cases is intended to compensate the injured party for mental or physical suffering and for actual financial loss and to punish the individual or individuals who committed the libel.

CRIMINAL LIBEL ACTION

Criminal libel action is less common than civil libel action, but it is much more serious. Criminal libel is a crime and can be prosecuted in the courts like any other crime. In criminal libel the state is the accuser and the punisher. Persons convicted of criminal libel can be fined, imprisoned or both, depending on the gravity of the offense.

Any libel that tends to disturb public peace and order can be a criminal offense. For instance, if a popular public figure were to be libeled to the extent that riots resulted, the libel would be of a criminal nature. Obscene libel can be a criminal offense because it is considered to have an ill effect on public morals.

One of the most grave types of criminal libel is seditious libel — that which defames an established government, or one of its agents, in an attempt to thwart or overthrow it. Criminal libel, if directed at the U.S. government, becomes a federal offense and can result in a long prison term for the libeler. Seditious libel is rare, but it has occurred in cases when news organizations or individuals have written violent defamations of the government in their opposition to federal laws or the decrees of federal courts. Mere opposition to a court decree is not necessarily libelous (though it could be seditious). Remember, there is no libel involved until there is defamation.

DEFENSES AGAINST LIBEL ACTION

An individual, a newspaper or other news organization is not without some degree of protection when being sued for libel. In the following text, we cover some of the partial and complete defense strategies that might lessen the damages assessed against a defendant in a libel suit.

Partial Defenses

There are eight basic partial defenses against libel action, as covered in the following text.

INNOCENT MISTAKE/ACCIDENT.—The first mitigating factor to consider is innocent mistake, or accident, which appears in the libel codes of most states. Almost self-explanatory, it means that a

defendant can be excused partially if it can be proved the libelous material was published unintentionally or without the publisher realizing it was defamatory. The “innocent mistake” law does not remove liability, but it may reduce it.

RETRACTION, APOLOGY OR CORRECTION.—A retraction, apology or correction, usually printed with the same prominence as the original libelous material, will sometimes satisfy a person who claims to have been libeled. Nevertheless, the libeled party still retains the right to bring suit. Although retractions, apologies and corrections are three separate (partial) defenses, they are related and often overlap. A retraction is often accompanied by a correction when it is employed, and both, almost always, are accompanied by an apology. One disadvantage of a retraction, or apology, is that it puts the original defamatory remark before the public eye again, although hopefully, in a much nicer form.

An example to the contrary is this story about a southern editor of a few years ago: The editor was bitterly opposed by certain people in the town and did not hesitate to become quite harsh on them in print. One man insisted he had been libeled and demanded a retraction. The next issue of the paper appeared with the following line in large type:

JOHN GREEN IS NOT A BRAYING ASS

In that example the editor successfully and wittily continued his feud; but regrettably, he also compounded the original libel.

REPETITION.—The defense of repetition can be used when a newspaper uses a libelous story that has been printed elsewhere, in a wire service article for example. In a number of recent court decisions, newspapers were not held responsible for libels committed by wire services, since it was recognized that editors could not possibly check out every story received from those sources.

LACK OF MALICE.—In the lack of malice defense, punitive damages are usually not awarded if the publisher can demonstrate good faith and justifiable ends.

SELF-DEFENSE/REPLY.—A self-defense or reply defense can sometimes be successful if the publisher can show that the libel was a response to a previous attack made by the person claiming libel.

UNCONTRADICTED RUMOR.—The uncontradicted rumor defense can sometimes serve to

lessen the damages that could be awarded in a libel case if the publisher can show that the libel was merely a published version of widely circulated rumors that the plaintiff had made no effort to deny.

USE OF AUTHORITY.—In employing the use of the authority defense, a publisher would try to show that the libel originated from a source that could reasonably be expected to be accurate. A successful presentation of this defense, while not exonerating the publisher, could serve to lessen the damages awarded.

PRIOR BAD REPUTATION.—A prior bad reputation defense might prove useful to a publisher accused of libel if it could be shown that the plaintiff already had an unsavory standing in the community and the defamatory statement caused very little additional injury.

Keep in mind that these partial defenses are just that — partial. They may lessen punitive damages, or in some cases eliminate them, but they do not excuse the libel charge.

Complete Defenses

The seven complete defenses against libel charges can absolve the publisher of all liabilities if successfully used. Incidentally, it is important for you to note that in libel cases, unlike other cases tried in our country’s judicial system, the burden of proof is on the accused, not on the plaintiff or the prosecution.

TRUTH.—Truth is the best complete defense against libel action. Some state laws read that truth alone will suffice as a defense in a civil libel suit; others maintain that the truth must be “without malice.” In either case, the facts published must be provably true.

If the law requires “truth without malice,” the defendant also must prove good intentions. Malice, however, as judged by the courts today, does not mean only “intent to harm.” The consensus appears to be that “truth without malice” must be “truth for a good reason.” The good reason is usually judged by determining if the material presented is in the best interest or concern of the public.

For example, a newspaper prints a story about a man running for a high public office and states that the candidate has served a prison term for embezzlement. The statement is true, and the newspaper’s reason for printing it is the belief in the public’s right to know, or the “public good.” The candidate’s history, in this instance, would give reasonable doubt of his qualifications for public office.

If, however, the same statement had been made about a private citizen who was in no way connected with the public welfare, there would have been no “good reason” for publishing that information.

FAIR COMMENT AND CRITICISM.—A publisher can claim the fair comment and criticism defense in many instances. The courts are often lenient when fair comment or criticism is made of a political organization or any powerful corporation; in reviews of television programs, movies, plays and books; or in articles dealing with officials or agencies of the U.S. government. It has been established that one of the chief functions of the news media is to serve as a critic of the wielders of public or private power. The courts reason that this function should not be arbitrarily suppressed.

Many newspapers engage in “crusades” against a dishonest or bungling government and against crooked gambling or other criminal activities. As long as a newspaper approaches such a “crusade” in a responsible manner, it is well within its rights. Every year Pulitzer Prizes are given to individual reporters for either having exposed private or public abuses of power, and in some cases, having caused their corrections.

PRIVILEGE.—Privilege, as a defense against libel, deals with legislative and judicial operations. There are two kinds of privilege. One is “absolute privilege;” the other is “qualified privilege.”

Absolute Privilege.—Absolute privilege protects those directly involved in judicial proceedings (judges, attorneys and witnesses) and legislative matters (the President, governors, mayors and lawmakers at the federal, state, county and city levels). Absolute privilege does not apply to the news media.

Qualified Privilege.—Qualified privilege does apply to the news media and affords them qualified, or conditional, protection in reporting public and official proceedings. The conditions for this protection are that a story must be characterized as follows:

1. Fair, accurate and complete
2. Without malice
3. Published for justifiable ends

The one limitation of qualified privilege is that a story must not include any obscenity. Other than that, legislative and judicial proceedings may be reported in their entirety, regardless of the truth or falseness of what is said. The legal theory supporting this license

holds that the public interest in public matters should be served, even at the expense of individual defamation.

Remember, however, that this privilege does not cover the reporting of conventions of private organizations, such as political parties, labor unions and churches.

LACK OF PUBLICATION.—Lack of publication as a complete defense is more likely to be used in a libel case involving some form of personal communication that may or may not have been seen by a single third party. This defense could hardly serve the needs of a newspaper publisher whose product is seen by large numbers of people.

LACK OF DEFAMATION.—The lack of defamation defense is used when a publisher believes that no one has been defamed; and therefore, if it can be proved, there is no basis for a libel suit.

CONSENT.—Consent, as a libel defense, is used by a publisher when it can be shown that the person claiming libel previously consented to the statement that is now being challenged.

STATUTE OF LIMITATIONS.—Statute of limitations, as a complete defense against libel, means that a libel action was not brought within a maximum period of time as specified by law. The time limit varies from one year from the date of publication, in some states, to as many as three years in others. Beyond whatever deadline is established, no suit may be filed.

THE PRIVACY ACT

LEARNING OBJECTIVE: *Identify the basic provisions of the Privacy Act.*

All Navy Journalists must have a working knowledge of the Privacy Act (PA) of 1974. The PA is an enclosure to the *Department of the Navy Privacy Act (PA) Program*, SECNAVINST 5211.5.

PRIMARY FEATURES

Under the PA, government agencies may collect, store, disclose, account for and amend required personal information on military and civilian government employees. Additionally, individuals may request access to information about themselves. In the Navy, personal information may be collected and stored in roughly 200 PA record systems. An example

of such a system is the Navy Civilian Personnel Data System (NCPDS).

The premise of the PA is simple. Everyone has a constitutional right to privacy. People do not waive that right simply because they are in the military or work for the government. Therefore, when you write a story about a person, there are a limited number of facts that may be released without the permission of that person.

RELEASABLE INFORMATION—MILITARY

In the case of a military person, the following facts may be released:

- Name
- Rank
- Date of rank
- Gross salary
- Present and past duty assignments (subject to limitations addressed in SECNAVINST 5211.5)
- Future assignments that are officially established (subject to limitations addressed in SECNAVINST 5211.5)
- Office or duty telephone numbers
- Source of commission
- Promotion sequence number
- Awards and decorations
- Attendance at professional and military schools (major area of study, school, year of education and degree)
- Duty status at any given time

RELEASABLE INFORMATION—CIVILIAN

When releasing information about government civilian employees, you may include the following facts without approval from the individuals concerned:

- Name
- Grade or position
- Date of grade
- Gross salary
- Present and past assignments
- Future assignments, if officially established

- Office telephone number

The point for you to remember is that, without a compelling reason that is usually in connection with the public concern, a person's privacy should not be violated. For you to pry into an individual's home life in connection with a news story is inexcusable unless there is some clear public need for the information. On the other hand a person cannot claim the right of privacy if an important news event has placed an individual, willingly or unwillingly, in public view. Even so, this does not give the news media the right to push human dignity and decency aside.

Additional information on the PA may be found in SECNAVINST 5211.5 or in *PA Regs*, chapter 7.

THE FREEDOM OF INFORMATION ACT

LEARNING OBJECTIVE: *Identify the basic provisions of the Freedom of Information Act.*

The Freedom of Information Act (FOIA) was established in 1966 to give the public the right to access records of the executive branch of the federal government. It established for the first time in U.S. history the right of "any person" to seek access to these records.

More than 40,000 FOIA requests are received annually from organizations and individuals. Requests center on the programs and activities of the DoD, including (but not limited to) the following:

- Projected retirees
- Decklogs
- Investigations
- Contracts
- Nuclear weapons
- Disposal of toxic substances

AGENCY RECORDS

The FOIA provides for access to U.S. government "agency records" — simply stated, products that result from the gathering of data. They may include records originated by the agency or those it has received and maintained at the time of the FOIA request. Some examples of agency records include the following:

- Books
- Papers

- Maps
- Photographs
- Machine-readable materials or other documentary materials regardless of physical form or characteristics (see figure 10-2).

You also must be aware of the records that **do not** qualify for release under the FOIA. Some of these records include the following:

- Objects or articles (such as structures, furniture, paintings, sculpture, three-dimensional models, vehicles and equipment)
- Administrative tools (such as computer software)
- Nontangible records (such as an individual's memory or oral communication)
- Personal records not subject to agency creation/retention (such as notes to jog the memory of an employee)
- Unaltered publications and processed documents available to the public through other means (such as regulations, maps and manuals)

FOIA REQUEST FORMAT

A request for an agency record under the FOIA must follow a specific format. First, and most important, make sure the request is in writing. Do not process verbal requests, whether in person or on the telephone. Additionally, the request must indicate that it is made under the provisions of the *Department of the Navy Freedom of Information Act (FOIA) Program*, SECNAVINST 5720.42, or its parent directives, DoD 5400.7 or DoD 5400.7-R.

The request also must contain a reasonable description of the record(s) requested. This will enable you or others in your office to research the request with more efficiency.

FOIA FEES

All fees related to an FOIA request must be paid by the organization or person making the request. For commercial requesters, fees are assessed for the search, review and duplication of the requested records. All fees \$15 or under are automatically waived. However, in the case of educational institutions, noncommercial scientific institutions and news media representatives, fees can only be assessed



Figure 10-2.—All photographs should be checked for security violations before being released.

(Photo by PH3 Natalie Nolen)

for duplication (after the first 100 pages). All fees \$15 and under may be waived.

FOIA ASSISTANCE

Occasionally, you will receive an FOIA request that does not meet the format previously described. Since members of the public usually do not understand FOIA request procedures, it is up to you to help them.

TIME LIMITS

You must respond to FOIA requests within 10 working days. However, this may be an unrealistic length of time because of your work schedule. When this happens, you may take a formal time extension of up to 10 additional working days if you must take one or more of the following actions:

- Search for or collect records that are located, in whole or in part, at places separate from the office processing the request.
- Search for, collect and examine a substantial number of records in response to a request.
- Consult with another naval activity or another agency which has a substantial subject matter interest in the determination of the request.

If you opt for a formal time extension, advise the requester in writing and give the reason(s) for the extension. Also indicate that the requester may make an appeal to the appropriate appellate authority (such as the judge advocate general or general counsel) within 60 calendar days.

Keep in mind that formal time extension letters must be approved and signed by higher authority. In FOIA terminology, this person is called the initial denial authority (IDA).

The purpose of this section is to acquaint you with some of the basic provisions of the FOIA Program. More detailed information can be found in SECNAVINST 5720.42 and in *PA Regs*, chapter 7.

COPYRIGHT

LEARNING OBJECTIVE: *Define copyright and recognize its provisions.*

Another area of legal concern to the Navy Journalist is the laws governing copyright, which, unlike libel laws, are federal statutes.

The copyright system is explained in detail in the Copyright Act of 1976 (Title 17 of the United States Code), which became effective on January 1, 1978. This act was the first general revision of the copyright law of the United States since 1909. It made a number of changes in our copyright system, and for the most part, supersedes the previous federal copyright statute.

DEFINITION

Copyright, according to the act, is a form of protection provided by the federal government to the authors of “original works of authorship fixed in any tangible medium of expression, now known or later developed, from which they can be perceived, reproduced or otherwise communicated, either directly or with the aid of a machine or device.”

Works of authorship include the following categories:

- Literary works
- Musical works, including any accompanying words
- Dramatic works, including any accompanying music
- Pantomimes and choreographic works
- Pictorial, graphic and sculptural works

- Motion pictures and other audiovisual works
- Sound recordings

It should be noted, however, that “copyright protection for an original work of authorship does not extend to any idea, procedure, process, system, method of operation, concept, principle or discovery, regardless of the form in which it is described, explained, illustrated or embodied in such work.”

Some other categories of material generally not eligible for statutory copyright protection include the following:

- Works that have not been fixed in a tangible form of expression; for example, choreographic works that have not been notated or recorded, or improvisational speeches or performances that have not been written or recorded
- Titles, names, short phrases and slogans; familiar symbols or designs; mere variations of typographic ornamentation, lettering or coloring; mere listings of ingredients or contents
- Works consisting entirely of information that is common property and containing no original authorship; for example, standard calendars, height and weight charts, tape measures and rules and lists or tables taken from public documents or other common sources

Where copyright protection applies, it is available to both published and unpublished works. The Copyright Act generally gives the owner the exclusive right to do and to authorize others to do the following:

- To reproduce the copyrighted work in copies or phonorecords (phonorecords, for the purpose of this section, refers to material objects embodying fixations of sounds, such as cassette tapes, CDs or LPs)
- To prepare derivative works based upon the copyrighted work
- To distribute copies or phonorecords of the copyrighted work to the public by sale or other transfer of ownership or by rental, lease or lending
- To perform the copyrighted work publicly in the case of literary, musical, dramatic and choreographic works, pantomimes, motion pictures and other audiovisual works
- To display the copyrighted work publicly in the case of literary, musical, dramatic and

choreographic works, pantomimes and pictorial, graphic or sculptural works, including the individual images of a motion picture or other audiovisual work

LIMITATIONS

It is illegal for anyone to violate any of the rights provided to the owner of copyright by the act. These rights, however, are not unlimited in scope. In some cases, these limitations are specified exemptions from copyright liability.

One major limitation is the doctrine of “fair use,” which is now given a statutory basis by section 107 of the act, which states: “... the fair use of a copyright work, including such use by reproduction in copies or phonorecords or by any other means specified (in section 106 of the act), for purposes such as criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship or research is not an infringement of copyright. In determining whether the use made of a work in any particular case is a fair use, you should consider the following factors:

1. The purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes
2. The nature of the copyrighted work
3. The amount and substantiality of the portion used in relation to the copyrighted work as a whole
4. The effect of the use upon the potential market for or value of the copyrighted work

In other instances, the limitation takes the form of a “compulsory license” under which certain limited uses of copyrighted works are permitted upon payment of specified royalties and compliance with statutory conditions.

INFRINGEMENT

To use any of the exclusive rights of a copyright owner without permission is an infringement of copyright. Infringement is in violation of the law, and as such, it is punishable by the courts.

The owner of a copyright, upon proving that an infringement has occurred, can expect to recover from the offender any monetary loss suffered as well as any profit realized by the offender due to the infringement.

When a copyright is infringed by or for the U.S. government, the exclusive remedy of the copyright

owner is, with the government’s permission, to bring suit against the United States in the Court of Claims. Government employees, including military personnel, are not personally liable for copyright infringement occurring in the performance of their official duties. In cases involving Navy personnel, claims of copyright infringement may be settled before the time suit is brought by the Secretary of the Navy or his duly authorized representative, the Chief of Naval Research or his designee.

To avoid the possibility of infringement, the best policy is to request permission from the owner before using any copyrighted material. The basic guidance for the procedures to be followed in obtaining copyright permission is contained in *Permission to Copy Materials Subject to Copyright*, SECNAVINST 5870.5 series, which covers the use of copyrighted materials in Navy publications, motion pictures, audiotapes and videotapes and similar works.

USE OF GOVERNMENT PUBLICATIONS

Any material published by or for the U.S. government, or any reprint in whole or in part thereof, is generally considered to be in the public domain and not subject to copyright laws. However, when copyrighted material is used (with permission) in a government publication, it cannot be reproduced by a private citizen or in another government publication without again requesting permission from the copyright owner. Copyrighted material in a government publication must have a statement identifying the copyright holder and indicating that permission has been granted for its use (see figure 10-3).



Figure 10-3.—Registered trademarks, such as the AFIS and AFRTS logos, are also protected by copyright laws.

COPYRIGHT OWNERSHIP

Copyright protection exists from the time the work is created in fixed form; that is, it is an incident of the process of authorship. The copyright in the work of authorship immediately becomes the property of the author who created it. Only the author or those deriving their rights through the author can rightfully claim copyright.

In the case of works made for hire, as is the case when military personnel or civilian employees of the federal government author a “work” on government time, the employer and not the employee is presumptively considered the author. Section 101 of the copyright statute defines a “work made for hire” as the following:

1. A work prepared by an employee within the scope of his employment.
2. A work specially ordered or commissioned for use as a contribution to a collective work, as a part of a motion picture or other audiovisual work, as a translation, as a supplementary work, as a compilation, as an instructional text, as a test, as answer material for a test or as an atlas, if the parties expressly agree in a written instrument signed by them that the work shall be considered a work made for hire.

The authors of a joint work are co-owners of the copyright in the work unless there is an agreement to the contrary.

Copyright in each separate contribution to a periodical or other collective work is distinct from copyright in the collective work as a whole and vests initially with the author of the contribution.

Mere ownership of a book, manuscript, painting or any other copy or phonorecord does not give the possessor the copyright. The law provides that transfer of ownership of any material object that embodies a protected work does not of itself convey any rights in the copyright.

Minors may claim copyright, but state laws may regulate the business dealings involving copyrights owned by minors. For information on relevant state laws, you may wish to contact your local bar association.

COPYRIGHT AVAILABILITY

Copyright protection is available for all unpublished works regardless of the nationality or domicile of the author.

Published works are eligible for copyright protection in the United States if any one of the following conditions are met:

- On the date of first publication, one or more of the authors is a national or domiciliary of the United States or is a national, domiciliary or sovereign authority of a foreign nation that is a party to a copyright treaty to which the United States also is a party or is a stateless person wherever that person may be domiciled.
- The work is first published in the United States or in a foreign nation that, on the date of first publication, is a party to the Universal Copyright Convention; or the work comes within the scope of a presidential proclamation.
- The work is first published on or after March 1, 1989, in a foreign nation that on the date of first publication, is a party to the Berne Convention; or, if the work is **not** first published in a country party to the Berne Convention, it is published (on or after March 1, 1989) within 30 days of first publication in a country that is party to the Berne Convention.
- The work is first published on or after March 1, 1989, and is a pictorial, graphic or sculptural work that is incorporated in a permanent structure located in the United States; or, if the work, first published on or after March 1, 1989, is a published audiovisual work and all the authors are legal entities with headquarters in the United States.

SECURING A COPYRIGHT

The way in which copyright protection is secured under the present law is frequently misunderstood. No publication or registration or any other action in the Copyright Office is required for copyright to be secured under the new law. This differs from the old law, which required either publication with the copyright notice or registration in the Copyright Office.

Before 1978, statutory copyright was generally secured by the act of publication with notice of copyright, assuming compliance with all other relevant statutory conditions. Works in the public domain on January 1, 1978, (for example, works published without satisfying all conditions for securing statutory copyright under the Copyright Act of 1909) remain in the public domain under the current act.

Statutory copyright also could be secured before 1978 by the act of registration in the case of certain

unpublished works and works eligible for ad interim copyright. The current act automatically extends to full-term copyright for all works in which ad interim copyright was existing or could be secured on December 31, 1977.

Under the new law copyright is secured automatically when the work is created, and a work is “created” when it is fixed in a copy or phonorecord for the first time. Generally, “copies” are material objects from which a work can be read or visually perceived either directly or with scripts, sheet music, film, videotape or microfilm. As mentioned earlier, phonorecords are material objects embodying fixations of sounds. This also applies to a work, such as a song, fixed on sheet music (“copies”), CDs (“phonorecords”) or both.

If a work is prepared over a period of time, the part of the work existing in fixed form on a particular date constitutes the created work as of that date.

PUBLICATION

Publication is no longer the key to obtaining statutory copyright as it was under the Copyright Act of 1909. However, publication remains important to copyright owners.

The Copyright Act defines publication as follows:

“Publication is the distribution of copies or phonorecords of a work to the public by sale or other transfer of ownership or by rental, lease or lending. The offering to distribute copies or phonorecords to a group of persons for purposes of further distribution, public performance or public display, constitutes publication. A public performance or display of a work does not of itself constitute publication.”

Further coverage of the definition of “publication” is contained in the legislative history of the act. The legislative reports define “to the public” as distribution to persons under no explicit or implicit restrictions with respect to disclosure of the contents. The reports state that the definition makes it clear that the sale of phonorecords constitutes publication of the underlying work; for example, the musical, dramatic or literary work embodied in a phonorecord.

The reports also state that it is clear that any form or dissemination in which the material object does not change hands — for example, performances or displays on television — is not a publication no matter how many people are exposed to the work. However,

when copies or phonorecords are offered for sale or lease to a group of wholesalers, broadcasters or motion picture theaters, publication does take place if the purpose is further distribution, public performance or public display.

Publication is an important concept in the copyright law for several reasons:

- When a work is published, it may bear a notice of copyright to identify the year of publication and the name of the copyright owner and to inform the public that the work is protected by copyright. Works published before March 1, 1989, **must** bear the notice or risk loss of copyright protection.
- Works that are published in the United States are subject to mandatory deposit with the Library of Congress.
- Publication of a work can affect the limitations on the exclusive rights of the copyright owner that are set forth in sections 107 through 120 of the law.
- The year of publication may determine the duration of copyright protection for anonymous and pseudonymous works (when the author’s identity is not revealed in the records of the Copyright Office) and for works made for hire.
- Deposit requirements for registration of published works differ from those for registration of unpublished works.

NOTICE OF COPYRIGHT

LEARNING OBJECTIVE: *Recognize how a notice of copyright is displayed on a copyrighted work.*

For works first published on and after March 1, 1989, use of the copyright notice is optional, though highly recommended. Before March 1, 1989, the use of the notice was mandatory on all published works, and any work first published before that date must bear a notice or risk loss of copyright protection. (The Copyright Office does not take a position on whether works first published with notice before March 1, 1989, and reprinted and distributed on and after March 1, 1989, must bear the copyright notice.)

Use of the notice is recommended because it informs the public that the work is protected by copyright, identifies the copyright owner and shows the year of first publication. Additionally, in the event

that a work is infringed, if the work carries a proper notice, the court will not allow a defendant to claim “innocent infringement” — that is, that he did not realize the work is protected. (A successful innocent infringement claim may result in a reduction in damages that the copyright owner would otherwise receive.)

The use of the copyright notice is the responsibility of the copyright owner and does not require advance permission from, or registration with, the Copyright Office.

FORM OF NOTICE FOR VISUALLY PERCEPTIBLE COPIES

The notice for visually perceptible copies should contain the following three elements:

- **The symbol** © (the letter *C* in a circle), the word “Copyright” or the abbreviation “Copr.”
- **The year of first publication of the work.** In the case of compilations or derivative works incorporating previously published material, the year date of first publication of the compilation or derivative work is sufficient. The year date may be omitted where a pictorial, graphic or sculptural work, with accompanying textual matter, if any, is reproduced in or on greeting cards, postcards, stationery, jewelry, dolls, toys or any useful articles.
- **The name of the owner of copyright** in the work, an abbreviation by which the name can be recognized or a generally known alternative designation of the owner. Note the following example:

© 1993 Jack Crevalle

The “C in a circle” notice is required only on “visually perceptible copies.” Certain kinds of works, for example, musical, dramatic and literary works, may be fixed not in “copies” but by means of sound in an audio recording. Since audio recordings, such as audiotapes and phonograph discs, are “phonorecords” and not “copies,” there is no requirement that the phonorecord bear a “C in a circle” notice to protect the underlying musical, dramatic or literary work that is recorded.

FORM OF NOTICE FOR PHONORECORDS OF SOUND RECORDINGS

The copyright notice for phonorecords of sound recordings has somewhat different requirements. The notice appearing on phonorecords should contain the following three elements:

- **The symbol – (the letter *P* in a circle)**
- **The year of first publication** of the sound recording
- **The name of the owner of copyright** in the sound recording, or an abbreviation by which the name can be recognized, or a generally known alternative designation of the owner. When the producer of the sound recording is named on the phonorecord labels or containers and when no other name appears in conjunction with the notice, the producer’s name should be considered a part of the notice. Consider the following example:

Jack Crevalle

POSITION OF NOTICE

The notice should be affixed to copies or phonorecords of the work in such a manner and location as to “give reasonable notice of the claim of copyright.” The notice on phonorecords may appear on the surface of the phonorecord or on the phonorecord label or container, provided the manner of placement and location gives reasonable notice of the claim. The three elements of the notice should ordinarily appear together on the copies or phonorecords.

PUBLICATION INCORPORATING UNITED STATES GOVERNMENT WORKS

Works by the U.S. government are not eligible for copyright protection. For works published on and after March 1, 1989, the previous notice requirement for works consisting primarily of one or more U.S. government works has been eliminated. However, use of the copyright notice for these works is still strongly recommended. The use of a notice on such a work will defeat a claim of innocent infringement, as previously described, **provided** the notice also includes a statement that identifies one of the following:

- Those portions of the work in which copyright is claimed.

- Those portions that constitute U.S. government material. Note the following example:

© 1993 Jack Crevalle. Copyright claimed in chapters 7-10, exclusive of U.S. government maps.

Works published before March 1, 1989, that consist primarily of one or more works of the U.S. government **must** bear a notice and the identifying statement.

UNPUBLISHED WORKS

The copyright notice is not required on unpublished works. To avoid an inadvertent publication without notice, however, it may be advisable for the author or other owner of the copyright to affix notices to any copies or phonorecords that leave his control.

CORRECTING ERRORS AND OMISSIONS

Unlike the law that was in effect before 1978, sections 405 and 406 in the new Copyright Act provide procedures for correcting errors and omissions of the copyright notice on works published on or after January 1, 1978, and before March 1, 1989.

Generally, the omission or error does not automatically invalidate the copyright in a work if registration for the work has been made before, or is made within five years after the publication without notice. Also, to add the notice to all copies or phonorecords distributed to the public in the United States after the omission has been discovered, a reasonable effort is required.

Before 1978 (as a condition for copyright protection), the copyright law required all copies published with the authorization of the copyright owner to bear a proper notice. When a work was published under the copyright owner's authority before January 1, 1978, without a proper copyright notice, all copyright protection for that work was permanently lost in the United States. The new copyright law does not provide retroactive protection for those works.

COPYRIGHT REGISTRATION

LEARNING OBJECTIVE: *Recognize the procedures used to obtain a copyright and the rules that apply to the copyright owner.*

Generally, copyright registration is a legal formality intended to make a public record of the basic facts of a particular copyright. However, except in one specific situation, registration is not a condition of copyright protection. That exception is contained in sections 405 and 406 of the Copyright Act. The act provides that copyright registration may be required to preserve a copyright that would otherwise be invalidated because of the omission of the copyright notice from the published copies or phonorecords, omission of the name or date or a certain error in the year date.

Even though registration is not generally a requirement for protection, the copyright law provides several inducements or advantages to encourage copyright owners to register. Some of these advantages are as follows:

- Registration establishes a public record of the copyright claim.
- Before an infringement suit may be filed in court, registration is necessary for works of U.S. origin and for foreign works not originating in a Berne convention country.
- If made before or within five years of publication, registration will establish prima facie evidence in court of the validity of the copyright and of the facts stated in the certificate.
- If registration is made within three months after publication of the work or before an infringement of the work, statutory damages and attorney's fees will be available to the copyright owner in court actions. Otherwise, only an award of actual damages and profits is available to the copyright owner.

Registration may be made at any time within the life of the copyright. Unlike the law before 1978, when a work has been registered in unpublished form, another registration is not necessary when the work is published, although the copyright owner may register the published edition, if desired.

REGISTRATION PROCEDURES

If you choose to register your work, you should send the following three elements to the Copyright Office in the same envelope or package:

- A properly completed application form
- A fee of \$20 for each application

- A deposit of the work being registered

The deposit requirements will vary in particular situations. The general requirements are as follows:

- If the work is unpublished, one complete copy or phonorecord
- If the work was published in the United States on or after January 1, 1978, two complete copies or phonorecords of the best edition
- If the work was first published in the United States before January 1, 1978, two complete copies or phonorecords of the work as first published
- If the work was first published outside the United States, whenever published, one complete copy or phonorecord of the work as first published
- If the work is a contribution to a collective work and published after January 1, 1978, one complete copy or phonorecord of the best edition of the collective work

NOTE: The Copyright Office has the authority to adjust fees at five-year intervals, based on the charges in the Consumer Price Index. Contact the Copyright Office for the most current fees.

COPYRIGHT DURATION

A work that is created (fixed in tangible form for the first time) on or after January 1, 1978, is automatically protected from the moment of its creation and is ordinarily given a term enduring for the author's life — plus an additional 50 years after the author's death. In the case of "a joint work prepared by two or more authors who did not work for hire," the term lasts for 50 years after the last surviving author's death. For works made for hire and for anonymous and pseudonymous works (unless the author's identity is revealed in Copyright Office records), the duration of

copyright will be 75 years from publication or 100 years from creation, whichever is shorter.

Works that were created, but not published or registered for copyright before January 1, 1978, automatically have been brought under the statute and are now given federal copyright protection. The duration of copyright in these works generally is computed in the same way as for works created on or after January 1, 1978; the life-plus-50 or 75/100-year terms will apply to them as well. The law provides that in no case will the term of copyright for works in this category expire before December 31, 2002, and for works published on or before December 31, 2002, the term of copyright will not expire before December 31, 2027.

Under the law in effect before 1978, copyright was secured either on the date a work was published or on the date of registration if the work was registered in unpublished form. In either case, the copyright lasted for a first term of 28 years from the date it was secured. During the last (28th) year of the first term, the copyright was eligible for renewal. The current copyright law has extended the renewal term from 28 to 47 years for copyrights that were subsisting on January 1, 1978, making these works eligible for a total term of protection of 75 years.

Public Law 102-307, enacted on June 26, 1992, amended the Copyright Act of 1976 to automatically extend the term of copyrights secured between January 1, 1964, and December 31, 1977 to the further term of 47 years and increased the filing fee from \$12 to \$20. This fee increase applies to all renewal applications filed on or after June 29, 1992.

Under Public Law 102-307, renewal registration is optional. There is no need for the renewal filing to be made in order for the original 28-year copyright term to be extended to the full 75 years. However, some benefits accrue to make a renewal registration during the 28th year of the original term.

CHAPTER 11

BASIC PHOTOGRAPHY

How much does a Navy Journalist need to know about photography? Some JOs are expert photographers, while others resort to asking imaging facility personnel for photographic coverage of an event.

The fact remains that you will be tested on your knowledge of photography. At some point in your career, your supervisor will expect you to know the fundamentals of photography, to take news photographs with good composition, to crop and scale photos and use computer software programs to add photographs to your command publications.

If you can do these things already, you have a very important trait needed in the JO rating—**versatility**. However, if photography is not your strong suit, pay particular attention to the information in this chapter and the one that follows (“Basic Photojournalism,” chapter 12). Also, there is nothing like hands-on experience. Ask a senior JO for some on-the-job training or contact the nearest Navy imaging facility for instruction.

NOTE: Although with today’s technology it is possible to take digital photos and immediately view the final product and either save them to disk or transmit them electronically, you will still need to have a basic understanding of basic still camera fundamentals and shooting techniques. This chapter is intended to acquaint you with the basic concepts of photography. For more detailed information, consult the *Photography (Basic)* and *Photography (Advanced)* Nonresident Training Courses (NRTCs). Digital imaging is covered in chapter 8.

THE PHOTOGRAPHIC PROCESS

LEARNING OBJECTIVE: *Identify the basic process of photography.*

The basic equipment required for the photographic process, as shown in figure 11-1, includes the following components:

- A subject
- A light source
- A camera

- Photographic film
- A printing device
- Photographic paper

SUBJECT

The subject can be anything. If it can be seen, it can be photographed. Just as there must be light to form an image, there must be a subject from which to form the image.

FILM

Film, as defined in this chapter, is a light-sensitive emulsion of silver halides suspended in gelatin and coated on a transparent and chemically neutral base, usually cellulose or polymer plastic. The choice of film type is determined by the size and the sensitivity required by both the camera and the nature of the light to be used. During the exposure, silver halide crystals in the emulsion undergo an ionic change forming a latent image that can then be reduced to a visible and usable image through a complex chemical process.

CAMERA

The camera is essentially a light-tight box with an optical system at one end and an image support at the other. Additions to the basic camera have been made to improve focusing the image, viewing, controlling the amount and duration of light entering the box, film changing or rolling and range and exposure calculators. While these improvements are valuable, they are not absolutely essential to the photographic process. A picture can be made with a coffee can if it has a pinhole at one end and a support for film at the other.



Figure 11-1.—Still and digital/video cameras.

PRINTING DEVICES

Printing the negative, or making a positive, is done by contact or projection. The contact printer is usually a box with an internal light source and a piece of glass that allows light to pass through it and the negative to form a latent image on photographic paper held in contact with the negative.

The projection printer allows the image on the negative to be projected and the size of the print varied. This type of printer consists of a light source, a negative holder and a lens and focusing device mounted on a frame which can be raised and lowered, depending on the size of the projected image desired. The photographic paper is held in an easel.

PHOTOGRAPHIC PAPER

Photographic paper has essentially the same emulsion as film. The chemical process is the same as that for film but produces a positive image. Choice of paper types is dependent upon the type of printing, surface, size and finish desired.

THE 35MM CAMERA

LEARNING OBJECTIVE: *Identify the basic parts of a 35mm single-lens reflex camera.*

As a Navy Journalist, the standard type of camera you will use will be either a 35mm single-lens reflex (SLR) camera (fig. 11-2) or point-and-shoot rangefinder camera to serve as your tool to tell a story with photographs. Some public affairs offices or newspaper staffs will be equipped with digital cameras

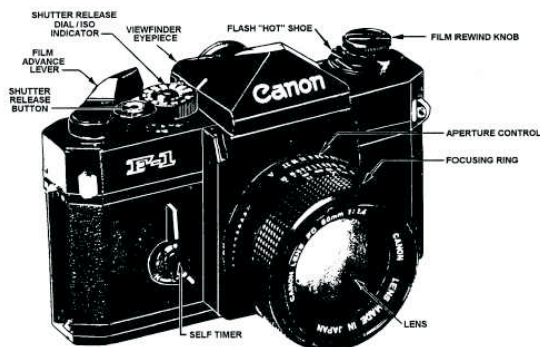


Figure 11-2.—The 35mm single-lens reflex (SLR) camera.

and support software. For this reason it is important for you to become as familiar as possible with your camera, know what the camera can do, then know what you want it to do.

The SLR camera gets its name from the use of a mirror to reflect an image formed by a single viewing and taking lens onto a viewing screen for focusing. A cutaway view of a 35mm SLR camera is shown in figure 11-3, and the basic principle of the SLR camera is shown in figure 11-4.

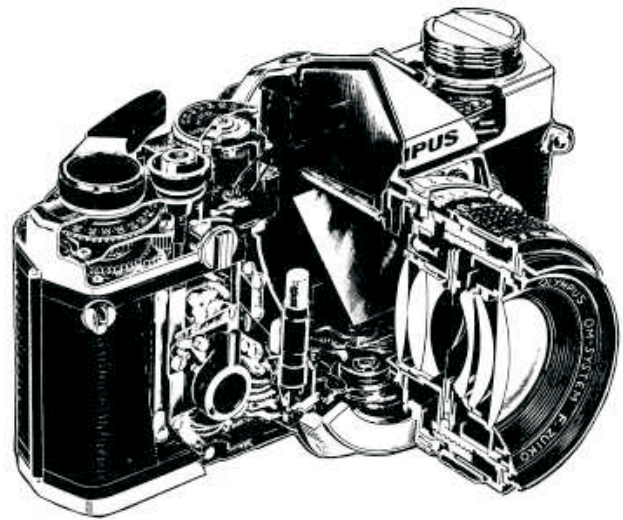


Figure 11-3.—A cutaway view of a 35mm SLR camera.

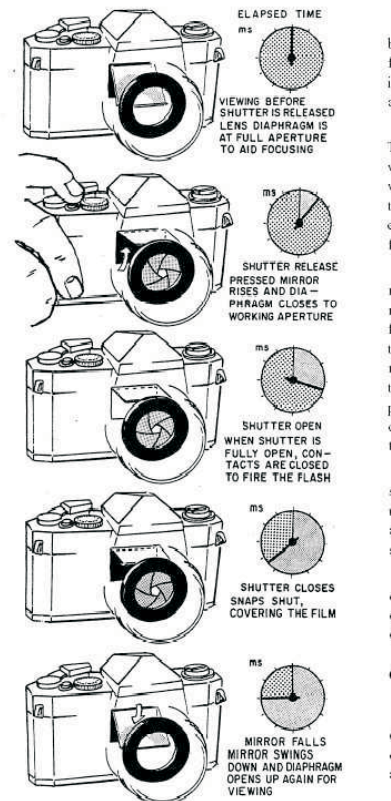


Figure 11-4.—The basic principle of a 35mm SLR camera.

The mirror, set at a 45-degree angle to the optical axis, reflects the image through a pentaprism that accomplishes vertical and lateral correction of the image. At the moment of exposure, viewing is disrupted for a split second, as the spring-operated mirror swings out of the lens-to-film optical path. The mirror then automatically returns to its original position for the next exposure.

Important advantages of the SLR design are the ease of viewing and focusing and the photographer's ability to judge the effect of the depth of field at a selected aperture. Depth of field will be covered later in this chapter.

Probably the most important advantage of the SLR camera is the ease with which it can be used. Its small size and compactness enables photographers to carry them strapped around their neck or over their shoulder. Little preparation is necessary for them to be put into operation. Another advantage is the rapid film-changing devices incorporated into the cameras. They can be used to great advantage when many photographs must be made in a short period of time. Design of the average SLR camera is such that minimum time is required for making the settings and winding the film.

Because most SLR cameras make as many as 36 exposures on a single roll of 35mm film, the photographer can carry enough film in one pocket to make many exposures. This type of camera is helpful for news and action photography where several pictures must be made in a short time. It is also indispensable for color slide work.

Modern SLR cameras accept a vast assortment of lenses, ranging from fisheye to extreme long-focus types. With their interchangeability of lenses, film backs and other accessories (such as electronic flash attachments), SLRs can more aptly be called camera "systems."

Lenses are usually attached to the camera by a bayonet flange. Focusing is done by turning the lens-focusing ring. A screw thread, which runs around the inside of the lens barrel, moves the lens closer or farther away from the film, as the focusing ring is turned.

Most SLR camera lenses have an iris diaphragm. This diaphragm is held at full aperture for focusing and viewing and is stopped down automatically to the preset working aperture at the instant of exposure. This means that while the image on the viewing screen

is bright and easy to see, only the correct amount of light reaches the film for exposure.

Your SLR camera will have a built-in exposure meter that usually reads "through the lens" (TTL). The meter may measure the light falling on the mirror, the focusing screen or in some models, even on the film at the instant of exposure. On an automatic camera, the meter even adjusts the aperture or shutter speed to give the correct exposure. On manual cameras the meter produces a display in the viewfinder to indicate the correct exposure. The user then sets the camera controls to get the correct exposure.

Almost all SLRs have focal-plane shutters. They simplify the construction of the camera and make the use of interchangeable lenses easier. The shutter, aperture and mirror all work together in a precise sequence, repeated each time a picture is taken.

The relatively small size, ease and speed of operation, reliability and the high quality of photographs of the SLR cameras have combined to make it a favorite of professional photographers and photojournalists.

CONTROLS AND INDICATORS

In the Navy, most photojournalists are issued a camera kit that consists of a Canon F-1 35mm SLR camera, a 50mm lens, a 35mm lens, a 135mm lens and a flash unit. This camera is shown in figure 11-2.

Some of the main controls and indicators of the 35mm SLR camera are covered in the following text.

Film Advance Lever

The film advance lever advances the film one frame at a time, cocks the shutter, prepares the aperture and mirror for exposure and advances the frame counter one number.

Shutter Release Button

The shutter release button opens the shutter and initiates the exposure.

Shutter Speed Dial

The shutter speed dial indicates optional shutter speeds and sets the length of time the shutter remains open during an exposure. Shutter speeds are indicated

in fractions of a second; for example, $60 = 1/60$ of a second (also expressed as $1/60''$). The higher the number on the dial, the faster the shutter speed and the shorter the exposure.

ISO Indicator

The ISO (International Standards Organization) indicator allows you to compensate for the particular “speed” of your film. For example, if you are shooting black-and-white film with an ISO of 400, you will set your ISO indicator to 400. The higher the ISO, the more light sensitive the film.

Aperture Control

The aperture control is a ring around the lens with a scale listing aperture numbers (2.8, 3.5, 4, 5.6, etc.). These numbers are also known as “f/stops.” The ring sets the f/stop on the lens to control the amount of light entering the lens.

Film Rewind Knob

The film rewind knob is used to rewind the film into the cassette (film canister), to tighten slack in loaded film and to open the back of the camera. You turn the knob in the direction of the arrow to rewind the film, and lift it to open the back of the camera.

LENSES AND APERTURES

As noted previously, most 35mm SLRs have interchangeable lenses. The “focal length” of a lens is the distance from the optical center of the lens to the focal plane (film plane) when the camera is focused upon an object at infinity. A 50mm focal-length lens is considered the “normal” lens because when you look through the viewfinder, objects appear at their approximate normal size. A smaller than normal focal length (such as 28mm) means a wider angle of view. A longer than normal focal length (such as 135mm) is a telephoto lens. Focal length affects film image size.

The f/stop (aperture) ring controls the amount of light passing through the iris diaphragm of the lens and striking the film. The higher the f/stop number, the smaller the amount of light allowed to enter the camera lens. This principle works in the same manner as the iris of the human eye (fig. 11-5).

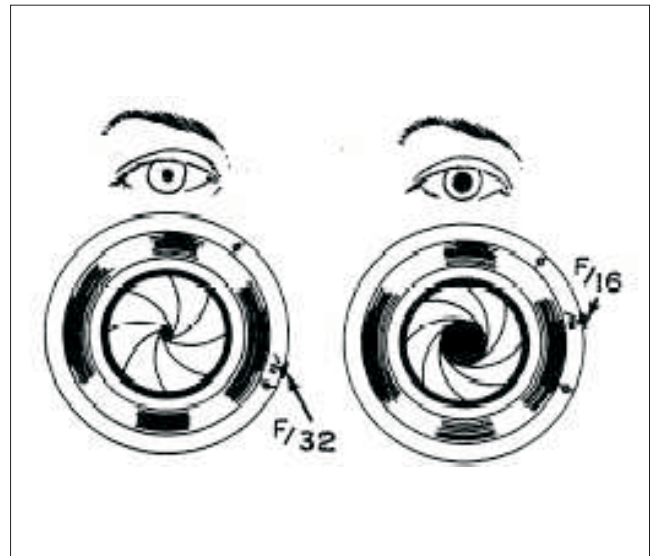


Figure 11-5.—Comparison of the iris diaphragm of a camera lens to the iris of the human eye.

OPERATING THE 35MM SLR CAMERA

LEARNING OBJECTIVE: *Determine the proper operating procedures for the 35mm SLR camera.*

In the fleet, most of the cameras you will be using today have automatic settings and are considered “point-and-shoot.” What this means is, the photographer only has to load the film correctly, turn the camera on, and capture the shot desired. This method works fine for every day photos that you may use to tell your story, but there are times when you will need to use an SLR camera that allows you to change the settings, f-stops and shutter speeds to get the shots you need. Capturing the action at a sporting event, for instance, would require you to shoot at a faster shutter speed than shooting a scene on a beach or a sunset at sea. While you do not need to know everything about SLR cameras to take good photos, you do need to know the basic principles of operation to fully understand the process. The components of a 35mm SLR camera are of little consequence if you do not know how to use them together. In this section, you will learn how to perform the following functions:

- Loading
- Holding the camera
- Focusing the camera
- Setting the film speed
- Activating the light meter

- Setting the shutter speed
- Setting the aperture control
- Shooting the picture
- Unloading the film

LOADING

You should load the camera in subdued light (not direct sunlight) and use the following method:

1. Place the film in the chamber, grasp the beginning of the film (called the leader) and feed it onto the sprockets of the take-up spool.
2. Move the film advance lever forward, depress the shutter release button and again advance the film one frame.
3. Close the back of the camera carefully and depress the shutter release button.
4. Advance the film another frame and **watch the rewind knob to make sure it moves.**

If the rewind knob does not move, either you loaded the film incorrectly or there is still some slack in the film cassette. The latter situation can be checked by gently rotating the rewinding knob clockwise without depressing the rewind button on the bottom of the camera (as is usually done when rewinding film).

HOLDING THE CAMERA

Although you may hold the camera in any manner that best suits you, give serious consideration to the method described in the following text. It will give you a steady platform for the camera that will help you reduce camera movement.

Grasp the camera on the right side with your right hand (fig. 11-6). Use the index finger of your right hand to depress the shutter release button and the thumb of your right hand to advance the film. Adjust the shutter speed control with the index finger and thumb of the right hand.

Use the index finger and thumb of your left hand to adjust the aperture and focus. For horizontal shots, place both of your elbows against your body for support. When you take vertical format shots, your left



Figure 11-6.—Holding the camera.

elbow should be placed against the body for support. Cradle telephoto lenses in your left hand.

FOCUSING THE CAMERA

A camera is focused by moving the lens closer or farther from the film (focal) plane. The two basic methods of focusing are scale focusing and SLR focusing. Both types of focusing are covered in the following text.

Scale Focusing

In scale focusing, you use a scale of distances to which the lens is set. This scale may be inscribed on the lens barrel or on the camera frame (fig. 11-7), depending on the camera design.

Scale focusing is used primarily with small aperture lenses that have sufficient depth of field to overcome small camera-to-subject distance estimate or measurement errors. To use the focusing scale, you must estimate in most cases, the camera-to-subject distance. This estimated distance is then set to the focus index mark on the lens or other focus index on the camera. The most accurate way to use focusing scales, of course, is to measure the camera-to-subject distance with a tape measure.



Figure 11-7.—Focusing scale on a camera lens.

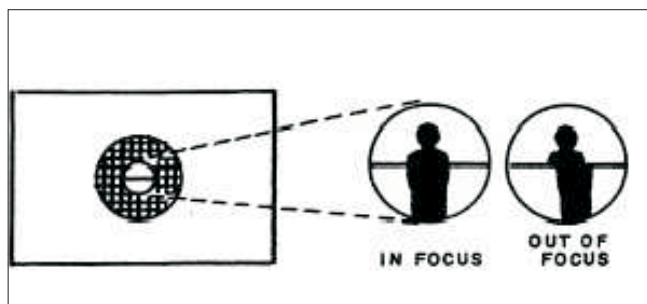


Figure 11-8.—Split image focusing in an SLR camera.

SLR Focusing

The SLR camera has a focusing and viewing system that shows you the image formed by the taking lens. It is designed so the distance between the focusing screen and lens is exactly the same as that between the lens and the film. Therefore, whatever appears in focus on the focusing screen also will be recorded in focus on the film.

Sometimes two small prisms or a split screen is included in the central area of an SLR camera-viewing screen. When the image is out of focus, it appears split in this area. Some screens have a central grid of minute prisms that produce a shimmering effect when the image is out of focus (fig. 11-8).

You focus an SLR camera by rotating the focusing ring on the lens until the image seen on the viewing screen is in sharp focus.

SETTING THE FILM SPEED

No matter how experienced you are, you should make sure the film speed indicator matches the ISO of the film you are using. The indicator is part of the shutter speed dial of most 35mm SLRs.

ACTIVATING THE LIGHT METER

The light meter on-off switch is located on the back of the Canon F-1 (refer to the instruction manual for other camera models). A light-sensitive photocell moves a meter needle inside the viewfinder. When the meter needle is in line with the aperture needle, the camera is set for a proper exposure. The light meter can be left on throughout your shooting assignment. An example of a light meter is shown in figure 11-9.

SETTING THE SHUTTER SPEED

The film manufacturer's instructions provide time-tested shutter speeds for varying light conditions, such as sunny, overcast and cloudy. However, on occasion, you may prefer to freeze action or blur motion. In these situations you must manipulate both the shutter speed and the aperture control ring. For instance, you may set your camera at $1/60''$ to illustrate the speed of a runner—his legs and arms are a blur of motion on the finished photograph.

Consequently, if you want to freeze the action, you set your camera at $1/250''$ or higher. Then the runner's legs, arms and victory expression are "frozen." For hand-held shots, choose a shutter speed no slower than the speed closest to the focal length of the lens. For example, you would select $1/60''$ for a 50mm lens and $1/250''$ for a 250mm lens.

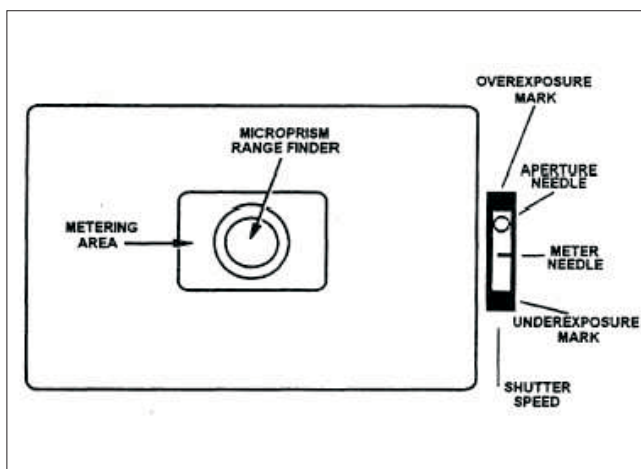


Figure 11-9.—Light meter.

SETTING THE APERTURE CONTROL

Adjust the f/stop on the aperture control ring to match the light meter requirement. The aperture control can be used to increase or decrease the depth of field, which will be explained in detail later in this chapter.

SHOOTING THE PICTURE

Much like pulling the trigger on a rifle, you should depress the shutter release button lightly until the camera clicks. Advance the film to the next frame and you are set for the next exposure.

UNLOADING THE FILM

One of the most common mistakes photographers make is failing to wind the 35mm film back into the cartridge **before opening the back of the camera**.

After you have exposed all frames, depress the rewind button (normally at the bottom of the camera) and slowly rewind the film. Rewinding too quickly, especially in cold weather, could crack the film or cause static electricity that will damage the film. When the film is completely rewound, you will no longer feel tension on the rewind knob.

Store the exposed film in a dry, dark container (such as a photo bag) or in its original canister until it is ready for developing. If your assignment requires you to shoot more than one roll of film, number the rolls directly on the canister using a china marker or laundry-marking pen.

INSPECTING AND MAINTAINING THE CAMERA

LEARNING OBJECTIVE: *Identify the correct method of inspecting and maintaining the 35mm single-lens reflex camera.*

The importance of caring for your camera cannot be overstated. The old saying, "Take care of your equipment, and it will take care of you," certainly holds true when it comes to photography. In the following text you will learn the basics of periodic camera inspection and maintenance, to include the lens, camera body and camera optics.

NOTE: You may be held liable for any damages while the camera is in your custody!

THE LENS

Remove the lens from the camera according to the manufacturer's instructions. Inspect the lens and check it for dirt, smudges, fingerprints and scratches. Remove dirt with a blower brush; eliminate smudges and fingerprints by gently wiping the glass with lens-cleaning tissue moistened with a few drops of lens-cleaning solution. Be careful not to oversaturate the tissue—one or two drops should be enough.

Minor scratches may not alter the performance of the lens, but you should bring them to the attention of your LPO or LCPO. However, deep scratches will probably affect the performance of your lens. In this instance, notify your supervisor and obtain a replacement lens. If you are not sure about the severity of a scratch, reattach the lens to the camera body, look through the viewfinder and focus on a subject. If any part of the field of view appears blurred or obscured, replace the lens.

Next, check the aperture control ring. The ring should click firmly into each position. Examine the focus ring. It should move smoothly, without interruption. Check the lens exterior for dents and other damage.

Finally, make sure the lens is mounted with an ultraviolet, haze or skylight filter to protect the front glass surface and its delicate antireflective coating.

THE CAMERA BODY

Inspect the camera body for dirt and defects. Use a blower brush to remove light dust and dirt; stubborn dirt can be removed with a silicon cloth or a soft chamois. **Do not use liquids to clean the camera body.** Liquid cleaners, including water, can damage the camera.

Check the back of the camera body and make sure it is light tight. While the back of the camera is open, conduct a shutter speed test to determine whether the camera has maintained its calibration. You do this by opening the shutter at the varying speeds from one second to 1/1000" (or faster). There should be noticeable differences at the slower speeds (1/1", 1/2", 1/8", 1/15", 1/30" and 1/60"). Inspect the back of the outer film carriage of the camera for nicks and warps. Examine the door hinge for looseness.

THE CAMERA OPTICS

Look through the viewfinder of the camera and focus on an object. If the field of view is blurred or

obscured and you know your lens is in good condition, you may have a dirty viewfinder.

If the mirror is dirty, clean it carefully, using a blower brush. **Do not use lens-cleaning tissue or fluid on the mirror.** If smudges remain on the mirror, consult your supervisor before taking the camera body to an authorized dealer or repair shop for professional cleaning.

OTHER IMPORTANT AREAS

Check the camera battery/internal light meter. A weak battery can affect your light meter reading, and ultimately, your photographs. Consult your instruction manual for further instructions.

Open the camera back and inspect the film chamber, rails, pressure plates, shutter curtain and take-up spool for dirt, film debris and other foreign matter. Use a blower brush to clean this area. Be careful not to press on the shutter curtain.

Inspect the neck strap for cracks and wear, especially at the pressure points (the clips that attach to the camera). In wet and humid climates, leather neck straps have a tendency to rot and should be checked daily.

Always store your camera in its case with the lens cap over the protective filter.

CAMERA ACCESSORIES

LEARNING OBJECTIVE: *Identify the most common 35mm single-lens reflex camera accessories.*

The difficulty of choosing camera accessories is knowing what is required and what is optional. There are many accessories photographers use in their day-to-day work, but we will only mention a few to give you an idea of what they are.

- Camera case
- Electronic flash
- Filters
- Lens and body caps
- Lens hoods

MOTOR DRIVES

Motor drives automatically wind-on or advance the film after each exposure. A motor drive will fire the shutter and advance the film for a preset number of exposures or work continuously. A motor drive simply

advances the film after each exposure is made manually.

CABLE RELEASE

A cable release is a device consisting of stiff wire encased in an outer flexible covering. It is used to trip a camera shutter without touching the camera itself. One end screws into the camera shutter release; the other end has a thumb-operated plunger.

CAMERA CASE

Several types of bags or cases are available for carrying your camera equipment. Some have a foam rubber lining that can be cut into the exact shapes of your equipment to protect and hold them firmly in place. Another type of case is called a gadget bag. It is usually made of leather or plastic and has either ridged or soft sides.

ELECTRONIC FLASH

The electronic flash is a high-voltage light source for illuminating the scene to be photographed. It produces a momentary flash of high-intensity light.

FILM HOLDERS

Film holders are light-tight containers for photographic film. They are used for positioning the film in the camera. Variations are called sheet film holders, film pack holders and roll film holders.

FILTERS

Filters are optical elements, such as glass, gelatin or plastic, dyed in a specific manner to absorb light of certain colors selectively, to emphasize or subdue certain objects and to improve the monochrome or natural reproduction of objects.

LENS AND BODY CAPS

Lens and body caps are protective covers that keep dust and moisture away from lenses and camera openings.

LENS HOODS

Lens hoods, or shades are used to keep strong sunlight from striking the front of the lens obliquely.

PHOTOGRAPHIC LIGHTING

LEARNING OBJECTIVE: *Identify the basic theories of photographic lighting in terms of outdoor lighting, existing light and electronic flash lighting.*

Light is the most important ingredient in photography. Light makes photography possible by reflecting off the subject, entering the camera and exposing the film.

Scientists tell us that light is produced in waves. In many respects the waves of light can be compared to sound waves. Sound waves vary in length and they register as different pitches; conversely, light waves register as different colors.

The intensity of light determines the brightness of the subject. The formula that determines this is the inverse-square law (fig. 11-10). It demonstrates that light decreases as the square of the distance increases. Becoming familiar with this law will help you use light more effectively during photographic assignments.

The light falling upon a subject from a source is called **incident light**. When incident light strikes a surface, it will change direction; this change is called reflection. If the surface is smooth, the reflected light is said to be specular; however, if the surface is rough, the reflected light is diffused. Most objects reflect back both types of light.

Reflection is an important characteristic of light. It is how our eyes can see objects and how film acquires a latent image.

In this section you learn how to take pictures using the following types of light:

- Outdoor
- Existing

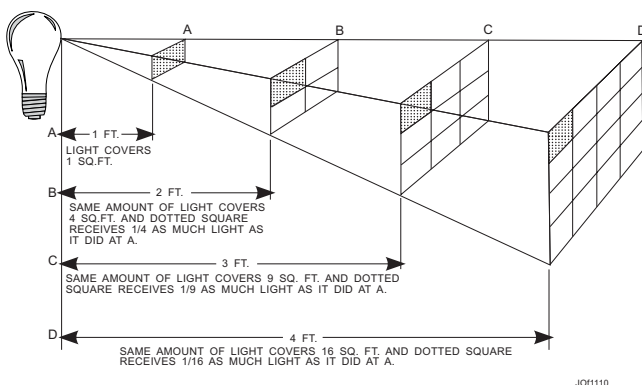


Figure 11-10.—Inverse-square law.

- Electronic flash

OUTDOOR LIGHTING

Daylight and sunlight are not constant sources—they change hourly with the weather, seasons and latitude. The changes in daylight can radically alter the apparent shapes, colors, tones and forms of a scene. The color of sunlight changes most rapidly at the extreme end of the day. Strong color changes also occur during storms, haze or mist and on blue wintry days. The direction of the light changes as the sun moves across the sky. The shape and direction of shadows are altered, and the different directions of sunlight greatly affect the appearance of each scene.

The quality of sunlight depends on its strength and direction. Strong, direct sunlight is “hard”—it produces dark, well-defined shadows and brilliant highlights, with strong modeling of form. Sunlight is hardest on clear summer days at noon. Strong sunlight makes strong colors more brilliant, but weak colors pale. Sunlight is diffused by haze, mist and pollution in the air. This diffused or reflected light is softer; it produces weak, soft shadows and dull highlights. Directionless, diffused sunlight is often called flat lighting. It produces fine detail but subdues or flattens form. In weak, directionless sunlight, colors are muted—but strong, directionless, flat sunlight provides vibrant, well-saturated colors.

Frontlighting

The old adage about keeping the sun at your back is a good place to continue our discussion of outdoor lighting. The type of lighting created when the sun is in back of the photographer is called frontlighting (fig. 11-11).

This over-the-shoulder lighting was probably the first photographic advice you ever received. It may seem to be a universal recipe for good photography, but it is not. The case against over-the-shoulder lighting is that it produces a flattened effect, doing nothing to bring out the detail or to provide an impression of depth. The eyes see in three dimensions and will compensate for unhelpful lighting. However, a photograph is two-dimensional. To give an impression of form, depth and texture to the subject, you should ideally have the light come from the side or at an angle.

Sidelighting

As you gain experience with various types of outdoor lighting, you will discover that interesting effects can be achieved by changing the angle of the light falling on your subject. As you turn your subject, change camera viewpoint or wait for the sun to move,

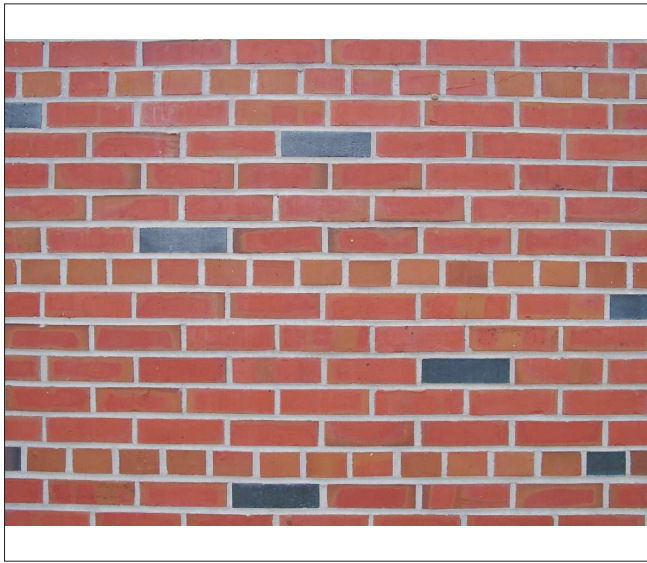


Figure 11-11.—Frontlighting.
(Photo by JOCS (AW) Jon Gagné)

the light falls more on one side, and more shadows are cast on the opposite side of the subject. For pictures where rendering texture is important, sidelighting is ideal.

Look at a brick wall, first in direct front sunlight and then in sidelighting. Direct front sunlight will show the pattern of the bricks and mortar in a flat, uninformative way. But sidelighting will create shadows in every little crevice (fig. 11-12). The effect increases as the light is more parallel with the wall until long shadows fall from the smallest irregularity in the brickwork. This can give an almost three-dimensional effect to a photograph.

Sidelighting is particularly important with black-and-white photography, which relies on gray tones, rather than color, to record the subject. Shadows caused by sidelighting reveal details that can create striking pictures from ordinary objects that otherwise hardly would not be worth photographing in black and white. Anything that has a noticeable texture —like the ripples of sand on a beach, for example —gains impact when lighted from the side. Landscapes, buildings and people all look better when lighted from the side.

This principle also applies to color photography. Color gives the viewer extra information about the subject that may make up for a lack of texture in frontlighting, but often the result is much better when lighted from the side.

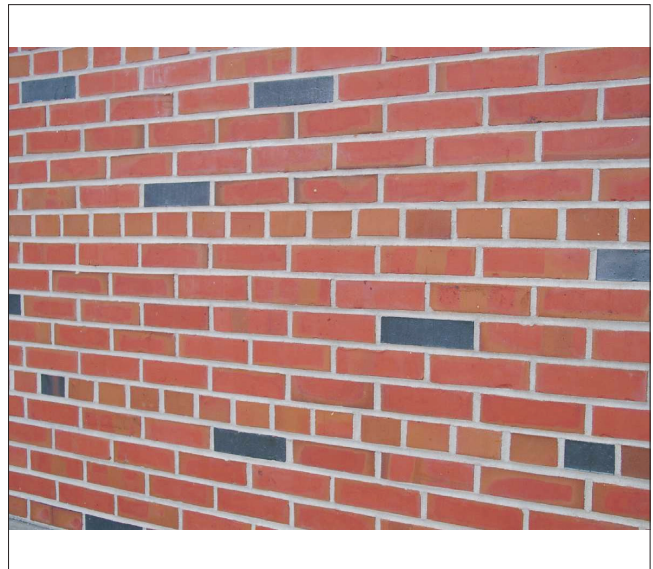


Figure 11-12.—Sidelighting.
(Photo JOCS (AW) Jon Gagné)

Backlighting

When the sun is in front of the photographer, coming directly at the camera, you have what is referred to as backlighting (fig. 11-13); that is, the **subject** is backlit. This type of lighting can be very effective for pictures of people outdoors in bright sunlight. In bright sunlight, when subjects are frontlighted, or even sidelighted, they may be uncomfortable and squint. Backlighting helps eliminate this problem. Backlighting may require the use of a reflector or fill-in flash to brighten the dark shadows and improve subject detail (fig. 11-14). Backlighting also is used to produce a silhouette effect.

When you use backlighting, avoid allowing sunrays to fall directly on the lens (except for special effects). Use a lens hood or some other means of shading the lens to prevent lens flare.

EXISTING LIGHT

Existing light photography, sometimes called available or natural light photography, is the making of pictures by the light that happens to be on the scene. This includes light from table, floor and ceiling lights, neon signs, windows, skylights, candles, fireplaces, automobile headlights and any other type of light that provides the natural lighting of a scene—except daylight outdoors. (Moonlight is considered existing light.) Existing light is that type of light found in homes, in offices, in the hangar bay, in the chapel, in



Figure 11-13.—Backlighting without a reflector.



Figure 11-14.—Backlighting using a reflector.

the club, in sports arenas and so on. Outdoor scenes at twilight or after dark are also existing light situations.

Photography by existing light produces pictures that look natural. Even the most skillfully lighted flash picture may look artificial when compared to a good existing light photograph. With existing light photography, the photographer has an opportunity to make dramatic, creative pictures. Existing light allows the photographer greater freedom of movement because he is not burdened with extra lighting equipment. Subject distance, when not using flash, has no effect on exposure, so you can easily photograph

distant subjects that could not otherwise be photographed using flash or some other means of auxiliary lighting. With existing light you can make pictures that you could not make with other types of lighting.

For example, flash may not be appropriate during a change of command ceremony or chapel service. Not only might the flash disturb the proceedings, but it may not carry far enough to adequately light the subject.

Fluorescent Lighting

Indoor scenes illuminated by fluorescent lights usually appear pleasing and natural in real life. However, color pictures of these same scenes will often have an overall color cast that makes them look very unnatural. Fluorescent light is deficient in red light and emits primarily blue and green light. Most color pictures made without a filter under fluorescent light also are deficient in red and have an overall greenish appearance. When it is used correctly, fluorescent light does have some advantages over other types of available light. A room illuminated by fluorescent lamps is usually brighter and more evenly lighted than a room illuminated by tungsten lamps. This higher level of light makes it easier to get enough exposure for your existing light photography and helps record detail that might have been lost in the shadow areas with other types of existing light.

When you are photographing people, fluorescent lighting often causes dark shadows under the eyes of the subject. This effect causes the eyes to appear dark and sunk in.

Nighttime, Outdoor Pictures

Outdoor night scenes usually include large areas of darkness broken by smaller areas of light from buildings, signs and streetlights. Pictures of outdoor scenes are quite easy to make because good results are obtainable over a wide range of exposures. The use of short exposures emphasizes well-lighted areas by preserving the highlight detail, while the shadow areas become dark due to underexposure. Long exposures help retain the detail of the dark areas, while highlight detail is lost as a result of overexposure.

Large, dark areas in night scenes will make it difficult for you to make accurate exposure meter readings from your camera position. You will get the best meter reading results when you take closeup readings of important scene areas.

At night you can make color outdoor pictures using either daylight or tungsten-type films. Pictures made on daylight film will have a warm, yellow-red appearance. Those made on tungsten film will have a colder more natural look. However, both films provide pleasing results so it is a matter of personal preference.

A good time for you to make outdoor night color pictures is just before it gets completely dark. At this time, some rich blue (or even orange) is in the sky. This deep color at dusk gives a dramatic background to your pictures. Neon signs, streetlights and building lights make bright subjects for your pictures.

ELECTRONIC FLASH LIGHTING

In situations in which there is little or no light available, a portable electronic flash unit is an invaluable piece of photographic equipment. With fast films and long exposures, you may be able to shoot existing light pictures—provided your subject remains still long enough. Although you can certainly get better lighting control with elaborate photographic lights, the simplicity and portability of electronic flash is unbeatable.

Electronic flash provides an excellent source of artificial light for exposing black-and-white and color daylight film. Light from an electronic flash unit (strobe) is characterized by its softness, short duration and color balance, approximating that of daylight.

When you measure the amount of light that actually reaches an object or scene, a numerical value is obtained that can be converted directly into a flash guide number. The numerical value is the light output rating of an electronic flash unit measured in beam candlepower-seconds (BCPS) or more correctly, effective candlepower-seconds (ECPS).

Every electronic flash unit is assigned a guide number as a measure of its light output or power. The higher the guide number, the greater the light output.

Correct exposure with electronic flash depends upon the following four factors:

- The power or light output of the flash unit
- The ISO speed of the film used
- The flash-to-subject distance
- The f/stop used

Shutter speed is not a factor since the time of exposure is governed solely by the duration of the flash.

Notice we always speak of **flash-to-subject distance**, never camera-to-subject distance. With all types of artificial illumination (the same as with sunlight), the only consideration is the amount of light reflected from the subject. The distance between the camera and the subject has no bearing on exposure. When the flash is used off the camera, the basic f/stop is still calculated with the flash-to-subject distance.

Automatic Electronic Flash Units

Most electronic flash units can be operated in an automatic exposure mode. An automatic flash unit eliminates the need to determine the correct f/stop for each flash-to-subject distance, providing the subject is within the flash distance range of the flash.

On the front of an automatic flash unit, a sensor reads the light reflected from the subject that is produced by the flash. When this sensor is satisfied as to the amount of light received, it automatically shuts off the flash. The closer the subject is to the lamp, the quicker the sensor shuts off the light.

Some automatic electronic flash units allow you to select two or more apertures to control depth of field. To determine an f/stop in the automatic mode, you can use the calculator dial located on the unit. When you match the indicator to an ISO film speed number on the dial (fig. 11-15), the f/stop to be used within a minimum and maximum distance is indicated. Once an f/stop is selected and set, it is a constant factor regardless of the flash-to-subject distance, providing it is within the flash distance range of the unit. This

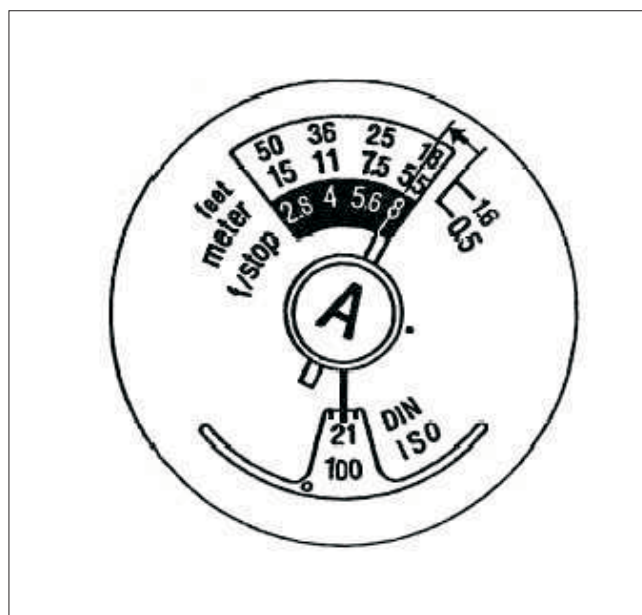


Figure 11-15.—Exposure scale on a flash unit (automatic mode).

feature allows a photographer to move closer to or further away from the subject without having to calculate an f/stop for each change of flash-to-subject distance.

When the flash unit is in the manual mode, the f/stop must be changed every time the flash-to-subject distance changes. A scale on the flash unit (fig. 11-16) indicates the proper f/stop to use for the various distances. To determine the flash-to-subject distance for on-camera flash, focus on the subject and read the distance directly from the focusing ring on the camera.

Single Flash

You will produce the majority of your indoor photographs with a single flash unit. Numerous reenlistments, frocking and promotion ceremonies are conducted indoors where the lighting conditions are unfavorable for available light photography. There are various methods in which a single flash can be used to produce high-quality professional photographs that distinguish you from the amateur snapshooter.

On-Camera Flash

A flash technique commonly used is that of the flash unit attached to the camera, in synchronization with the shutter, and aimed directly at a subject. An advantage of having your flash unit attached to the camera is it gives you the chance to capture the unexpected—the truly candid shot. When spontaneity sparks the action and quick camera handling is a must, the fewer pieces of equipment you have to worry about or handle, the better. Rather than two pieces of gear (the camera and the flash), you have only one—the camera with the flash attached to it. However, this technique usually produces objectionable shadows behind the subject.

To help reduce the harshness of shadows, place some diffusion material, such as a white handkerchief, cheesecloth or frosted cellulose acetate, in front of the flash. Keep in mind that diffusion reduces the intensity of the light. Therefore, the exposure must be increased accordingly if you use the manual mode on the flash unit.

Off-Camera Flash

You will make some of your best flash pictures with the flash unit off the camera. When you hold the flash off the camera and above the lens, it will tend to throw the shadows down and behind the subject. This

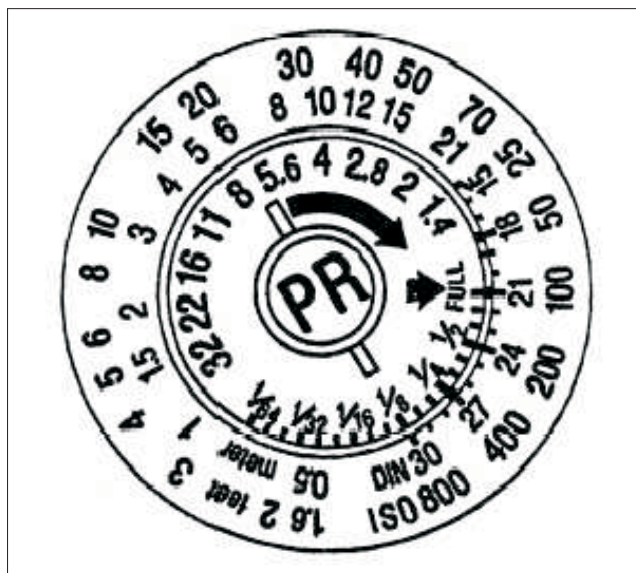


Figure 11-16.—Exposure scale on a flash unit (manual mode).

is a good way to minimize distracting background shadows that occur when a subject is standing close to a wall. A flash held high above the lens, either left or right, makes the viewer less conscious of the flash illumination.

We are accustomed to seeing things lighted from above, and by placing the flash above the subject, it closely resembles the lighting of the sun or ceiling lights.

Light that is far enough off the camera to illuminate the subject from an angle produces modeling or roundness. This type of light creates the illusion of a third dimension—depth—and is more pleasing to the viewer than the two-dimensional flat effect you get with direct frontlighting. Angled lighting also is used to bring out the texture of a subject.

Bounce Flash

One of the best methods to illuminate a subject or scene with a single flash unit is to use **bounce flash**. There will be times when you will want a very soft light in order to lessen the tonal range between highlights and shadows and to soften harsh background shadows. You can achieve this soft lighting by bouncing, or reflecting the flash off a light-colored surface. By doing so you are changing the narrow spot of light from a flash unit into a wide, diffused area of light.

Most bounce flash pictures are made with the light directed at the ceiling, either above the photographer or above the subject, or somewhere in between. You can

produce a silhouette effect by bouncing the flash off the ceiling behind the subject. To accomplish this, aim your flash unit so most of the light bounced off the ceiling falls on the background behind the subject and calculate the exposure for the background.

For the flattest bounce light, try bouncing the light off a wall behind the camera. With this lighting you will have practically no shadows. Here you will have to calculate your exposure based on the flash-to-wall-to-subject distance.

“RED-EYE”

An effect that may appear with direct flash is “red-eye.” Red-eye occurs in pictures of people and animals when the flash is used close to the optical axis of the lens and the subject is looking at the camera. It is caused by light reflecting from the blood vessels at the back of the eye. The darker the room is, the stronger the effect will be because the pupils of the eyes will be dilated. Red-eye can be avoided easily by your moving the flash away from the lens optical axis. Also, you can minimize the effects of red-eye by turning up the room lights.

PHOTOGRAPHIC FILTERS

LEARNING OBJECTIVE: *Identify the purpose of photographic filters, the various filter designations, and the filters used in black-and-white and color photography.*

Filters, used mostly for feature photos, are used in all the various steps of the photographic process. Though often neglected in the shooting stage, the use of filters can tremendously enhance the final product in both black-and-white and color photography.

PURPOSE

The purpose of photographic filters is to alter the characteristics of light that reaches the light-sensitive emulsion. As light is transmitted through a filter, at least one of the following alterations occurs:

- The color of light is modified.
- The amount of light is reduced.
- The vibration direction of the light rays is limited.

To use photographic filters properly, you must understand the nature of transmitted light.

White light is composed of three primary colors: red, green and blue. A filter of a primary color will transmit its own color and absorb the other two; for example, a red filter looks red because it transmits red and absorbs green and blue, as shown in figure 11-17.

Secondary colors are mixtures of primary colors. Yellow, for example, is a combination of red and green. Because a filter passes its own color and absorbs others, a yellow filter passes red and green and absorbs blue (fig. 11-18).

In selecting a filter in black-and-white photography, you can use the color star in figure 11-19 to determine the effect of the filter on the gray scale of the negative and the final print. On the final print, the result will be that a filter will lighten its own color and the colors adjacent to it and darken its complement and the colors adjacent to its complement; for example, a green filter will lighten green (its own color) and cyan and yellow (adjacent colors). It will darken magenta (its complement) and blue and red (adjacent colors of the complement).

FILTER DESIGNATIONS

Some filters are designated by a descriptive name, such as neutral density, haze, polarizing and skylight. Color compensating and color print filters have yet another designation system.

The Kodak Wratten™ filter line uses a numbering system to designate its black-and-white filters, as shown in table 11-1. Also note in table 11-1 that filters in the first column lighten colors next to them, and opposite filters darken colors on the print. For example, a yellow-green No. 11 filter lightens subjects

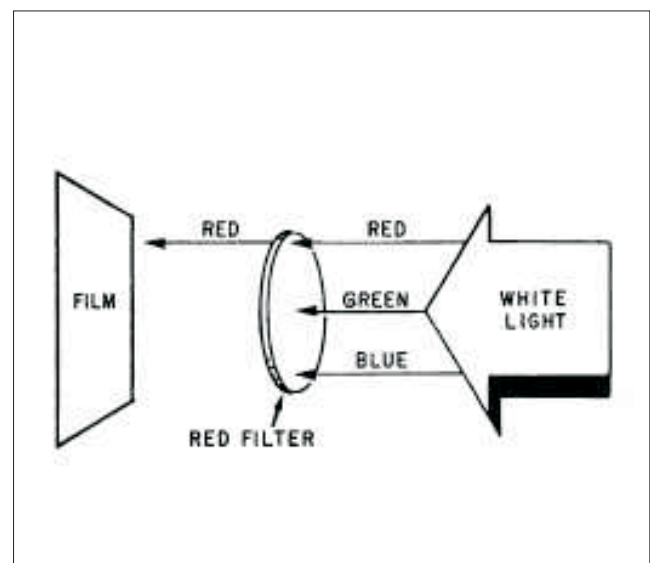


Figure 11-17.—Characteristics of a red photographic filter.

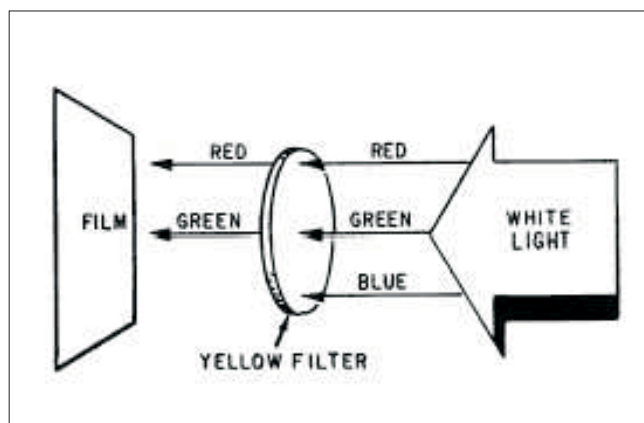


Figure 11-18.—Characteristics of a yellow photographic filter.

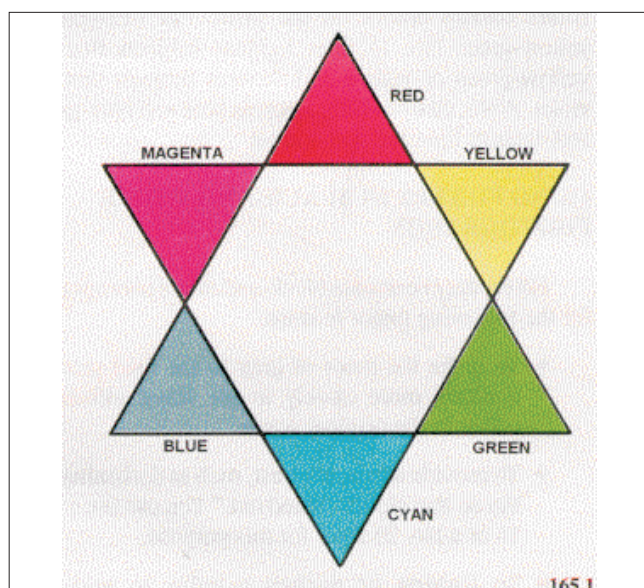


Figure 11-19.—Color star.

that are yellow-green or yellow and darkens subjects that are violet. A No. 44 cyan filter lightens blue and blue-green and darkens light red and orange.

USING FILTERS IN BLACK-AND-WHITE PHOTOGRAPHY

Filters may be used in black-and-white photography for the following major reasons:

- To make the tones of gray in the final product conform more closely to the visual effects of colors in the original scene.
- To provide scenic contrast, such as darkening the sky so that clouds “stand out.” You can use a No. 15 or a No. 25 filter for this purpose.
- To lighten or darken a color to make it “disappear” or stand out in sharp contrast. An example of this could be photographing an old document that is written in blue ink and has yellowed with age. Here, a deep yellow filter would darken the blue writing, and, at the same time, lighten and possibly remove the yellow stain.

Whenever you use a filter, you must change the exposure. The amount of change depends on the sensitivity of the film to the colors absorbed by the filter as well as the quantity of that color in the type of light used. The effects of the filter in terms of exposure correction are given on the film data sheet as a filter factor.

The filter factor may be applied to the exposure by opening the diaphragm one f/stop each time the filter factor is doubled. Thus a factor of two requires that the diaphragm be opened one f/stop larger than is needed for correct exposure without a filter; a factor of four calls for two f/stops, a factor of eight for three f/stops, and so on.

Table 11-1. —Kodak Wratten™ Filters

Filter Color and Number		Filter Color and Number	
Deep Red	29	Bluish Green	65
Red	25	Bluish Green	65
Light Red	23A	Cyan	44
Orange	21	Cyan	44
Deep Yellow	15	Blue	47
Yellow	8	Deep Blue	47B
Yellow-Green	11	Violet	34A
Yellow-Green	13	Violet	34A
Green	58	Magenta	33
Green	61	Magenta	33

Kodak Wratten™ is a trademark of the Eastman Kodak Company

An easy formula for determining exposure correction when you are using a filter is to divide the film speed by the filter factor and use the result as a corrected film speed on your exposure meter. As an example, when you use a black-and-white film with an ISO of 400 and a No. 11 filter (filter factor four), divide four into 400 and use the result, 100, as the film speed on the exposure meter. When using this method, make sure you return the meter dial to the correct film speed after using the filter.

FILTERS FOR COLOR PHOTOGRAPHY

Problems associated with color materials are quite different from those encountered with black-and-white materials. In color photography, the main problem is achieving correct color balance. The principal factor involved is the color temperature of the light source being used to illuminate the subject. This provides a natural appearance to the final product. Filters for color photography are classified as light balancing, conversion and color compensating.

Light Balancing Filters

Light balancing filters come in two series (not to be confused with a series that indicates physical size): the series 81 (yellowish filters) are used to lower the color temperature of a light source, and the series 82 (bluish filters) are used to raise the color temperature of light from a light source. Both series are used when a tungsten light source is used with color film.

Conversion Filters

Conversion filters are used in color photography when a **significant** adjustment of an exposing light is required to convert the color quality of the exposing light to the color temperature for which a film is balanced.

Conversion filters generally come in two series. The 80 series of filters are blue in color and convert tungsten light to color qualities acceptable for use with daylight film. The 85 series of filters are amber in color and convert daylight to color qualities acceptable for use with tungsten film.

The correct filter to use for a given situation with a given film can be determined by reading filter and film data sheets. If you are in doubt, seek help from your shop or base imaging facility.

Color Compensating Filters

Color compensating (CC) filters are used to adjust the overall color balance obtained from color film, particularly slide film. Without the use of color compensating filters, improper color cast can result.

For cameras, CC filters are normally used to color balance the light from sources, such as fluorescent, tungsten, and mercury-vapor lights, and the “bounce” light reflected from colored surfaces. They are also used to balance lighting effects under unusual circumstances (such as underwater lighting). These filters can be used to compensate for a known color deficiency of an unexposed color film. They also can be sandwiched (layered) when mounting a color transparency to compensate for an off-color hue.

SPECIAL-PURPOSE FILTERS

Some of the special-purpose filters you will work with include the following:

- Neutral density
- Haze
- Polarizing
- Skylight

Neutral Density Filters

Neutral density (ND) filters reduce the amount of light passing through a camera lens without changing the reproduction of colors in the scene. These filters are nonselective in their absorption of colors of light and therefore uniformly reduce the various colors of light in the spectrum. Thus white light and colored light are transmitted through a ND filter with only the **intensity** of the light being affected. These filters can be used with both black-and-white and color film.

ND filters are gray in appearance. These filters may be needed for pictures of a brilliant subject in bright sunlight. When you have set the fastest shutter speed and the smallest f/stop and still cannot take the picture without overexposing the film, you can use a ND filter to further reduce the exposure.

Haze Filters

Suspended in the earth’s atmosphere are minute particles of vapor and dust that cause a veil-like appearance called haze. This haze is most apparent in distant scenes. Haze is the result of sunlight being scattered by minute particles of matter that are present

in the air. The amount of haze can vary due to atmospheric conditions. Haze should not be confused with mist, fog, smog, smoke or clouds. These conditions also can produce a veil-like appearance but filters have no effect.

When sunlight is scattered, green and red light also are scattered by the ever-present haze, but not nearly as much as ultraviolet radiation, violet and blue light.

Penetration of the haze is possible when filters are used to absorb scattered sunlight. A haze filter is any filter that absorbs atmospherically scattered sunlight. This includes contrast and correction filters. When contrast and correction filters are used for haze penetration, they may be considered special-purpose filters. Although contrast filters can be used for cutting haze, these filters affect the gray tone rendering of colored objects. The contrast and correction filters that absorb the shorter wavelengths are the most effective. The recommended contrast and correction filter colors, in the order of greatest to least effective, for haze penetration are as follows:

- Red
- Orange
- Yellow
- Green

The use of an infrared sensitive black-and-white film with an infrared filter provides the greatest haze penetration of all.

Polarizing Filters

Polarizing filters look like gray neutral density filters. However, their effect becomes apparent when you look at the blue sky through a polarizing filter while rotating it. As you rotate the filter, the sky appears to get darker, then lighter.

Polarizing filters are used in black-and-white and color photography for the following reasons:

- To reduce or eliminate unwanted reflections (glare) from nonmetallic surfaces, such as glass and water
- To effect exposure control (similar to ND filters)
- To reduce the effects of haze
- To darken the blue-sky image in both black-and-white and color photography

- To increase color saturation in a color photograph without altering the hues of image colors

There are a number of different polarizing filters. However, there are only two main types: one type fits over the camera lens, and the other is designed to be used over a light source. Since they do not affect color, polarizing filters and screens may be used for both black-and-white and color photography.

Skylight Filter

A skylight filter adds warmth to a scene recorded on color transparency film by absorbing ultraviolet radiation. It does this by reducing the bluish cast prevalent in distant scenes and in scenes photographed on heavily overcast days or in open shade. A skylight filter is light pink in color.

EXPOSURE CALCULATION

LEARNING OBJECTIVE: *Identify the components used to calculate a photographic exposure.*

When you click the shutter, a series of events occur inside the camera. The shutter opens and closes, and light passes through the lens of the camera onto the sensitized emulsion (film), forming a latent image. The emulsion will eventually yield a record of what the camera saw at the moment of exposure. This series of events will yield a satisfactory photograph, in a technical sense, only if the exposure was correct.

You must compute exposure to make sure that the amount of light reaching the sensitive emulsion is sufficient to record the image. Exposure depends on the sensitivity of the photographic emulsion to light and on the brightness reflected by the original subject. Because you usually desire to record the whole range of tones between the brightest and darkest parts of the original scene, you will have to adjust your exposure accordingly.

The same exposure can be given to a certain subject by using various combinations of lens openings and exposure times — a wide opening and short time of exposure may allow the same total amount of light to reach the photographic emulsion as a small opening and a long exposure time. At the moment, your consideration of the other factors involved in exposure, such as image movement, depth of field and the use of filters, is unimportant. After you

have decided upon the correct total exposure necessary for a given subject at a given time, you can modify the lens opening and shutter speeds later as you desire for specific results.

Incorrect exposures will ruin more of your photographs than any other technical error, yet accurate exposure is relatively simple. By reading and using the exposure guides contained in the film data accompanying your film, you can expect good results most of the time. However, accurate exposures using daylight or tungsten light sources can only be obtained by the correct use of an exposure meter.

An important factor for you to remember is that no light meter, camera, film or manufacturer can guarantee the correct exposures that good photography demands. The only guarantees are your awareness and practice of the exposure theory and practical meter techniques. Good exposure techniques are efficient and simple. Your having the knowledge of exposure techniques frees you from the stumbling block of exposure determination so you can concentrate on taking pictures, and it simplifies the subsequent developing and printing process.

THEORY

The term *exposure*, while having different meanings at different times, is most often used by photographers to indicate a certain combination of shutter speed and lens aperture. In this case, the shutter speed denotes the length of time the shutter is “open,” allowing light to pass through the lens to strike the film.

As stated earlier, various combinations of lens aperture and shutter speed can yield the same exposure. The correct determination of camera exposure is the object of all exposure tables, charts, calculators and meters.

In any given photographic setting a variety of light will be reflected, since the brightness of various objects will reflect varying densities of light. Therefore, the exposure must be adjusted to produce the correct range of densities.

The result of exposure and development of film is very similar in many ways to that of rain falling on a light-colored concrete sidewalk. When the rain begins, only a few drops fall. The cement is darkened at only a few spots. As the rain continues, the cement becomes darker and darker, until it is uniformly wet and dark. Continued rain will then cease to cause any more changes in the color of the cement sidewalk.

You have experienced differences in the intensity of rain showers. At high intensities, much water comes down in a unit period of time, such as one minute. At low intensities, the amount of water is much smaller. As a result, you could get the same total amount of water within varying periods of time, according to the intensity of the rain. The total amount of rain recorded is equal to its intensity multiplied by the time during which it fell. The effects with light are very similar. Exposure is the amount of light falling on a unit area of the film or on a unit area of photographic paper. The intensity is the amount of light falling on this unit area during the exposure time. Thus the equation for exposure is as follows:

$$\text{Exposure} = \text{Intensity} \times \text{Time} (E = I \times T)$$

Another similarity between light and rain on a sidewalk is in the blackening effect. With light the blackening (during development) increases with the exposure received by the sensitive film emulsion. The photographic lens and shutter assembly should be regarded as a device that controls the camera exposure received by the light-sensitive film emulsion inside the camera.

The aperture of the lens diaphragm controls the intensity of the light, and the shutter controls the time of exposure. Since a photographic reproduction of the original scene contains a range of tones of different brightness, a corresponding range of photographic exposure is given to the sensitized emulsion.

FILM LATITUDE

A negative is said to be correctly exposed when it gives a satisfactory rendition of detail in both the deepest shadows and brightest highlights of the scene or subject. Fortunately, in many cases, there is more than a single exposure that will produce this result — there is a wide range of possible exposures within which satisfactory tone separation is possible. The “minimum” satisfactory exposure is one in which good tone separation is just attained in the deepest shadow areas. The “maximum” satisfactory exposure is one in which detail is just retained in the brightest highlight. Any additional exposure will cause this highlight detail to become flattened out or “blocked up.”

The range between these two exposures is known as latitude. This latitude may be narrow or wide, depending on the subject matter, lighting contrast, type of film and degree of development of the negative. In general, the black-and-white films you will be using have a greater margin for error than color films.

Ignoring the influence of development for a moment, a softly lighted scene composed of objects that are, themselves, fairly uniform in tone will allow a wide range of possible exposures that will produce a satisfactory rendition on the negative. This is caused by the narrow range of tonal values from highlight to shadows in the subject. On the other hand, a brilliantly lighted scene composed of a variety of tones, from jet black to snow white, may take up the entire usable range of the negative scale. Therefore, the exposure required for the proper rendition of the entire range of tonal values in this scene may be quite critical.

In addition there are many scenes, such as interiors with sunlight coming through a window, that have a range of brightness so wide that no single exposure can produce both highlight and shadow detail in a black-and-white negative. When you increase exposure and reduce the amount of development, almost any ordinary extreme of brightness range can be accommodated on black-and-white film.

FILM SPEED

The sensitivity of black-and-white and color film for still-camera use is also called the film speed, the ISO speed or simply the ISO. Earlier in this chapter, we pointed out that “ISO” is an acronym for International Standards Organization, a federation of all national standard bodies of the world, which has approved a uniform set of film-speed standards. These standards call for a universal expression of both arithmetic and logarithmic values with the ISO designation.

Until early 1983 the emulsion speeds of still-camera film were expressed in ASA values (which are arithmetic) or in DIN values (which are logarithmic). ASA values were determined according to standards published by the American National Standards Institute, formerly American Standards Association from which the designation ASA came. The DIN values reflected the German standards established by the Deutsche Industrie Norm.

Film speed is determined by the manufacturer according to the ISO standards. It will generally look like this:

ISO 100/21°

The number immediately following “ISO” is the ASA equivalent. It indicates that the speeds progress arithmetically, and any film marked ISO 100 has the same sensitivity as any other film marked ISO 100 — it is twice as fast as film marked ISO 50 and is half as fast

as film marked ISO 200. The number with the degree symbol (°) is the DIN equivalent.

The arithmetic speed number is intended for exposure meters or cameras marked for ISO or ASA speeds or exposure indexes. The logarithmic speed is intended for exposure meters or cameras marked for ISO or DIN settings.

FILM TYPES

Photographic films (and papers) are composed of two basic parts: the emulsion and the base, or support. The emulsion is the light-sensitive portion of a film or paper that records the image. The emulsion contains the silver halides and any special sensitizing dyes suspended in a binder of gelatin. The gelatin holds the silver halides evenly dispersed and prevents action by a developer until the silver halides have been made developable either by exposure to light or chemical action. The gelatin also acts as a sensitizer for the silver salts.

In photographic films and papers, the main purpose of the base is to support or hold the emulsion in place. Depending on how the recorded image is to be used, the base or support may be transparent or opaque. A transparent base is used for transparencies viewed by transmitted light and for negatives printed with transmitted light. An opaque base is used for prints that are viewed by reflected light.

The latest state-of-the-art in light-sensitive materials used in photography is the use of the electronic medium. Still video disks do not contain an emulsion or a base. When video mediums are used, light is converted to electrical impulses, and these impulses are stored magnetically on a tape or disk. Since it is the camera itself that converts the light to electrical impulses, the recording medium and all stages of the photographic process can be carried out in normal room light.

Black-and-White Film

The characteristics and use of black-and-white film depends largely on the actual construction of the emulsion. These characteristics include the following: the degree of sensitivity to light, response to various colors of light (color or spectral sensitivity), contrast, exposure latitude, emulsion latitude and emulsion definition.

There are many types of black-and-white films available. Each differs from others in one or more

characteristics. You should become acquainted with the characteristics of films. This knowledge is helpful in selecting the film most suitable for each photographic assignment.

Color Negative Film

A color negative film records a scene in image densities opposite to the brightness of objects in the scene, the same as a black-and-white negative film. Color films can be recognized because they contain the suffix “color,” such as Vericolor, Kodacolor and Fujicolor. These color films are used when a print is the final product. Most color negatives (except for color film used for aerial photography) has an orange mask incorporated in it. This orange mask increases the color separation, which reproduces colors more accurately in the final print.

During development, colors that are complementary to the color in the original scene are formed in the emulsion. For example, a red object in the scene is recorded as cyan in the negative. A combination of yellow, magenta and cyan record all the other colors that we see in the scene. Color dyes in the emulsion layers control the colors of light passing through the color negative.

To produce color prints or color transparencies, you can print color negative film images on color positive materials such as color paper and color print film. Color negatives also can be printed on a special panchromatic black-and-white paper to produce black-and-white prints.

Amateur and Professional Color Films

Much of the color film used in the Navy is manufactured by the Eastman Kodak Company. Kodak markets color films for both professional and amateur photographers. Color films intended for use primarily by professionals are identified by the word professional in the name — for example, Kodak Vericolor III Professional Film, Type S (VPS).

Both professional and amateur films have similar color quality, sharpness and granularity characteristics. They also have emulsions made up of many different chemicals that tend to change slowly with time. From the day they are made, all color films begin to change, and as the films age, their color balance changes.

Amateur films are manufactured to age and reach a peak color balance much later than professional films.

The manufacturer allows for the time amateur film will be in storage, on the store shelf, and in the camera before it is developed. The ISO speed assigned is adequate for calculating exposure for normal picture-taking situations.

Professional films are manufactured so they are very near their optimum color balance at the time they are shipped from the factory. These films should be kept refrigerated or frozen until shortly before use. Refrigeration keeps the film near the optimum point until used and provides the photographer with confidence in consistent results. Precise film speeds are provided for professional films. The film is intended for prompt processing to prevent any significant shift in color balance after exposure.

MEASURING EXPOSURE

The quantity of light can be measured in several ways. The most accurate method is the use of exposure meters. Photographic exposure meters are designed to be sensitive to light in the same manner as panchromatic film. Therefore, an exposure meter reading can be assumed to be valid under any visible lighting condition. Several types of hand-held meters are available. Some measure incident light; some measure reflected light. Another line of light meters measure light only within the sensitivity range of the human eye.

However, for news photography and most other requirements of a Navy Journalist, the built-in light meter described earlier in this chapter should more than satisfy your needs. This battery-powered meter, which measures reflected light, works automatically (unless you use the manual setting) to give you the correct exposure. When used manually, the built-in meter functions the same as a comparable hand-held meter and allows you to make whatever adjustments you prefer to achieve stylized or creative photographs. Except in cases involving special motion picture film lighting and portrait studio work, the hand-held exposure meter has virtually been replaced by the built-in camera meter.

Before using any exposure meter, read the instruction book that comes with it to make sure that you use it correctly. The readings from an exposure meter, and the accuracy of the meter itself, are wholly dependent on the method used.

CAMERA SETTINGS

When the photographer knows the sensitivity of the film and the amount of light available, the user determines the settings on the camera that will give the film a correct exposure. The settings are the f/stops and the shutter speed. Together, they control the total amount of light allowed through the camera to form the latent image on the film.

F/stops can range from f/1.4 (most amount of light) to f/22 (least amount of light). The f/stop system (factorial system) is always read as a whole number, not as a fraction or ratio.

Full stops in the English system of f/stops are as follows: 1.0, 1.4, 2.0, 2.8, 4.0, 5.6, 8, 11, 16, 22, 32, 45, 64, 90 and so on. Notice that the number doubles for each two-stop decrease in size. Slight optical corrections are made for f/11 and f/45. This may seem confusing at first, but knowledge of the f/stop system is necessary to compute optical formulas used by advanced photographers. It is necessary to know that each marked f/stop on a lens, except its widest aperture, is usually a full stop — that is, it admits one-half or twice the amount of light as the adjacent stop, and the larger the number, the smaller the aperture. At first, it is perhaps easier to think of the f/stops in terms of fractions; 1/8 is larger than 1/11 which is, in turn, larger than 1/16.

Lens apertures can be set between marked f/stops. You could match information on the exposure calculation dial of an exposure meter. For example, if the light meter suggests an exposure of 1/125" at f/9.5, you could set the camera at 1/125" at f/8, allowing the film latitude to cover the difference, or at 1/125" with the lens aperture midway between f/8 and f/11, which would be more accurate (fig. 11-20).

Shutter speeds control the duration of time that light is allowed to pass through the lens aperture to the film. Shutter speeds are usually marked on the camera as the reciprocal of the fraction of a second that the shutter remains "open" (one is 1/1 or one second, two is 1/2 or one-half second, four is 1/4 or one-quarter second and so on).

Standard shutter speeds are 1", 1/2", 1/4", 1/8", 1/15", 1/30", 1/60", 1/125", 1/250", 1/500", 1/1000" and 1/2000".

f/Stop-Shutter Speed Combinations

With today's cameras offering you the opportunity to use automatic settings, you could just concern

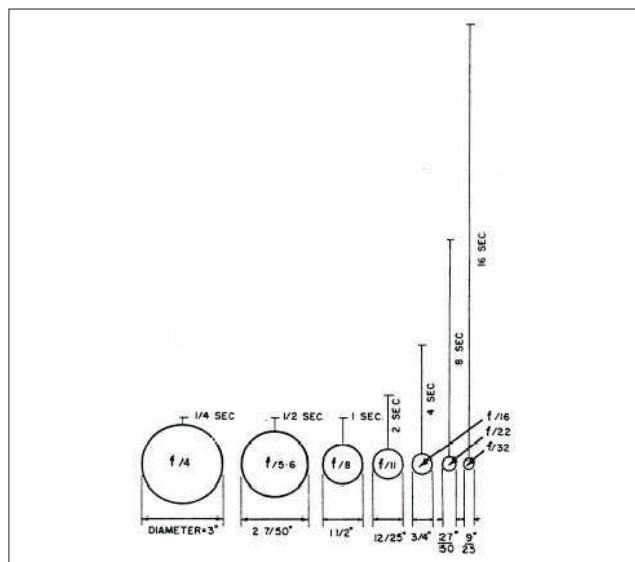


Figure 11-20.—Comparison between aperture, f/stop and relative exposure.

yourself with the f/stops of the camera and let the automatic shutter speed controls of the camera do the rest. However, should you choose to work with your camera in manual mode, you must understand the relationship between the f/stop and shutter speed.

Shutter speeds are indicated so that each marked shutter speed admits one-half or two times the adjacent marked speed. Since both the lens aperture and shutter speed represent "full stop" changes in exposure, either can be moved as long as the other is moved a similar number of stops to compensate. A basic exposure of 1/125" at f/16 can be changed to 1/500" (two stops less light transmitted) at f/8 (two stops more light transmitted), and the result will be the same total amount of light transmitted to the film.

Shutter speeds cannot be set between marked "stops." If an exposure is calculated to be 1/40" at f/8, using the closest shutter speed available on your camera, 1/30" or 1/60" will not result in an exposure error because of the exposure latitude of the film. An alternative is to set the shutter speed and an equivalent "half-stop" of lens aperture, such as 1/30" at f/9.5, or 1/60" at f/6.3.

With a selection of possible combinations, which should be used? Does it matter which is used? Why does the manufacturer put so many combinations on the camera?

Before these questions are answered, you must understand the correlation of lens apertures and shutter speeds. Think of the lens aperture as a water pipe (the larger the diameter of the pipe, the more the water can flow). Extending this further, think of the film

sensitivity in terms of a bucket that has to be filled and the light intensity as the water pressure.

If a bucket can be filled in 1/30" with a pipe 8 square inches in area, how long would it take to fill using a pipe 4 square inches in area? Obviously, twice as long —1/15". If the exposure is calculated at 1/30" at f/11, how long an exposure is required at f/16 (the aperture one-half the area of f/11)? The answer is 1/15".

What happens if the water pressure increases? It takes less time to fill the bucket. If we use a larger bucket (lower ISO film speed), it takes more water (exposure) to fill it.

Shutter Speed Considerations

Generally, the shutter speed is chosen according to the amount the subject moves or how much of the movement you desire to show. If the subject moves slowly, a slower shutter speed can be used; if the subject moves rapidly, a faster shutter speed must be used to stop the movement and prevent blurring the image. Movement of the camera and photographer also must be considered. Therefore, the use of a tripod or similar brace is advisable when using a shutter speed slower than the reciprocal of the lens focal length; for example, 50mm lens (1/60"), and 200mm lens (1/250").

To stop the movement or action in a picture, you must consider the following three factors:

- The relative movement of the subject
- The subject's direction of movement
- The camera-to-subject distance

THE RELATIVE MOVEMENT OF THE SUBJECT.—The faster the movement, the faster the shutter speed required. The term *relative movement* is used because if the motion of the subject is followed, that is, the action is "panned" with the camera, a slower shutter speed can be used than if the camera were held stationary.

THE SUBJECT'S DIRECTION OF MOVEMENT.—A subject traveling at a right angle to the camera/lens axis requires a faster shutter speed than one traveling at a diagonal. Conversely, a subject moving toward or away from the camera, parallel to the lens axis, can be "stopped" with a slower shutter speed than movement in other directions (fig. 11-21).

SUBJECT	DIRECTION		
	↓	↘	→
Pedestrian (4 MPH)	1/60	1/125	1/125
Tractor (8 MPH)	1/125	1/250	1/250
Runner (12 MPH)	1/125	1/250	1/500
Sports, general (15 MPH)	1/250	1/500	1/1000
Horse, galloping (20 MPH)	1/250	1/500	1/1000
Automobile (35 MPH)	1/250	1/500	1/1000

Figure 11-21. —Slowest shutter speeds necessary to stop action.

THE CAMERA-TO-SUBJECT DISTANCE.—

The closer the action is to the camera, the faster the shutter speed must be. A car traveling 60 miles per hour across the lens axis at a distance of 100 feet would be "stopped" by a shutter speed of 1/1000" (or perhaps 1/500"). However, if the camera-to-subject distance were increased to 500 feet, the action could be "stopped" with a shutter speed of "1/250" or "1/125." If the car was a half-mile away, 1/60" should be sufficient to stop the movement.

DEPTH OF FIELD

Selection of a f/stop is done mainly for the desired depth of field. "Depth of field" is defined as the distance between the nearest and farthest points of acceptable sharp focus of the scene photographed (fig. 11-22).

Control of the depth of field is a valuable tool in photography. Depth-of-field charts are given in all camera instruction books as well as in photographic

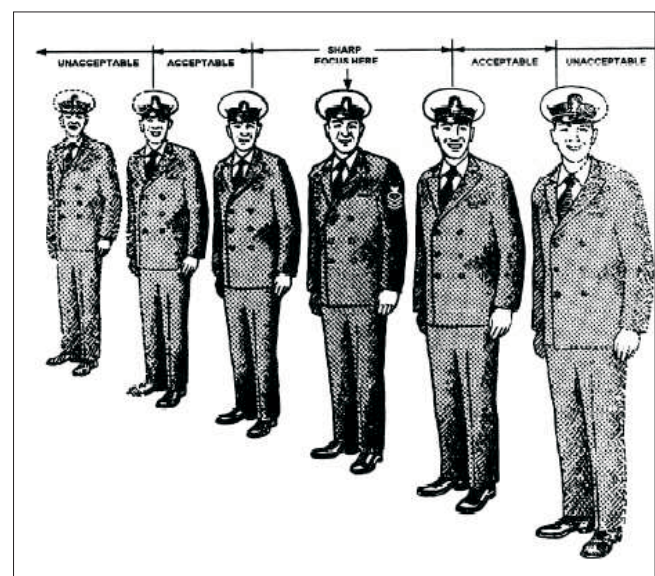


Figure 11-22. —Depth of field.

reference manuals, but many photographers fail to use them to their own advantage.

Simply stated, depth of field increases as the focal length of the lens decreases (a shorter focal-length lens is used), as the lens aperture decreases (gets smaller in size) and as the distance focused on (focal point) increases, or both. Inversely, depth of field is less for long-focal-length lenses than for short-focal-length lenses, is less for wider apertures and is less for shorter lens-to-subject distances.

A peculiarity of the term *depth of field* is that it is usually used to define a condition of maximum depth of field; and when the depth of field is shallow or purposely restrictive, the term *selective focus* is used. Selective focus is merely “selecting” a depth of field that will satisfy a requirement to have the foreground, background, or both, not in sharp focus. The use of selective focus to make the main subject stand out in the picture by being “sharp” while the rest of the image area is blurred is a good technique for gaining subject emphasis.

The importance of proper focus and shutter speed cannot be overemphasized. Incorrect focus, subject movement, camera movement, improper use of depth of field and so forth, can result in a blurred image on the photographic negative that cannot be corrected in any way. Film latitude can take care of minor errors in the exposure, but there is no latitude for focus and stop action. An image is either in focus or out of focus; action is either stopped or blurred.

DIRECTING PHOTOGRAPHIC SUBJECTS

LEARNING OBJECTIVE: *Identify the methods used in coordinating individual and group photographs.*

One of the most difficult tasks of photographing people is directing them. Since you are the only person who can see what the picture will look like before it is taken, you must take responsibility for “the pose.”

INDIVIDUAL PICTURES

As a Navy Journalist you will take pictures of individuals for a multitude of projects, such as news releases, familygrams and cruisebooks. Therefore, you should be familiar with the methods used to direct photographic subjects.

One way to make directing and posing easier is to give your subject an object to handle. Do not tell him to “just stand there,” as though in a vacuum, with nothing to do. Men and women can hold a book, binoculars or a tool used in their work. Children will do fine with a doll or model airplane.

Another strategy is to give your subject something to lean or sit on. Use a chair, stool, post or tree.

If you use props in your individual photographs, make sure you do your homework. For instance, do not photograph a Gunner’s Mate holding a 3-inch shell in front of a 5-inch gun mount.

Eyes are very important when photographing people. When the subject’s eyes look straight into the camera, a strong and immediate impact is created that attracts the viewer’s interest. When the eyes are directed away from the camera, the effect is less explicit and has more of an ambiguous quality. Decide on the approach that is best for your photograph and direct your subject appropriately.

Finally, you must be in charge of the situation. It is up to you to tell the subject what to do, how to do it and when to do it. This applies to a vice admiral as well as a seaman.

Many people are nervous and self-conscious in front of a camera. They try to look their best, and in doing so often present a stilted expression or pose. It is your job to give directions regarding their pose. It is also your responsibility to make sure that coat sleeves are pulled down and wrinkles are smoothed out. Make sure the subject’s hat is set at the proper angle. If you ignore these potential problem areas, your photograph will ultimately suffer.

GROUP PICTURES

Occasionally you will receive an assignment to photograph a group of people. There is added difficulty when working with a number of people at one time. You should consider each person individually, but you should also consider each individual as he relates to the entire group. Every precaution should be taken to make sure each person is shown clearly, and interest is not drawn to one person by some awkward pose or expression.

There are two general types of group pictures—formal and informal. Both are covered in the following text.

Formal

A formal group is one in which several people, uniformly dressed for the occasion, are seated or standing in as nearly the same pose as possible. Each member is placed in approximately the same relative position so that attention is not drawn to one person (fig. 11-23).

A formal group of about five people can be composed to fill the picture area very nicely. When six to 10 people are being photographed in a group, arrange them in two rows. For larger formal groups, arrange the people in as many rows as necessary to fill the frame. Avoid stringing out one long, narrow line of people across the frame.

When a large group is formed into three or more rows, you must devise some method to prevent the rear rows from being blocked from view. Furthermore, to compose the picture properly and fill it from top to bottom, you should have each row higher than the preceding one. One method is to arrange the group on the steps of a building, bleachers or terrace, so each row is higher than the preceding one. On level ground the first row can be seated, the second standing, and the third standing on benches. Another method which you can use in combination with the first is to elevate the camera so that it is pointing down at an angle on the group. This method is useful as an aid in composing and filling the picture area. A higher camera angle can be useful in eliminating an undesirable background.

Customarily, in a formal group, the highest-ranking person is located in the center of the first row and other members of the group arranged alternately to the right and left, according to grade. When all members of the group are the same grade, arrange them according to height, with tall individuals either in the center or at the ends, or occupying the rear rank.

Informal

The informal group is intended to depict some action or tell a story about the individuals. Although



Figure 11-23. —Formal group photograph.
(Photo by Mamie Burke, DoD)

the position and pose of each member is carefully planned, the results must appear casual and realistic (fig. 11-24). Members may be seated, kneeling or standing in a variety of positions and do not have to look in the same direction.

One of the most important factors in group photography is arranging people to obtain the best possible composition. Regardless of the number of people in a group, they should be situated to fill the picture and provide the largest possible image size of each person. One exception to this general rule is when the importance of the background is equal to or greater than the group itself. This often occurs with an informal group when the picture is actually intended to emphasize some object or piece of equipment, rather than the individuals. In this case, locate the camera for the best composition of the object; then arrange the people in the picture to enhance the story being told.

As with individual pictures, you must stay in charge. If you relinquish control, you will have a hard time getting everyone to look at the camera at the same time. Talk to the group and give them your instructions. Make sure your equipment is ready so you do not waste time and lose the group's attention.

STILL DIGITAL PHOTOGRAPHY

LEARNING OBJECTIVE: *Recognize the basic process of still digital photography.*

Photographic technology is constantly evolving. The introduction of **still digital photography** in recent years has already changed the way most photographers



Figure 11-24.—Informal group photograph.
(Photo by Scott Davis, DoD)

take and process pictures, and the way that newspapers and other publications use photographs.

Still digital photography, as the name implies, allows you to take photographs and store them electronically (digitally) in a specially manufactured camera. You can then process the photographs using digital photographic software installed on the hard disk drive of your computer. This software will allow you to view, crop and color correct your photographs. When you are finished, you may “output” the photographs to the hard disk drive (for long-term storage), a modem (for transmitting to another computer) or a printer to produce color prints, transparencies or negatives. The still digital photography process is shown in figure 11-25.

While it is common to scan regular film images and prints into your computer for digital handling, the real advantages come when using a digital camera. The full potential of digital photography, including the speed, manipulation advantages and minimum of waste apply when creating images with a fully digital system. While top-of-the-line digital cameras are more expensive than regular SLR cameras, in the long run, the savings pay for the start-up costs.

DIGITAL VS. TRADITIONAL PHOTOGRAPHY

Traditional photography starts with a regular camera and a silver or dye based film. After the film is exposed, it is removed from the camera and processed in up to seven (for slides) different chemical baths, washing, and then drying. Once the film is dry, prints can be made. By projecting the negatives or slides on to photosensitive paper and again processing using chemicals, prints are made.

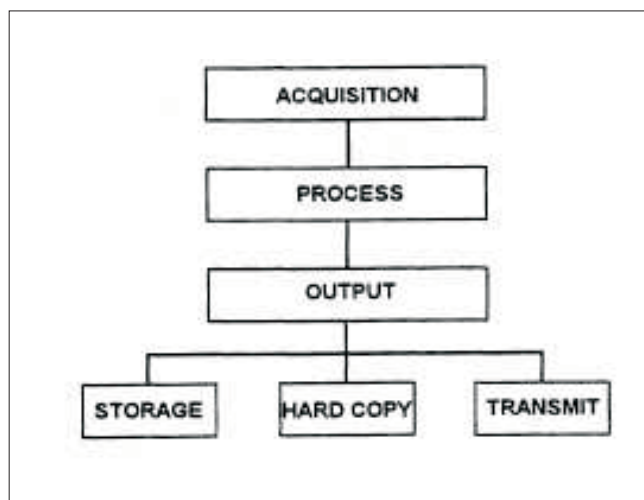


Figure 11-25.—The still digital photography process.

This traditional process has several distinct disadvantages. First, is the amount of waste. If only one image is needed when shooting a roll of film, an entire roll of film must be used. This can become costly. Second, is the amount of time it takes. The processing and print making steps take a minimum of about 15 minutes, using expensive automated processing equipment. Slides take at least an hour to process. Third, are the hazardous chemicals involved in the process. While not extremely dangerous, most photo chemicals are at least mildly caustic, and some are rather hazardous. Last is the storage and disposal of the chemicals.

Digital technology does away with many of these problems. Images are taken with a standard camera that has a Charge Coupled Device (CCD) where film normally would be located. After images are taken, they can be immediately previewed on a computer. To transfer an image to the computer, just double click on the file. There is no waste when only a few images are required. There are no chemicals to store or dispose of. Not only are these disadvantages eliminated, but the entire process is much faster and you have the benefits of being able to electronically edit the photos before printing using one of several photo software programs available on the market.

DIGITAL CAMERA

There are two types of electronic cameras: still-video and digital. A still-video camera is similar to a video camera without the tape storage drive. Still-video cameras take analog images in two passes, first the even rows, then the odd rows. This process is called interlacing, and can result in fuzzy images with fringing on high contrast scenes. To accommodate this interlacing, the still-video camera has smaller light sensitive cells than full-frame CCD's used in digital cameras.

Digital cameras are designed to provide a digital image from the ground up. Since digital cameras do not require the extra circuitry needed to interlace the image, the light-sensitive cells can be larger and closer together resulting in high quality images (fig. 11-26).

One of the main differences between traditional film based cameras and digital cameras is how the image is stored once the photo has been taken. With a film-based camera, the image is stored on film in the form of a latent image. Each roll of film can only hold a certain number of images, and when all the images are used you must insert a new roll of film. Digital cameras



Figure 11-26.—The digital camera.

work on a slightly different principle. After the image is exposed, the digital image is written to built-in memory devices.

There are several different types of storage devices. The DCS 200 has a built-in hard disk that can store as many as 50 images; some digital cameras can store even more. The drawback to a built-in drive is that when the drive is full, you must connect the camera to a computer to download or delete images before you take more photos.

More advanced digital cameras contain removable PCMCIA (or “PC”) cards. This card is about the size of a small stack of credit cards, and has a mini hard disk inside. This hard disk can be various sizes up to about 230 Mb, capable of taking about 135 images per disk. The benefit of using a removable PC card is that once the card is full, another card can be immediately inserted.

Some of the less expensive digital cameras store images in battery powered internal memory chips called Erasable Programmable Read Only Memory (EPROM). The disadvantage to this memory option is that you must download the images when the memory is full. Also, if the batteries die, you will lose the images.

The Navy uses a wide variety of digital cameras, depending mostly on the needs of the command. If the camera is to be used simply for recording command activities and special events, a digital camera with a zoom and flash will meet the command’s needs. These cameras are relatively affordable and reliable. Some research should be conducted, however, to ensure that you get the camera that meets your needs.

For more professional photography, there are many models and styles available that will capture not only still images, but video as well.

Camera techniques and feature photography are covered in chapter 12.

PHOTO JOB ORDERS

LEARNING OBJECTIVE: *Identify the purpose of the photo job order and list the required photo job order information.*

In areas where Navy imaging facilities are located, one of the easiest means of getting photographic coverage is by properly filling out an audiovisual job order form. The title of the form may change to include other services, but you should have an understanding of the purpose and basic information needed to fill out the request for services properly.

A job order serves as the authority for requested work, the record of the imaging facility and its receipt. It accompanies the work being performed through every phase of the photographic process.

To use the job order successfully, you should develop a good understanding and relationship between your unit and the imaging facility.

In submitting a job order, all information pertaining to the job should be recorded to avoid confusing the photographer performing the actual work. The job order information you must provide includes the following:

- Name of your activity
- Your activity job number
- Job security classification
- Number of views needed
- Size and finish of prints
- Priority and date required
- Location of work
- Name and telephone number of person requesting job
- Person to whom the photographer should report; also the date and time the services are required
- Description of the job to be photographed
- Uniform the photographer should be wearing

The most important information of the job order is the concise description of the job to be photographed. All information pertaining to the job should be described as clearly and completely as possible to avoid any confusion for the photographer.

Your relationship with the imaging facility personnel should include an understanding that your job orders always allow for a creative or imaginative shot along with the requested standard or sure-shot. In cases where the photographer's shot is better than the shot requested, use the better shot. **Never** request "one to 10 of every shot." Should you be allowed to select

your prints by screening proof sheets or negatives, select only the best shots to satisfy your requirements.

Another method you should use to foster good relations with the imaging facility is to rely on the judgment of an experienced photographer and request the "best view of ..." when ordering prints.

CHAPTER 12

BASIC PHOTOJOURNALISM

Photojournalism is a form of communication that plays a vital part in modern news reporting. To convey their message, photojournalists use a harmonious combination of photographs and words. Many of the leading magazines and newspapers attribute their success to photojournalism. The reason for this is simple—a good photograph can, at a glance, portray the essence of a news or feature story.

Well-composed, action-packed photographs with carefully worded photo captions have reader appeal, realism and permanence. Do you remember the photographs of the raising of the American flag over Mount Suribachi, the signing of Japan's surrender aboard the battleship USS *Missouri* (BB 63), the swearing-in of Lyndon B. Johnson aboard Air Force

One, or Neil Armstrong and Edwin “Buzz” Aldrin planting Old Glory on the moon, or the terrorist attacks that brought down the World Trade Center (fig 12-1). How many of the words written about these events do you remember?

The photojournalist's objective is to communicate primarily through photographs. To be an effective photojournalist, you must understand the following fundamentals:

- **Know your subject.** You cannot communicate information about a subject of which you have no knowledge.
- **Know why you are communicating.** You should always have a purpose for your message.



Figure 12-1.—"Ground Zero" at the site of the World Trade Center terrorist attack, September 11, 2001.

(Photo by PHC Eric J. Tilford)

The purpose might be as simple as sharing an emotion or an experience.

- **Know to whom you are communicating.** Is it a specific audience that has some knowledge of your subject, or is it a “mixed bag”?
- **Know how to use the camera.** Your camera is a mechanical device that only sees a limited area and exercises no selection over the action that takes place in front of it. As a photojournalist, you can use this limited view to exclude extraneous subject matter and to focus on your message. You do this by determining which lens, camera angle, lighting method and timing will capture the photograph that will best communicate your story.

This chapter introduces you to photojournalism and covers some of the techniques by which it is applied. Maximum emphasis is placed on achieving good photographic composition, interest, impact and technical quality. Granted, the basic information contained here is not sufficient to qualify you as a Navy photojournalist in the strictest sense. However, if you learn and use this material, you can become a proficient news photographer and an asset to the public information efforts of your command.

HISTORY OF MILITARY PHOTOJOURNALISM

LEARNING OBJECTIVE: *Recall the history of military photojournalism.*

The history and growth of military photojournalism has been brief, but significant. It started when Matthew Brady and his assistants were commissioned to document the Civil War pictorially. Their photographs were made on wet plates that had to be processed immediately, thus limiting mobility. The film they used was of low sensitivity; therefore, action photography was out of the question. Further, there was no means to get the photographs to the publisher quickly, so interest was limited. No processes for reproducing a photograph in a newspaper were known at that time, except by having an artist copy them into line drawings. These problems did not destroy the desire for photographs or the value of photojournalism as it existed then, but rather posed challenges to cause people to search for a better way to use the photographs taken.

By the time of the Spanish-American War (and the equally important Hearst-Pulitzer circulation war),

camera equipment had evolved into a smaller, portable form. Film on an unbreakable cellulose base had been invented that could be exposed in one place and processed many miles away and many hours later. Film sensitivity had improved so that action could be photographed. Quicker transportation meant more timely delivery of news photographs to the publisher, while their news value was still high. Methods of photoengraving, though still crude, allowed newspapers to print several halftones along with etchings and linecuts.

Military photographers took many photographs during World War I, but the importance of these photographs as an adjunct to the written history of the war was not realized for many years.

The period between the World Wars was very important to photojournalism. “Plaything” photography yielded to more exacting photography as a science. Cameras designed for presswork became available in a price range within the budget of the average newspaper. The sound motion picture, the miniature camera, the fast lens, the flash lamp, flash synchronization, and hundreds of film, emulsion and laboratory innovations were put to use. Most important, the public desired news photographs and editors accepted photography as a tool of journalism.

World War II saw news photography in the military services rise considerably. Early in the war, the services drafted professional photographers and formed teams to document the history of United States international involvement. They went one step further by using their talents to show the horrors of war. They took photographs with stopping power, photographs that had impact and photographs that forced the viewer to look and read the copy.

By the time of the Korean War, photography rose above an improved and exacting science and became a finer skill. Photographers began to document moods and feelings, to look for photographs that expressed what was not readily apparent on the surface and to concentrate on photographs for news releases. It was during this period that the military photojournalist became a professional.

During the Vietnam War years, photography continued its advances in equipment and processes. Along with these advances, photojournalism reached new heights, providing just short of a “you were there” atmosphere of the war. Today, the military photojournalist is a mainstay of the military

establishment—a vital contributor to the internal and external public affairs efforts of a command.

Thanks to modern technology and digital photography, photos that are shot in the field of important events can now be instantly processed and transmitted via electronic means. While there still are major news networks that take their photos with regular cameras, the shift toward digital cameras and digital photography has been swift throughout the industry.

Covering major evolutions in the future may not be as difficult as it was in the past because of these incredible technological advances, but the basic principles of good photography will always remain intact.

PHOTOGRAPHIC COVERAGE ELEMENTS

LEARNING OBJECTIVE: *Identify the elements of photographic coverage.*

Photographic coverage is invaluable in most publications. Through effective layout, photographs can be used independently as lead stories with merely a cutline accompanying them. In other uses, photographs can support headlines and written spot news accounts as well as feature stories.

The photograph serves as a definition for words. No two people imagine identical photographs through words alone. Groups of words rarely cause similar mental images in everyone. Different people see different photographs in their mental interpretations of verbal descriptions of a given scene. From a photograph, everyone gets the same mental picture.

TYPES OF NEWS PHOTOGRAPHS

What is a news photograph? Just about everything said about recognizing and gathering news also can be applied to the news photograph. News photographs also have common news elements. These same 10 elements—immediacy, proximity, consequence, prominence, suspense, oddity, conflict, sex, emotion and progress—are essential to successful photojournalism. You can judge the newsworthiness of a photograph by the degree to which these elements are present. The newsworthiness of a photograph, like that of an event, depends on the strength of intensity of the news element it contains.

Nearly all news photography is classified into two categories: **spot** and **feature news**. This applies to

sports as well as any other type of newsworthy activity. Since the spot news photograph achieves a dramatic quality, the unrehearsed action is obvious to the reader. The feature photograph, on the other hand, consists of elements that allow it to tell its story with a brief cutline, or on many occasions, without a cutline.

Spot News

In covering unrehearsed action, control over the kind of photograph you will get is somewhat limited by the situation. For example, in shooting a boxing match, you work at top speed and usually under great pressure. You record developments as they occur with little regard for the control of the men in the ring. Your ingenuity and alert observations will have to be called upon to ensure any technical quality at all. In shooting well-known personalities, you should photograph them doing something. A photograph without action, regardless of the prominence of the personality, is not in itself a storytelling photograph. The successful and usable news photograph has action and impact (fig. 12-2) and immediately draws the reader's attention either to the cutline or to the accompanying story.

Feature News

The purpose of the photo feature is to tell a story about a given subject, selected and planned by the photojournalist, using real people or real things, in real or believable settings. As the photojournalist, you arrange everything to appear as if the story is actually happening; you will have full control over composition, posing, arrangement and expressions of the subject. An example of an award winning feature photograph is shown in figure 12-3. You should create a lighting effect that establishes mood or realism in your photograph, and select the precise camera angle needed to give emphasis to your photographs.

In shooting the feature story, you are rarely hurried and there are opportunities to change your setups if you are not entirely satisfied. You also may take time to exercise your technical know-how (in processing control) to produce a photograph of the highest quality. An additional advantage of feature photography is that you may “cover” yourself by taking additional photographs; the straight news photographer is afforded little more than a split second for the quick “grab” shot.



Figure 12-2.—Award-winning news photograph with action and impact.
(Photo by PH3 Brian Fleske)



Figure 12-3.—Award-winning feature photograph.
(Photo by JOC Robert Benson)

COVERAGE PLANNING

Planning is essential to good news photography. When you are aware of the subject or event you want to portray, plan the photographic coverage so the story may be told through photographs alone, if necessary. The photographs must have imagination and a professional news touch if the results are to be acceptable to the news media.

Strive for simplicity, interjecting the human element into your photographs. Create impressions, use people and always remember that it is people and what they do in everyday life that make news.

Keep the following tips in mind when you plan coverage of news events:

- Shoot only when you have in mind the type of photograph you intend to take.
- Keep the photographs from looking posed. Posed photographs are permissible and for best results, it is often necessary for subjects to pose, but this fact should not be discernible in the finished photograph (fig. 12-4).
- Set the stage, place the props for dramatic effect and tell the people what to do and how to look. As we emphasized in chapter 11, you must be in charge when directing photographic subjects.
- Resist the temptation to ask the photographic subject(s) to “hold for one more.” Most people will do almost anything required for the first take; thereafter, they lose interest quickly in cooperating with the project, and the photograph ultimately suffers. However, if you feel that for some technical reason you did not get the photograph the first time, do not hesitate to speak up and ask for another shot. Remember, you were sent on the assignment to get pictures, and this is what you are expected to deliver.
- Photograph the faces that fit the emotion. A smile or pleasant expression does not show a lack of dignity; it shows that Navy men and women also have fun.
- Move in on your subject and make your photographs show the desired action. Seldom, if ever, will you be concerned with sweeping panoramas, unless they tell the story you want told.



Figure 12-4.—“Posed” photographs should appear as if the action is spontaneous.

(Photo by PH2 James Watson)

- Learn as much as you can of the event, the shooting locale and the principles involved before you leave the public affairs office.

Identification

Always record sufficient information so you may properly identify and prepare cutlines for your photographs upon returning to your office. Using a notebook or caption log to record cutline information was covered in chapter 9. Additionally, you may have an assistant jot down the information or tape record it as you go along.

Shooting Script

Some professional photojournalists plan their shooting with great care, including a complete shooting schedule or script. You should study the script before the assignment and commit it to memory, rather than checking it shot by shot at the scene. Often, you may have to depart from your script when shooting at the scene. You must stay one jump ahead of the action, and when the unexpected occurs, be prepared to make a change—remembering your story angle and objectives.

A good script is usually divided into two parts. The first part is concerned with the general idea of the picture story. All pertinent information, such as names, places, times and contacts are listed in this part. The second part lists the picture ideas and the information pertinent to each shot.

PART ONE.—The research of a photo feature theme is of the utmost importance to the success of any picture story. A firm idea of what is going to be shot and the approach that will be taken is needed before shooting can begin. Therefore, in part one of the

shooting script, you should complete the following sections:

Who—The name of the individual or subject that will be photographed. The job, title and duty responsibilities of the subject should be included, if applicable.

What—The exact nature of what the subject will be doing in support of the overall theme of the photo feature.

When—The time and date the subject will be photographed. Make sure the subject will be available at the time specified.

Where—The exact location or locations where the photography will take place. Make sure the specific area will be available at the time indicated.

Why—Why will this photo feature visually interest your audience? State the reason(s) why the subject will appeal to a given audience. (**Preplanning**—List three to seven picture ideas in order of their visual flow.)

How—List all arrangements that must be made to enable you to carry out the assignment. Include name(s) and telephone number(s) of contact(s) assisting with the event. Also list the photographic equipment (type of camera, lenses and specific lighting accessories) and props you will need.

PART TWO.—Part two of the shooting script should contain a well-planned list and description of, and reasons for, the photographs you determined will best represent the story. For example, if you were doing a picture story on the Navy's flight demonstration team, the Blue Angels, one desired photograph might be identified as follows:

SHOT 1: LONG SHOT

INSTRUCTIONS: Aircraft flying in close formation. Shoot with the operations tower in the foreground, from low angle, for perspective.

REASON: To show the reader the precision flying ability of the "Blues" and to identify the location of their performance.

Other planned photographs in the photo feature should be addressed similarly. The following information should be listed for each proposed shot:

- The angle of view (high, low, front, side, back and etc.)

- The action (implied or actual) expected to take place
- The type of shot (long, medium, close-up or extreme close-up)
- The desired depth of field or point of focus
- Any unusual lighting conditions

Finally, you should storyboard each picture idea to assure a unified picture page with emphasis placed on leading lines, lines of force, framing or rule of thirds. Storyboarding (fig. 12-5) entails sketching out each planned photograph beforehand, giving visual direction to your list of desired shots and numbering the sketches accordingly.

The sketches do not have to be works of art (stick men representing your subjects will suffice), but they should be recognizable as visual descriptions of the planned photographs on your list.

Remember, the shooting script is only a guide for shooting a picture story. With a basic idea of the subject and its importance (accomplished through research), you can better understand the subject and obtain superior results.

Shooting Script Techniques

A good shooting script should include the following techniques:

- **Change of pace.** During the actual shooting session in covering a particular subject, interest must somehow be maintained in the story. Interest can be retained by having a change of pace or variety in the coverage technique used by the photographer. Static coverage of a subject can be eliminated by first understanding the reason for certain types of pictures to be taken, and second, by keeping these points in mind during the script writing and the actual shooting.
- **Long (perspective) shots.** Taken from a distance or with the aid of a wide-angle lens, long shots show the subject in its entirety, relate it to its surroundings and clarify the relationship of its different components to one another. They are photographs that, at one glance, present many different aspects of a subject that subsequently is further explained in some of the other photographs in the story. This type of photograph is best taken from a high vantagepoint, such as a roof, scaffold or ladder.

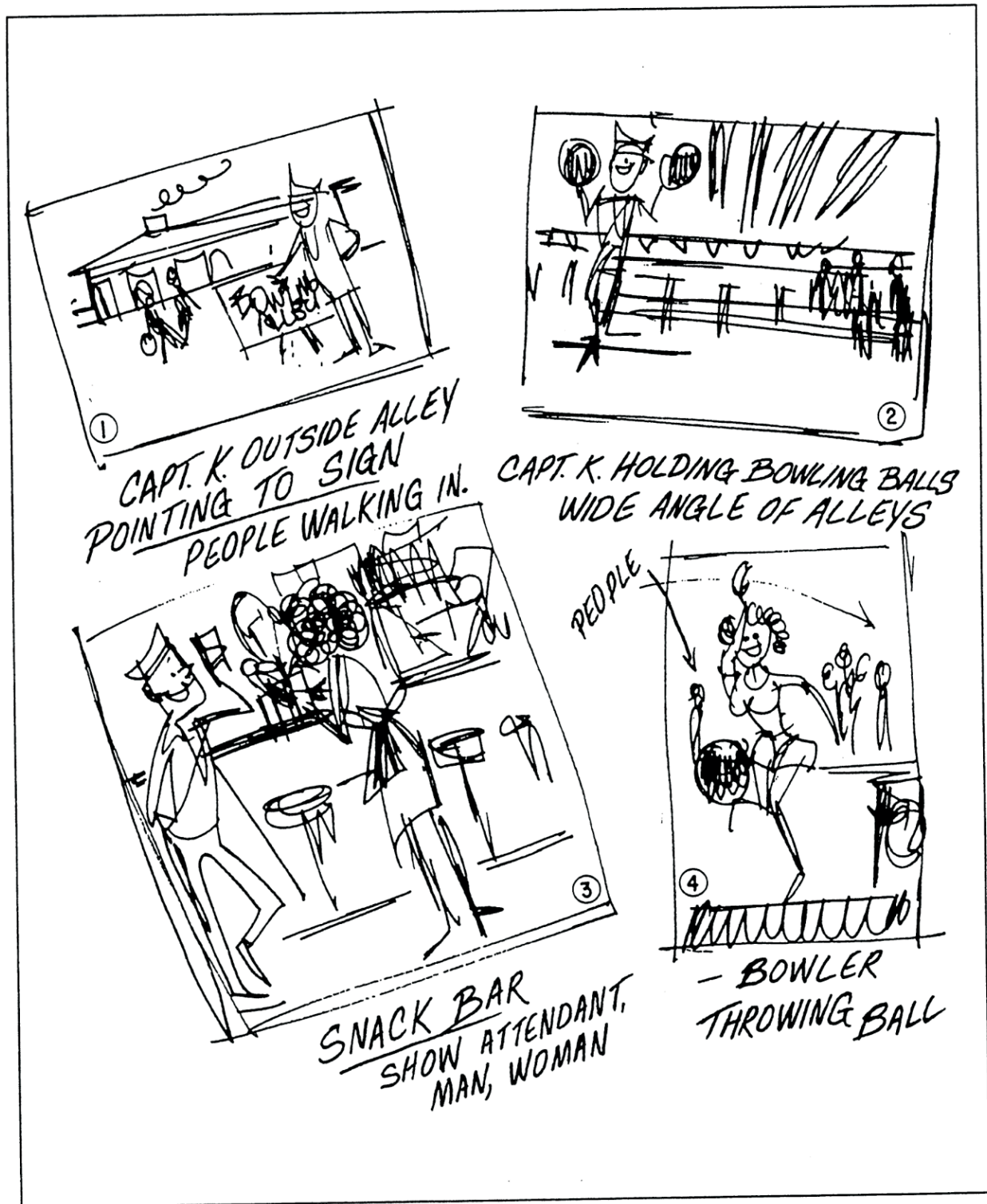


Figure 12-5.—Storyboard.

- **Medium shots.** Medium shots normally comprise the bulk of the photographs that make up the picture story. They correspond to the impression the eye receives in reality. They are used to show people, objects, things, interiors and action.
- **Close-ups.** Close-ups are explanatory photographs that permit the photographer to show important aspects of the subject in greater clarity and detail than would have appeared in reality to an observer. Only in the form of a close-up can a face, pair of hands performing a

certain function or small but important object appear monumental, interesting and in proper proportion to its significance to the story.

- **Horizontal and vertical views.** Shoot both horizontal and vertical views of your subject—with the same action portrayed when possible. This provides more latitude when you construct a picture story layout. You can usually crop long shots during the layout process to meet design requirements, but not medium and closeup shots.

Tentative and Final Layout

Picture stories are not just a haphazard gathering of photographs. The photographs used must have specific functions. The use of one photograph, as opposed to another, is closely aligned with the layout design. Even as you take photographs, you should consider the picture story layout.

The lead photograph is not necessarily the first picture in chronological sequence, but the picture that contains the essence of the story. Within the layout, the lead photograph is usually the largest and placed to attract the reader's attention.

Body photographs are those that actually communicate the story. They must use compositional techniques to present interesting and stimulating photographs. The editors should strive to present the photographs in different sizes and formats as well as presenting rights and lefts, highs and lows, longs and close-ups and at the same time, using the minimum number of display elements. Allow for maximum latitude when selecting your visuals.

You also should consider end photographs during the planning phase of the picture story. Not all picture

stories have definite endings, but all should bring the reader to the significance of the story.

After accomplishing the preceding tasks, you are ready to take photographs. The law of averages indicate that the more you take, the better your chances are of getting exactly what you want. However, if you are properly prepared, your photographs will not be a number of unrelated shots, but will be several sequences that cover the specific picture ideas listed on the script. This method was used during the first landing of the space shuttle. By covering your assignment in this manner, you will have a variety of visuals that can be used in a picture page layout (fig.12-6).

Equipment Readiness

Speed is the essence of news photography, especially spot news that just happens. Therefore, it is crucial that you always have a ready camera on hand with an adequate supply of film, flash and associated equipment. When a spot news event occurs, you will not have much time to get your gear together and check it out. This means you must start your day off with a complete check of the equipment available to you.

When possible, keep two cameras ready—one loaded with black-and-white film and the other with color slide film or a digital camera (for release to electronic media).

As you learned in chapter 11, you should keep your camera free from dirt, dust and moisture and handle it with care. Store it in a readily accessible place in its carrying case when not in use.

Self-Confidence

Gaining an attitude of self-confidence is one of the most difficult and important aspects of becoming a



Figure 12-6.— Picture sequence in a picture page layout.

(Photo by PH2 James Watson)

good news photographer. A “personality for the profession” is a prerequisite for anyone who wants to become proficient in the field of photojournalism.

To succeed, you must look upon occurrences with an objective view. The knowledge of the mechanics of photography is not enough. You must have an inquisitive nature that inherently causes you to want to know more about what is going on around you. Diligence, study, and practice are necessary to use the tools of the trade proficiently; aggressiveness and the willingness to understand the motivations of others will aid you in your quest for competence.

Those who have a thorough knowledge of their field and consistently display such attributes as honor, use finesse, diplomacy, courtesy, and honesty, as well as straightforwardness, automatically develop self-confidence.

All too often a photographer misses pictures of great pictorial value because of the lack of aggressiveness. Upon receipt of an assignment, your whole attitude must be that of determination. Come what may, you must get photographs. Navy Photographers and Journalists are frequently in contact with notable personalities from military organizations, local and federal governments, foreign countries, private industry and hundreds of people from all walks of life who at some time or another have had an association with the Navy or other armed forces.

Almost without exception, all of these people may be photographed without incident under nearly any circumstance. Fear of what is ahead and fear of standing in the shadow of great people cannot be a part of the personality of the news photographer. You should be respectful, as appropriate, but you should never feel subservient or inferior. Finesse, courtesy and straightforwardness in pursuing the job at hand immediately result in cooperation as well as quick action in seeing that the mission is accomplished.

People being photographed rely on the photographer’s ability to get the coverage desired and usually await the photographer’s instructions. Photographers and reporters are not unfamiliar sights to the VIP. When people have reached a point in life when they have become public figures, they are conscious that they no longer enjoy the privacy of the average citizen. Therefore, knowing they are news, they are ready and willing to assist members of the working media. However, they cannot do this until you have presented yourself. When your presence is noted, your VIP subject knows, through many years of

experience, that your job must be done with speed in order to meet deadlines.

In presenting yourself to a subject, the initial introduction normally is made by an aide or assistant; however, there are times when you must do this yourself. An honest and courteous approach at a diplomatic moment can be done easily. Simply remain in close proximity to your subject and await the earliest break in conversation; then step forward and state your name, rate, place of duty and your reason for being there. When you are acknowledged, take the minimum time necessary to get your photographs. Work with sureness, deftness and thoroughness. If you feel you did not get a photograph, bring this to the attention of your subject immediately. Often you will find that straightforwardness gets you a second chance that so seldom comes to the news photographer. If it is impossible to shoot another photograph at that particular moment, keep your eyes open and remain on the alert. Another opportunity may present itself, so be ready for it.

CREATING GOOD PHOTOGRAPHS

LEARNING OBJECTIVE: *Describe the basic elements of creating good photographs and the inherent security and safety considerations.*

Creating good photographs (news, feature or otherwise) depends heavily on the imagination and know-how of the person behind the camera. You must have a storehouse of imaginative ideas for presenting simple, yet interesting photographs that emphasize a definite point of view. The shot must have both visual and emotional impact and offer the viewers a perspective they do not always see (fig. 12-7). All of the qualities mentioned are a must for a news photographer striving for good photographic composition.

Essentially, photographic composition is a harmonious combination of a main subject and its supporting elements. This means you must be able to recognize these elements and then arrange them into the photograph that will tell your story.

Learning the art of good composition is similar to mastering any other skill. First you must understand the rudiments. Then, through much practice and attention, you develop your talent to the highest degree of perfection possible.

In the early stages of learning, we depend almost exclusively on what we can see and hear, imitating



Figure 12-7.—Feature photograph offering a unique view of the 2001 terrorist attack on the World Trade Center in New York City.
(Photo by JO1 Preston Keres)

what has been done before. Much can be learned about composition by studying various works of art and collections of good photographs. Each one offers an example of how to present a subject in an effective and interesting manner. By attempting to duplicate some of these photographs, you can acquire an understanding of the basic elements of composition.

The proper placement of the subject within the space of the photograph is one of the most important elements of good composition. Whenever possible, you should select and arrange the subject elements, choosing the viewpoint and lighting conditions that present the subject best. You also should arrange the subject in the photograph in such a way as to clearly and predominantly be the main point of interest. The main idea of the photograph should be recognizable immediately to anyone viewing your photograph.

In aiming for good composition, you should learn and use the following principles as guides:

- Simplicity
- Point of interest
- Compositional lines
- Balance
- Forms
- Rhythm or pattern
- Tone
- Depth perception
- Action
- Security and safety considerations

Your awareness, application and practice of these principles when composing a scene will assist you greatly in making an interesting presentation of your subject.

SIMPLICITY

Frequently, the simplest arrangement of your subject matter makes the most interesting presentation. Although each photograph consists of numerous small parts and contributing elements, none of these should appear conspicuous or portray more interest than the main object. The main object is the reason for making the photograph in the first place; all other elements should merely support and emphasize it. The scene should not be cluttered with a confusing number of objects and lines that detract from the subject. You should select a viewpoint that eliminates surrounding

distractions, making the principal subject readily recognized. If numerous lines or shapes are competing for interest with the subject, it may be difficult to recognize the main object or determine why the photograph was made.

Study the scene from all angles and decide exactly what you want to show; then strive to maintain this single idea as clearly as possible by eliminating unimportant or distracting elements from the photograph. Keeping the arrangement simple makes the job of composition easier and the photograph more interesting.

POINT OF INTEREST

With few exceptions, most photographs should have a single point of interest that tells the viewer this is the reason for taking the photograph. All other details support the point of interest. The point of interest is the point to which the eyes are drawn (fig. 12-8). If there is nothing in the photograph to attract attention to a particular area, the eyes wander throughout the scene. The point of interest may be a single object or numerous ones arranged so that attention is directed to one definite point.

Lines, shapes, human figures and so forth, should be directed so that they look or move toward the point of interest in the picture. If you have a group of people gathered around a table, keep the interest intact and centralized by having them look at each other or at one individual of the group. A perfect example of this is *The Last Supper* by Leonardo da Vinci. This unit of interest causes the observer's eyes to be drawn to the same point. Human figures attract attention more strongly than most other subject matter.



Figure 12-8.—The eyes of the viewer are drawn to the point of interest.

For instance, a photograph showing a person standing at a distance in front of a building may leave the observer wondering whether the person or the building is the main subject. When you include people in a scene, do not photograph them looking directly at the camera. When people look directly at us, we normally return the gaze by looking directly into their eyes. However, when they look in another direction, our attention is drawn from them to the point at which they are looking. Thus if people are grouped around a piece of machinery or an aircraft (the main object of the photograph), have them look at the object, rather than at the camera.

Rule of Thirds

Point of interest, as used in this section, is frequently called the center of interest. It is called “point” at this time simply to prevent giving the impression that it would be located in the center of the photograph space.

Although good composition can at times be obtained by placing the point of interest in the geometrical center of the photograph area, it is a good idea to avoid placing it there. Too frequently it divides the photograph into equal halves and makes it difficult to create a feeling of balance. Some photographers draw lines on the ground glass, dividing the photograph into thirds both vertically and horizontally, and thereby locate the point of interest at one of the four intersections of these lines. This division is sometimes referred to as the rule of thirds (fig. 12-9)—a concept briefly covered in chapter 8. You will find that one of these intersections is the best location for the point of interest and gives the best feeling of balance to the composition of the photograph. Most of the attention should be attracted to and held at this point. An artistic feeling for arrangement is an invaluable aid in composing a scene in order to make a striking photograph.

If the principal object is too close to one edge, appears top-heavy, or if it in any way leaves the observer feeling that it is misplaced in the photograph, the point of interest should be moved to another location. You also may change the camera angle to include another object and balance the composition.

Leading Lines

One of the most common techniques in directing attention toward the point of interest is the use of leading lines, shapes or patterns. You can use leading lines to convey psychological impressions; curved

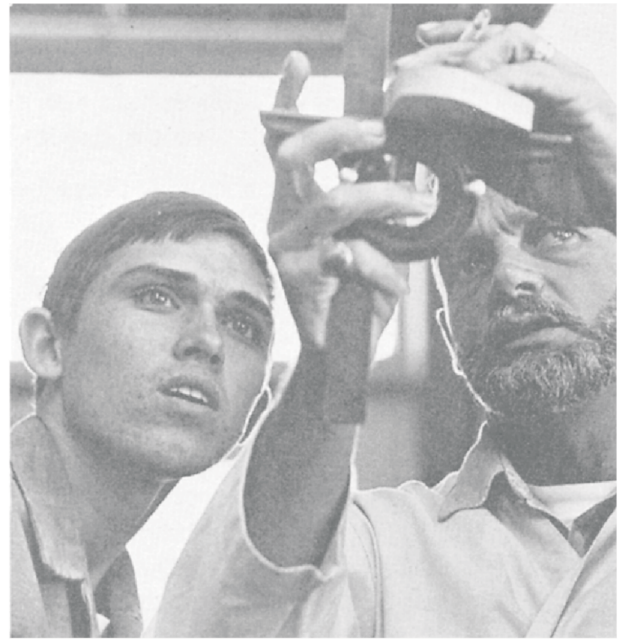


Figure 12-9.—The rule of thirds.

lines lend grace to a photograph and strong horizontal lines combined with vertical lines indicate strength and power. The leading line may be a road, an arm or leg, a shoreline, a patch of light or dark tones in the scene or a line of sight or the mooring lines of a ship (fig. 12-10). A good leading line is one that starts near a corner of the scene and continues unbroken until it reaches the point of interest. It should end at this point; otherwise, attention is carried beyond the main object in the photograph.

Foreground and Background

The area in front of and behind a subject can be used to develop depth in a photograph. For example, when you place objects relevant to the subject in the foreground, the foreground and the subject (in the middle ground) both become elements of interest in the photograph.

However, you should avoid a busy foreground or background. Too many details or unattractive components will detract from the main subject. For instance, a flag pole or a sword in the command insignia appearing to grow out of someone's head obviously harms the effect of the photograph.

The foreground or background also can be blurred intentionally by camera settings and selective focusing to draw attention to the subject.



Figure 12-10.—An example of good leading lines continuing to the point of interest .
(US Navy Photo)

Framing

Another method of confining attention to the point of interest is by framing it with foreground objects (fig. 12-11). The object could be an arch, a window, a tree limb or even an arm or leg.

Camera Angle

The camera angle also is very important in good composition. It can help you place emphasis where you want it. Angles can be used to create the unusual when the scene is commonplace. Using a high, low, left or right angle relative to your subject can produce an entirely new effect. Avoid shooting everything from the common eye level. This is the same view seen by your viewer all day long. Walk around the subject and determine which viewpoint will have the most impact or the most pleasing effect.

When the camera is placed above the level of the subject, it creates a distant and detached view. Shooting from a low angle produces a dramatic and a statuesque effect (fig. 12-12). When the camera is aimed at a 45-degree angle toward the subject, it lends depth to the subject and gives the best identification. On the other hand, a frontal view creates a flat appearance and will not last very long in the viewer's mind.

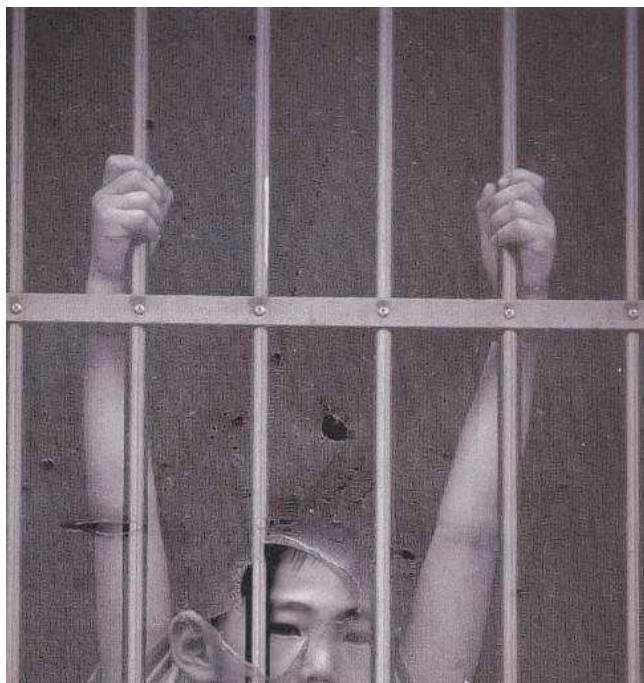


Figure 12-11.—Award winning black-and-white feature photograph using arms, bars and torn screen.
(Photo by JOC Robert Benson)

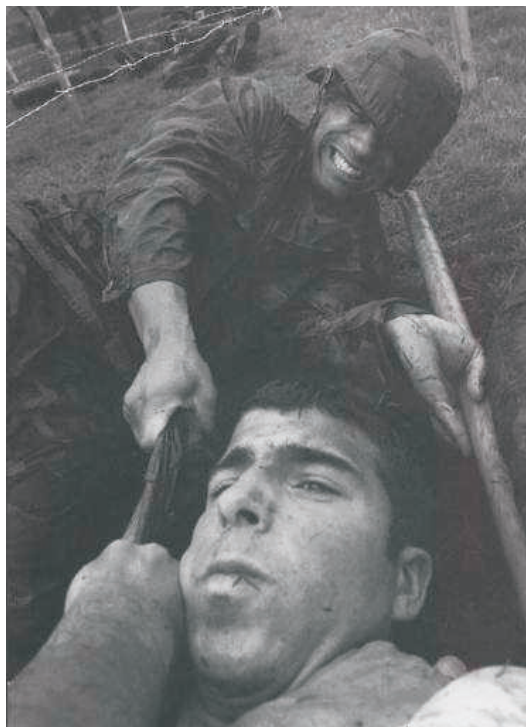


Figure 12-12.—Award winning black-and-white action photograph shot from a low angle.
(Photo by PH3 Saul Ingle)

Lighting

Lighting is one of the important creative elements of composition. When you control the light and direct it where it is wanted, minor objects or distracting elements in the scene can be subdued and thereby give more prominence to the main point of interest. The type of lighting best suited for a subject depends on the type of subject and the purpose of the photograph. If maximum detail is desired in the shadows, the illumination should be soft and diffused. Sidelighting is most effective in showing texture. However, light falling diagonally on the subject from above and to one side of the camera is the most natural form of illumination. We are accustomed to seeing most subjects under this condition in which the shadows are cast off to one side and slanted away from us, creating the greatest apparent depth and roundness in the subject.

Shadows are the key to apparent depth in a photograph. Without shadows the subject is without form, curvature or texture, appearing flat and lifeless. This does not mean that shadows should be harsh and black to achieve these effects. They may be soft, yet of sufficient density to show the most delicate roundness of form. As a general rule, harsh black shadows are undesirable in a photograph due to the complete loss of

detail in them. From a compositional standpoint however, black shadows can be very useful in balancing a scene and directing attention to the point of interest.

While viewing the scene from various angles to select the best camera position, note the effects of illumination. In all probability, the most complimentary lighting on an outdoor subject occurs only during one short period of the day. For this reason, time your photograph to take advantage of the most suitable available light or plan to create your own illumination with auxiliary lights.

Silhouetting

Silhouetting is when a subject is backlit and then underexposed. A silhouetted subject gives overall strength to a composition and isolates the subject through contrast of the dark foreground against the lighter background (fig. 12-13).

COMPOSITIONAL LINES

The formation of lines in a composition is unavoidable. For example, lines are formed by the horizon, a person's limbs, the side of a ship, a fence or a winding road. These lines—vertical, horizontal, diagonal or curved—lend their own element of emphasis to a composition.

Vertical lines formed by elements in composition suggest strength and dignity (a sentry at attention), while horizontal lines suggest tranquility and rest (a ship on the horizon at sunset). The diagonal line suggests action (climbing aircraft) and a variety of lines indicates activity. A feeling of grace and beauty is conveyed to the viewer by the use of curvaceous lines, such as those used in glamour and fashion photography.

BALANCE

A good composition should have balance. In other words, your viewer should not get the uneasy feeling that the elements may come tumbling out of your composition.

A balanced composition gives a feeling of harmony to the whole setting. Elements of balance are placed in opposing sections of a photograph in such a manner that each section appears to have an equal amount of weight or value, and the objects all appear to belong in the scene. Balance can best be achieved by

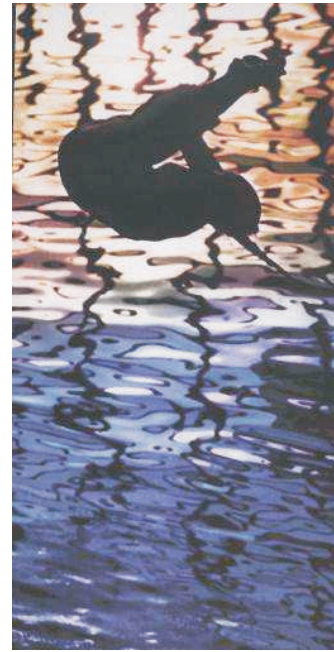


Figure 12-13.—Award winning photograph featuring a silhouetted subject.

(Photo by JO1 Preston Keres)

offsetting unequal sizes, shapes, tones or objects in a scene.

A good method of balancing objects of unlike shapes and weight is by placing them at unequal distances from the imaginary center of support. In other words, a small object placed a greater distance from the center counterbalances a much larger object just as though they were on a pair of scales. A small object of considerable importance and weight can be used to balance effectively a large but less important object (fig. 12-14).

The mental impression of weight is a factor in determining the relative placement of objects in a scene. Size alone does not determine the weight or value of an object. The tone of the object and



Figure 12-14.—Compositional balance is used to bring the smallest object in the photograph, a camera, into focus.

(Photo by PH1 Franklin Call)

placement in the photograph are factors in determining its importance.

FORMS

In analyzing masterpieces to learn the secret of their effectiveness, some experts found that the parts of the photograph are grouped according to some geometrical form. This finding can prove useful in planning the composition of your photograph; however, you are cautioned against applying it too mechanically. If you use these forms without modification, the resulting photographs are likely to be stilted and dull. The real trick is to use them in such a manner as to hide them partially.

The most important basic forms are as follows: the pyramid (sometimes called the triangle), the circle, the cross, the “L,” the radii and the “S.” All of these forms may be used in composition of material in a vertical plane or in a photograph involving perspective. Combinations of these forms, such as a circle and a cross, may appear in one photograph.

Pyramid

The pyramid form (fig. 12-15) suggests symmetry, solidity, aspiration or dignity. We see it in religious photographs, in church spires and in portraits with the head as the apex of the triangle.

Circle

The circle lends itself to flower studies, still life, graceful groups or landscapes framed in trees.

Cross

The cross composition is found in a sailboat with its reflection in water forming one line and the horizon forming the other.

“L”

The “L” composition may occur when a tree at one side of the photograph forms an “L” with the horizon line.

Radii

The radii composition has lines leading into a center, or out from it, as spokes lead to the hub of a wheel.

“S”

The “S” composition, covered earlier as curved lines, is undoubtedly the one photographers use most and the one most popular with viewers (fig. 12-16).

RHYTHM OR PATTERN

One word often heard in connection with photographs is rhythm. It simply means a repetition of some kind and may be a shape or a line (fig. 12-17). An illustration in nature is that of a field of wheat, blown by the wind, with each shaft of grain being uniformly bent in the breeze, producing rhythm with changing patterns.

TONE

Tone refers to the color of each object in a photograph. In black-and-white photography, the gray would run from white through all shades of gray to black. One of the most effective ways of giving impact to the point of interest is to contrast it sharply by color with the other objects in the photograph.

Variations in tones or contrast are important elements in the distribution of weight in a composition. Darker tones create the impression of greater weight. Thus a large light-toned object can be counterbalanced by a smaller dark-toned object. The contrasting tones may be nothing more than shadows or cloud formations. The balancing of equal or unequal tonal areas can be simplified by dividing the photograph space and arranging the objects in opposite thirds of the photograph or at the intersections of the vertical and horizontal lines.

DEPTH PERCEPTION

As far as the physical characteristics of a photograph are concerned, it has only two dimensions—length and width. Nevertheless, since we are accustomed to viewing nature in three dimensions, it is important that photographs also give the illusion of depth to make them appear more realistic.

The impressions of depth and distance are normally obtained when you mentally compare the relative size of various objects—near objects appearing large and the more distant objects much smaller, even though they are the same physical dimensions. You can easily create the illusion of depth in a photograph by placing common objects in the



Figure 12-15.—Pyramid form of a destroyed building.
(Photo by PHC Eric J. Tilford)

foreground or background, so the relative sizes of all objects can be determined.

You can also create depth by selecting a camera viewpoint that gives the impression of distance by perspective. This illusion of distance is sometimes

enhanced when you exaggerate the perspective by changing the camera position, by using a wide angle lens or by emphasizing texture and modeling through the use of strong sidelighting. Focusing the principal object critically sharp and leaving the background



Figure 12-16.—"S" composition used to balance the small boat and the Navy ship in the photograph.
(U.S. Navy photo)

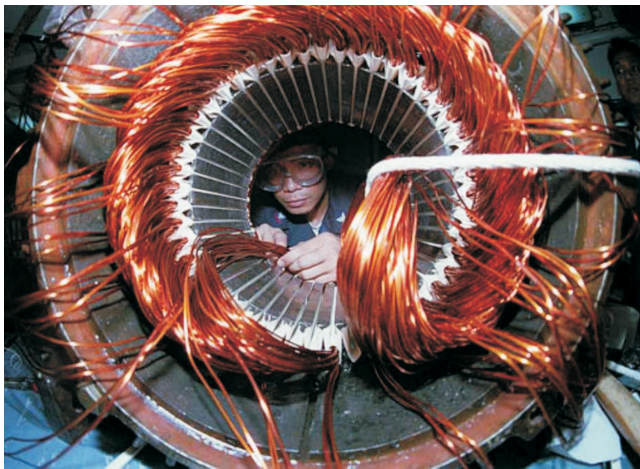


Figure 12-17.—An award winning feature photograph using rhythm composition shows an Electrician's Mate 2 Class at work aboard USS Blue Ridge (LCC-19).

(Photo by PHAN Kurt Fischen)

somewhat out of focus usually directs more attention to the subject and tends to increase the feeling of depth. Backlighting the subject gives better separation and makes it appear to stand out more prominently from the background, accentuating the subject and increasing the feeling of depth.

The feeling of depth also can be increased by making the foreground darker in tone than the main point of interest or the background. In some cases, this is done during printing by simply burning in the foreground.

ACTION

Action in a photographic composition can be either physical or implied.

In physical action, such as a fleet runner, the motion or position of the runner cannot be held. It changes after the split second in which the photograph is taken.

Action can be implied by a position that suggests a physical action will take place, or it can be facial in which the subject's face suggests or expresses action or a definite emotion.

Good action is shot at its peak, as shown in figure 12-18. Where the action is fast moving, as it is in a sporting event, the peak of action is short and sometimes difficult to determine. To capture this action requires precise timing and know-how. However, in feature development you have the



Figure 12-18.—Award winning action photo shot at its peak.
(Photo by PH3 Saul Ingle)

advantage of being able to plan the action logically after studying the job.

SECURITY AND SAFETY CONSIDERATIONS

Because of the many new technical developments in the Navy, you will probably come in contact with security problems early in your job as a news photographer.

Photographs disclosing pertinent detailed information of a classified nature are to be accorded the same classification as the subject of the photograph. No classified photographs can be released for publication or transmitted by electronic means.

Officers in command status are responsible for taking official or unofficial photographs and for the supervision, censorship and release of photographs. Unofficial photographs taken aboard ship, station or aircraft are either submitted to the CO or a properly designated officer (such as the PAO) for screening to assure that no classified matter is revealed.

The review of photographs must be objective in nature. The prompt release for publication of unclassified photographs of interest to the public and beneficial to the Navy is considered mandatory. Photographs of general naval life, such as ceremonies and athletic events, are not considered to be of a classified nature and should be released automatically. Photographs of doubtful classification for which release is desired must be referred to CHINFO.

Another violation you should be aware of is that of safety. An example is photographing a Sailor aboard ship using an electric deck grinder without safety goggles or wearing unauthorized rubber gloves. If you

are not sure of the correct safety measures for a given task, ask the command safety officer.

THE PICTURE STORY

LEARNING OBJECTIVE: *Identify the different types of picture stories and the applicable technical requirements.*

Knowing the detailed techniques for developing a picture story are requirements for senior journalists. However, at the JO3 and JO2 levels, you should be familiar with the various categories of picture stories.

TYPES OF PICTURE STORIES

There are seven basic types of picture stories and they are classified as follows:

- Illustrated text
- Photo-text combination
- Pure picture story
- Picture story within text
- Single picture story
- Abstract picture
- Informal portrait

Illustrated Text

For this type of picture story, the text or story is written first, then one or more photographs are used to illustrate, or dramatize, its content. In reality, this is not a true picture story, since the photographs are incidental, rather than an integral part of the text. The photographs are used to dress up the page, make it attractive, give it character or establish a mood. Many magazines use the illustrated text format. They frequently introduce each story with a single illustration, full-page size, which serves to attract the readers' attention and leads them into reading the story.

Photo-Text Combination

As the name indicates, the photo-text combination type of picture story uses a combination of both photographs and text. However, the photographs carry the weight of the story. The story is told primarily by related photographs arranged in some form of continuity. The text is important and provides worthwhile information relative to the photographs, but it is subordinate to the photographs. This is the

easiest type of photograph story to develop and the one most commonly used in the Navy.

Pure Picture Story

In the pure picture story there is no text except for a brief introduction outline. Of the seven picture story types, the pure picture story is the most difficult to develop. It is frequently presented in sequences of photographs taken at brief intervals. For example, a pure picture story of a VIP's arrival might show the aircraft landing, the disembarkation from the aircraft, handshaking with the greeting party, the inspection of an honor guard and the VIP entering a limousine. Pure picture stories normally are used only when the action is simple and familiar enough to the average reader so that no lengthy word description is required.

Picture Story Within Text

The picture story within text actually presents two separate but related stories. One story is told in words, the other in photographs. Both are complete in themselves. The text may be used without the picture story, or the picture story may be used without the text. Nevertheless, the combination of the two in a single layout makes the spread much more effective than either would be alone.

Single Picture Story

The single picture story is the most basic form of photojournalism. Single photographs, filled with impact, allow the viewer to “feel” the action and thus become involved with the subject.

The single picture story is similar to the lead photograph used in a longer picture story. It sums up the subject, evokes some emotion, or keys the action or the setting. The single picture, while strong, is also simple.

Every photographic situation is different so there is no magic formula to tell you how to put impact or strength into a photograph to make it meaningful. Occasionally, the single meaningful picture is simply a matter of luck—being at the right place at the right time. More often, the photograph is the result of careful planning. In either case, the event is only captured because of the photographer's timing (fig. 12-19). “Timing” means capturing the moment of greatest significance. There is no exact way of predicting that moment. To be successful, you must anticipate what is coming and be ready when it arrives.

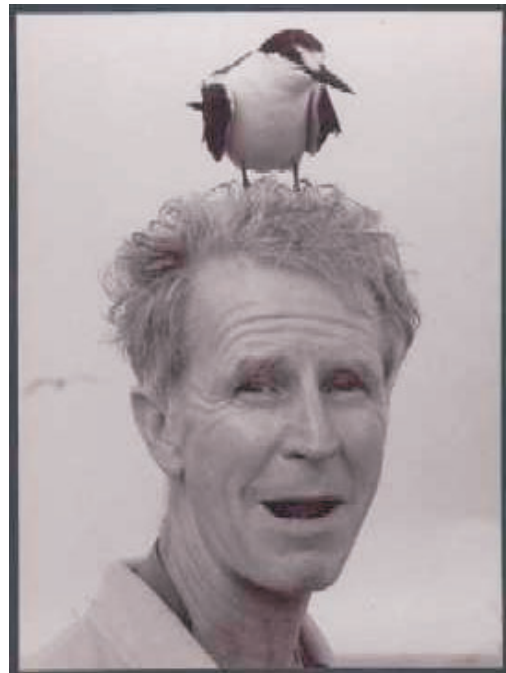


Figure 12-19.—Award winning feature photograph used in a single picture story.

(TSgt. Greg Kobashigawa, USAF)

Abstract Picture

You may be objective or subjective in your approach to a subject. This is considered an abstract picture approach. When you use the objective approach, try to record the subject as faithfully as possible, presenting the subject for the viewer's own interpretation. When your approach is subjective, you engage your own feelings in your work. You approach the subject from the standpoint of your reactions. You want the viewer to feel as you felt when you recorded the subject. With this approach, the viewer is handed the reactions of the photographer and sees the subject as the photographer saw it.

It is the subjective approach that must be used to photograph the abstract—thoughts, emotions and so forth. These are the subjects that primarily involve feelings rather than facts.

A photograph that captures an abstract idea or emotion conveys to viewers something with which they can identify. It stimulates their imagination and causes them to react emotionally.

To sense and capture abstract elements, you must have an understanding of what makes people react. Additionally, you must react yourself. You must see beauty and ugliness, feel love or hate, wonder at the great and small and sense and appreciate your own emotions (fig. 12-20).



**Figure 12-20.—Abstract photograph of World Trade Center damage at “Ground Zero,” September 2001.
(Photo by PH2 James Watson)**

To communicate the abstract in photographs, you must develop and use your inner sensitivity. The more it is used, the more your photographs are to be a successful reflection of your experiences and emotional nature. Plus, the more these elements appear in your work, the more viewers become involved with the photographs.

Informal Portrait

Strong, expressive informal portraits are the result of a successful interaction between the photojournalist and the subject.

The most important element when shooting an informal portrait is for you to convey the character and personality of the subject honestly.

With few exceptions, the informal portrait shot cannot be in a studio where the subject is posing. In this situation the subject may appear very formal and withdrawn.

The informal portrait is best made when the subject is candid. This means photographing the subject in familiar surroundings, such as his home or place of work. In these surroundings the subject's hands, gestures and facial expressions begin to convey character and personality.

The informal portrait is an excellent medium for relieving the boredom of the plastic formal portraits, the police mug shots and the "grip and grins" in Navy newspapers. If a person is of the caliber or character to be selected "Sailor of the Year," project that character and personality rather than the person's ability to shake hands.

Do not expect to get the best possible informal portraits by taking only two or three photographs. When you start, your subject will very likely be uneasy and tense. However, as you shoot, the subject will usually begin to relax.

The eyes (which must be in sharp focus) and the mouth are the important parts of the informal portrait. They are where the expressions, unique to each person, are revealed. Your job is to coax the expressions out of the subject. Usually, you can do this through a little conversation while you are shooting or by having the subject engaged in work or talking with another person. When the subject becomes involved and forgets the camera, the real expressions begin appearing (fig. 12-21).

There is no strong rule on how much of your subject should be included in your portrait. Ideally, an informal portrait will include everything that relates to the subject and nothing that does not. In some cases, this will mean including parts of the background because it relates to the subject. Or, it will mean throwing everything out of focus except the subject's face. A general rule is to keep the portrait simple and concentrate on the face.

Quite often it will be the available light that is the determining factor for adding depth and mood to the subject. Although formal portrait lighting should be avoided, you should master its techniques. This will give you an understanding of the various effects of lighting and the changes they can make to the mood or shape of a subject's face.

The best lenses to use for informal portraits are medium telephotos between 85mm and 105mm. A medium telephoto will minimize the distortion you may get by working too closely with a normal lens, and it will allow you to work at a distance from your subjects that may make them less conscious of the camera.

TECHNICAL REQUIREMENTS

Always keep in mind that the only reason for you to take a news photograph is to get it published. A print suitable for personal viewing may be wholly unsuitable for reproduction in a newspaper or magazine.

Most print media use the halftone reproduction process in which photographs are converted into a pattern of dots. These dots vary in size according to the intensity of the tone they will produce. In light areas, the dots are so small they are almost invisible. In dark areas, the dots are so close together they look like a



Figure 12-21.—An award winning informal portrait captures the emotion of damage control training evaluators between classes.

(Photo by PH1 Dolores L. Anglin)

solid mass of black. The amount of printing ink applied by the dots, of course, is in proportion to the light and shaded areas of the original print.

Because of this factor, photographs intended for reproduction must be clean and bright. The black must be strong enough to withstand a little “watering down.” Important halftones in the photograph must be separated clearly, so they will not blend in with each other or become lost altogether in reproduction.

Therefore, a photograph can be good in content and composition, but not usable for reproduction because it is lacking in the following three required technical elements: focus, detail and contrast.

Focus

“Focus,” as covered in chapter 11, means that the subject must be distinct and the image sharply defined. Focus for reproduction must entail extreme sharpness since halftones lose some of their original sharpness in the reproduction process.

Detail

The halftone will not produce fine detail. Small detail in a newspaper is usually lost; therefore, detail must be overemphasized. The most effective way to emphasize detail is to move in close with the camera and concentrate on small areas. Any detail that is important to a photograph should be as large as possible and adequately lighted by natural light or the addition of fill-in reflectors or flash.

Contrast

Contrast is the difference between the light, dark and the intermediate tones of a photograph. A photograph with normal contrast will have an image with a full range of tones from white to black with all the intermediate grays. The image will be boldly defined but will not reproduce well. A photograph low in contrast or “flat” has many intermediate gray tones but lacks clear blacks and whites. It has no brilliance or snap, lacks strength and appears dull. It will reproduce in halftones as an indistinct or “muddy” blur. Only a photograph of normal contrast can be considered usable for halftone reproduction.

SPORTS PHOTOGRAPHY

LEARNING OBJECTIVE: *Identify the techniques used to take sports photographs and record outline information.*

Sports photojournalists must know the sport they cover inside and out and demonstrate a keen ability to spotlight the key plays and players. While luck helps, more often, anticipation and a good working knowledge of the event are the foundation of a good sports photograph. Sports photography captures action; therefore, you must research the sport before game time to understand some of that action and to be prepared for it.

RESEARCHING THE SPORT

If you have never photographed a particular sport, prepare yourself by conducting research. Go to the library and read up on the sport, and if possible, watch a game or two (either on television or one played by local teams). Understanding basic strategies, rules and plays will help you capture the important moments of the game.

COVERAGE PLANNING

When you plan photographic coverage of sporting events, you should keep in mind the two main areas, action and people.

Action

Physical activity is the key ingredient of a sports photograph. Your photograph should not be static—sports action **must** take place. For instance, in football, the running back might break a tackle, the quarterback release a long pass and the linebacker make a sensational, back-breaking tackle. In basketball, the power forward might take the ball to the rim, the center slam-dunk his points home and the shooting guard drain a three-pointer. In softball/baseball, the extra hitter (fig. 12-22) (designated hitter) could send an 0-2 pitch over the fence, the base runner tag up at second and go to third or the shortstop make a sensational diving stop in the hole.

Regardless of the sport, the point is that you must know and consider the sport you are photographing to key in on the action that sells that sport. You must anticipate the action and squeeze the shutter a split second before the receiver catches the football. By



Figure 12-22.—Good action photograph using points of interest.

(Photo by JOCS (AW) Jon Gagné)

anticipating the play, you can capture the reception, rather than what happened immediately after the catch.

Shoot plenty of film when you cover sports. Often a shot you think will be good turns out to be unusable, while one you think you missed will run on the first page of the sports section.

People

Amateur Navy athletes are personalities within their communities. Your audience enjoys reading about them and seeing their photographs in your newspaper. Because the players are personalities, you should photograph them so they can be recognized in the picture.

The best sports photographs identify key players. “Identifying the players” means presenting the athlete from a profile to full-frontal view, if possible, to show the number on his uniform. A three-quarter to full-frontal view is best but is not always available.

SPECIAL CONSIDERATIONS FOR POPULAR SPORTS

Each sport has some peculiarities you must consider when you cover it. In the following text are some tips that will help you cover the “big three” sports—softball/baseball, football and basketball.

Softball/Baseball

If you make the proper arrangements with the base/station sports director, you can take photographs on the field in foul ground. However, as a courtesy, you should still ask the home plate umpire for permission.

Photograph left-handed hitters from the third-base side; conversely, right-handed hitters are best covered from the first-base side. You should shoot right-handed pitchers from the third-base side and left-handed pitchers from the first-base side. In softball, both left- and right-handed pitchers throw the ball while facing home plate, so you can shoot on the other side of the backstop or from directly behind home plate.

Home plate action is best shot from the third-base side of the field. Exercise caution, though. If you get in the way, you will probably be unwelcome at future games.

Get a variety of angles by moving around—go up in the stands, lie on the ground, look over a shoulder, or use any other creative angle that will not interfere with others.

Because you may need to photograph key plays on the opposite side of the field from where you are standing, be sure to use lenses with a long focal length.

Football

If you are covering **your** station or base football team, stay on that team’s side of the field and follow the action from that location. (In an assignment where you are covering both teams equally, you may move to the other sideline at the appropriate time.) Move up and down the field with the action and photograph the players as they run, pass, kick, tackle and score.

Football photography focuses on the offensive and defensive lines and the star players making or breaking plays. The end zones provide you with an excellent opportunity to capture plays on both sides of the ball. Since scoring takes place in the end zones, a lot of heated action and exchanges take place inside the 10-yard-line. On the sidelines, bench shots sometimes dramatically tell the winning or losing tale—the frustration painted on a coach’s face or the fatigue illustrated in a lineman’s slumped body.

Use long, fast lenses to cover football. Additionally, you should also have a wide-angle or normal lens for sideline and goal-line shots (fig 12-23).

Basketball

Basketball action normally takes place within 18 feet of the basket. Position yourself near your team’s basket so you can capture plays in the “lane.”

A 50mm lens is a safe bet for basketball photography. Longer lenses can make for dramatic

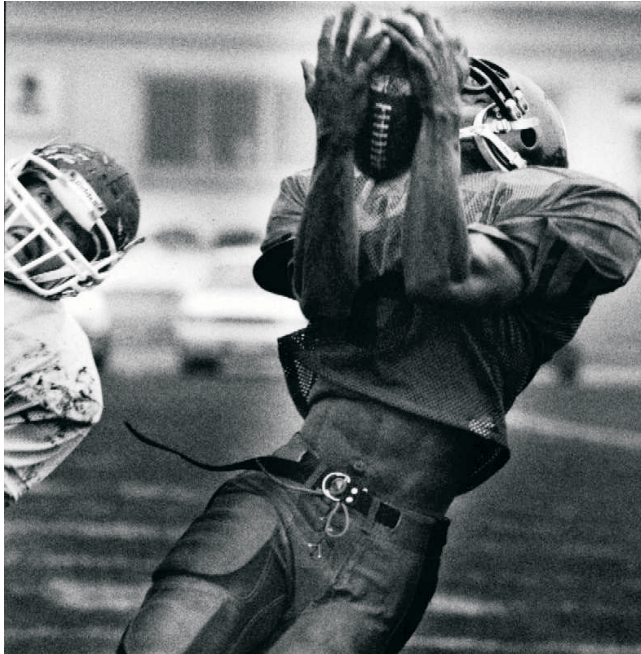


Figure 12-23.—An award winning black-and-white sports photograph captures the touchdown.
(Photo by PH2 Christian Fuchs)

photographs, but following the action and focusing becomes more difficult. However, you may get good shots by focusing a long lens on the net; then wait for a lay-up or rebound.

“Hoops” is perhaps the most difficult sport to photograph because of the lack of lighting, the fast action and the inability to always predict where the action will take place. To compensate, you should use a high-speed film or an electronic flash unit. Direct

flash creates harsh shadows and could blind the athletes, so use a diffused flash.

RECORDING OUTLINE INFORMATION

Sometimes events in a game happen so quickly that you cannot stop to write down outline information. In this case, it is sometimes wise to shoot the scoreboard, especially after a key play. Doing so can keep you on track if you cannot keep a running caption log to record the time remaining and score when the play occurred. Use time-outs, breaks between innings or other slack times to go back and write down your notes as described in chapter 9.

FORWARDING PHOTOGRAPHS

LEARNING OBJECTIVE: *Identify the process of handling photographs with historical or news value.*

Whenever a photograph is considered to be of historical or news value, the Navy Imaging Command in Washington, D.C., wants to retain it in the Navy’s permanent files (after you have made local use of it). Photographic documentation accomplished by designated photojournalists (NEC-8148) and other photography of significant news value should be forwarded to CHINFO.

Detailed instructions for handling photographs of this nature are covered in the *Navy Visual Information Management and Operations Manual*, OPNAVINST 5290.1.

CHAPTER 13

BROADCAST WRITING AND RADIO OPERATIONS

In the preceding 12 chapters, we covered the subjects that comprise roughly two-thirds of the journalist rating—print journalism and photography. Now we will examine the electronic media, beginning with the radio medium.

Although many of the techniques to be addressed also apply to television (chapter 14), our emphasis in this chapter is on radio and the unique writing, announcing and technical requirements of which you must be aware.

THE BASIC ELEMENTS OF RADIO

LEARNING OBJECTIVE: *Identify the basic elements of the radio medium.*

To use radio effectively as a Navy Journalist, you must remember the following one essential fact and be constantly guided by it: **radio is a medium of sound** (fig 13-1).

While people might hear without trying, they generally do not listen without being stimulated. Consequently, your job will be to stimulate them—to trigger their imagination so they can picture the event being described which is a necessity for an attentive radio audience. To do this, you must use one or a combination of the following three basic elements:

- Voice
- Sound
- Music

VOICE

The most important element of radio is voice, because it is generally the element used specifically to reach the listener with the desired information.

SOUND

When used on radio, sound must be distinguished easily so the listener is able to interpret the sound and understand what is being conveyed. The roar of a jet



Figure 13-1.—AFRTS radio broadcasters.

engine and the muffled sounds of other flight deck activity will help the listener to visualize the scene.

MUSIC

Music has a great suggestive power because it plays on human emotion and colors scenes. It touches the heart and mind and sets a desired mood.

When properly used, these three elements should accomplish the following three distinct purposes:

- To attract immediate interest
- To maintain that interest through a particular presentation
- To satisfy the audience's attention and curiosity

RADIO WRITING TECHNIQUES

LEARNING OBJECTIVE: *Recognize the six basic radio writing techniques.*

Radio writing techniques are designed to capture and hold the audience's attention until you have delivered your message. These six techniques are as follows:

- Aural sense appeal

- Rapid getaway
- Power of suggestion
- Pacing and timing
- Freedom of movement
- Conflict

AURAL SENSE APPEAL

Radio depends entirely on the ear; it must work completely on the listener's mental image inspired by sound waves coming from the radio speaker.

RAPID GETAWAY

Radio material must capture the attention of the audience within the first few moments of presentation or listeners will be lost. The material must present a challenge, a promise, a suggestion or a conflict to arouse the listener's attention.

POWER OF SUGGESTION

The human mind is a vast storehouse of scenery. The radio writer suggests to the audience what the scene should be and listeners —through their mind's eye —can see anything from a pinhole to Waikiki Beach.

PACING AND TIMING

You must prepare the material for delivery within a definite time frame. Within this time frame, the changes in quality, emotion, thought or feeling of the material are controlled.

FREEDOM OF MOVEMENT

As the radio writer, you can take listeners from one point on earth to another, or even into outer space with words, sound effects or the appropriate music.

CONFLICT

Radio writers call conflict the backbone of interest in radio writing. Conflict is the ageless formula of hero against villain, good against evil, the fight for survival and the solution to difficult problems.

RADIO NEWSWRITING

LEARNING OBJECTIVE: *Recognize the basic rules for radio newswriting.*

As a Navy Journalist your first encounter with radio writing will probably be as a radio newswriter. In that assignment your job will be to meet the deadlines and rigid standards of the electronic media with the Navy's news story.

Radio news style, while dictated by the need for getting and holding the attention of an audience, differs from station to station. It is alive and constantly changing along with the broadcast industry itself.

As with most areas of journalism, there are few absolutes. When scripting broadcast copy, you will face many subjective choices that can only be made by using your own common sense.

The guidelines presented in this chapter are intended to be consistent with the style recommended by The Associated Press. However, keep in mind that these guidelines are just that—guidelines. For your copy to serve any worthwhile purpose, it must be the kind of news story or radio spot the individual radio stations in your geographical area desire and are able to use. Most local broadcast stations have individual preferences regarding their newscasts and announcements. To be responsive, you must be willing to adapt to those preferences. Study the styles of the stations in your area. If your material does not meet the requirements of the stations you are attempting to serve, then make the necessary modifications.

Initially, be aware that writing for broadcast media is not the same as writing for print media. True, the same rules of accuracy, propriety and good taste apply; nevertheless, there are a number of differences, particularly in writing style. Your job is to tailor each release for the medium that will use it. A release sent to an area newspaper may be turned down by area broadcast stations if it is not rewritten in broadcast style.

Remember that any station is more likely to use your release if it is in a form that does not require the newscasters' reworking. Do not create extra work for the news outlet. This is a fundamental step and should be practiced by every public affairs office.

Broadcast writing is highly personalized—far different from writing for the print media. Broadcast copy is written and designed for the ear. It is personal and has a sense of immediacy. The listener becomes

involved and feels as though he is a part of the event being reported.

THE SIX Cs

In keeping with the requirements previously covered, your broadcast copy must measure up to the following six Cs:

- Clear
- Concise
- Complete
- Conversational
- Current
- Correct

Clear

Clear copy is written in a simple, easy-to-understand manner. It is developed in a logical way, flows smoothly and is easy for the listener to follow. Even the simplest story may be misunderstood on the basis of one hearing. The listener's attention may be divided between any number of distractions. Therefore, a radio news story should be perfectly clear to avoid misinterpretation.

Avoid jamming too many thoughts or numbers into one sentence. Generally, sentences that are more than 25 words contain more than one thought and should be rewritten into separate sentences. The same principle applies to dependent and independent clauses. They are often very cumbersome, so write them as separate sentences. Commonly accepted literary techniques, unusual words and complex phrases also tend to obscure sentence meaning.

In broadcast writing, simple words say it best. Choose words that everyone will understand—the announcer as well as the listener. Do not ignore colorful or descriptive words. However, steer clear of flowery phrases and trite expressions that simply take up time and are of no value. Avoid slang and always translate military, technical, legal and foreign terms into simple language.

Concise

You have concise copy when all unnecessary words have been trimmed away and only those words essential to convey your thoughts remain.

It cannot be overemphasized that broadcast writing is writing for the ear. Listeners do not have the opportunity of “rehearing” your copy, so your sentences should be direct and crystal clear. If your copy is long and involved, you put a strain on the listener and hinder comprehension. This does not mean broadcast writing should be kept at a fifth grade level—but given the choice of being complex or simple, you should choose the latter. Your obligation is to put information into meaningful terms that the “average audience” will understand, and more important, want to hear.

Complete

For the broadcast story to be complete, you must include in it at least four of print journalism's five “Ws.” Obviously, you will normally state **what** happened in your lead sentence. Then you will tell to **whom** it happened, **when** it happened, and **where** it happened. **Why** and **how** generally are not critical, although to be complete, some stories will require this information.

Conversational

Like good conversation, broadcast writing is informal and free-flowing. Write the way you talk. Let the story tell itself. This may sound easy, but it will take some effort in the beginning. A common pitfall is to write a story as it may have been required for an English composition or a print journalism assignment. Broadcast copy is read **aloud** by the announcer. It is not read by the listener.

The twofold objective of the conversational tone is that first, it allows the announcer to pick up the drift of the story and second, it makes the copy sound “right” to the audience.

A good broadcast writer “listens” to the story being written. When you have finished writing your copy, take it out of the printer and read it aloud to make sure it sounds conversational. Make sure there are no hard-to-pronounce words or combinations of words that are awkward to the ear. Rid your copy of words that might be unfamiliar to your listeners.

Current

If your story is not current, you do not have “hard” news. News of a perishable nature is usually hard news. If you have a story of immediate news value, you should expedite its completion and delivery to the

media. By the same token, if there are new facts or circumstances relevant to your initial release, an update of the initial story should be provided (and marked as an update). This will help ensure currency. It is also helpful if the new or changed elements of the story are identified to reduce possible confusion with information in the original release. You will feel the pressure of meeting deadlines, but remember your credibility is on the line.

Correct

The hallmark of journalism as a writing art—either print or broadcast—is the accurate presentation of facts. Your finished product must correspond accurately with the facts of the story. In the field, you will follow every possible lead to get the facts as well as report them.

COPY FORMAT

LEARNING OBJECTIVE: *Recognize the format used in broadcast copy.*

Normally, when you write copy for radio, you start with a general “what happened” lead followed by a body of significant facts. This body of information does not have to include **all** the facts of the story—only the most important ones. Radio writing is different from newspaper writing, because the most common newspaper lead is the summary lead (using the five Ws and H). For radio copy to include the who, what, where, when, why and how in the lead would be too cumbersome. There is no time for nonessential details in radio news items. For the most part, news stories run from 20 to 30 seconds. Spot announcements run from 10 to 60 seconds, and features may run for 2 or 3 minutes, depending on the topic.

THE BEGINNING

The lead sentence must gain the attention of the listeners and orient them on the facts that will follow in the body of the story.

When you begin a story with a person’s name or a number, you risk the possibility of that information escaping your listener. Have you ever wished that a newscaster or announcer would repeat something because you either joined the story in progress or did not initially give full attention to what was said? Some writers remedy this by repeating key information later in the story. Unless you are striving for special effect,

avoid names and numbers at the start. Do not use an “unknown” name at the beginning. It is much better to say, “A San Diego Sailor was cited for heroism today,” than to say, “Seaman Phillip Jones was cited for heroism today.” Start the story with a general “what happened” lead; then mention the recipient by name.

NAMES AND TITLES

In the case of names and titles being used together, titles should precede names. It should be “Hialeah Mayor Perfecto Hernandez—not ”Perfecto Hernandez, Hialeah Mayor.” Alert your listener to whom you are about to name by prefixing the name with the person’s title.

You should refer to federal office holders by title or as “mister.” For example, you would use “President Bush” or “Mr. Bush,” “Mr. Chaney,” or “Vice President Chaney,” “Senator Simpson,” or “Mr. Simpson.”

If a difficult name is unessential, use only the person’s title, such as “The Ambassador from Nigeria ...”

INITIALS

Generally, it is better to omit the middle initial of a person’s name unless it is a well-known part of the person’s name, such as Howard K. Smith, William F. Buckley or John F. Kennedy. In the case of president George W. Bush, the use of a middle initial is crucial so that he is not confused with his father, former president George H. W. Bush. The other exception to this rule is when the nature of the story requires further clarification, such as in births or deaths.

<u>USE</u>	<u>AVOID</u>
DISHONEST	NOT HONEST
INNOCENT	NOT GUILTY

<u>USE</u>	<u>AVOID</u>
FORGOT	DID NOT REMEMBER
IGNORED	DID NOT PAY ATTENTION
UNABLE	NOT ABLE

WORDS

In broadcast writing, you must be aware of certain categories of words that are potential trouble areas. These categories are explained in the following text.

Contractions

In day-to-day conversations, contractions are used rather liberally. Therefore, you should consider using contractions whenever possible because they add to the “conversationality” of your broadcast copy. A definite exception to this rule is the “it will” contraction “it’ll,” which is awkward when you are trying to read it into a microphone. Additionally, a contraction should not be used when you are intending to stress a particular word or phrase.

Not

Avoid the use of the word *not* in your copy. “Not” can be dropped out of your copy inadvertently and leave listeners wondering whether they heard “not.” Note the following examples:

Pronouns

There is a danger in using personal pronouns in broadcast copy. When you use “he,” “she” or “they,” make certain there can be no doubt in the listener’s mind to whom you are referring. The ear cannot go back and pick up the identification. Repeat the noun if there may be any question as to whom you are referring.

Alliterations

Beware of alliterations. When you compose a sentence consisting of several words beginning with the same vowels or consonants, you have an alliteration, and the announcer has a problem. Note the following examples:

Examples: THE WESTERLY WIND WHISTLED WILDLY.

THE LOVELY LITTLE LASSES LAUGHED LOUDLY.

Sibilants

Beware of too many sibilants ... “s” and “sh” sounds. They tend to create a hissing sound when read aloud. Read the following example aloud:

Example: THE SIX SOLDIERS STOOD SHOULDER TO SHOULDER.

This problem also arises quite often when the apostrophe is used to show possession. Remember, the sibilant makes the announcer sound like a “snake sliding slowly southward.”

Homonyms

Watch out for homonyms—words that sound alike but have different meanings. The ear cannot tell the difference between “won” and “one” or “bear” and “bare.”

Here and There

Where are “here” and “there” when they are heard by listeners scattered over a wide broadcast area? Make “here” and “there” taboo words when you must refer to a location. “Here,” in reference to a location, can be anywhere it is heard.

Libelous Words

So-called “red flag” words can lead to libel. You should be careful not to mistake “colorful treatment” in your story with words like Marxist, illegitimate, deadbeat, addict and so on.

Meaningless Words

When you refer to persons, places or things already mentioned avoid using meaningless words, such as “latter,” “former,” and “respectively.” Again, listeners cannot refer back. Likewise, avoid transitional phrases within your stories, such as “meanwhile,” “meantime” and “incidentally.” They are crutches. Each thought, phrase or paragraph should flow to the next with skillful organization—not with throwaway transitional words. Steer clear of flowery phrases and trite expressions that take up time and space and are of no value. Also avoid slang, vulgarisms and dialects in news writing.

Always translate military jargon and technical, legal and foreign terms into simple language as in the following examples:

USE	AVOID
ASSIGNED	DETAILED
BEFORE	PRIOR TO
ENLISTMENT	HITCH
IF	IN THE EVENT OF
SAID	CLAIMED
SENT	TRANSMITTED

Abbreviations and Acronyms

Abbreviations are used in broadcast copy, but only when they are intended to be read as abbreviations. The use of well-known abbreviations is permissible, such as Y-M-C-A, F-B-I, U-S, U-N, A-M, P-M or E-S-T (note hyphens). You may also use MR., MRS MS and DR. “ST.” may be used instead of “SAINT,” in cases such as ST. LOUIS or ST. PAUL.

Do not abbreviate the names of military installations. For example, use FORT (not FT.) KNOX and NAVAL AIR STATION (not NAS).

Never abbreviate names of states, cities, countries, political parties (except G-O-P), days of the week, months, titles of officials and address identification, such as street, avenue, drive or boulevard. In addition, avoid starting a sentence with an abbreviation.

A good rule for you to remember when using abbreviations in broadcast copy is—**when in doubt, write it out**. Note the following examples:

WRITE	AVOID
THE SENIOR BALL	THE SR. BALL
RALPH SMITH JUNIOR	RALPH SMITH JR
CAPTAIN KIDNEY	CAPT KIDNEY
AIRMAN HOMEY	AN HOMEY
SPECIALIST FIVE HILL	SP5 HILL
SEAMAN TURGEON	SN TURGEON
CHIEF PETTY OFFICER OTTO	CPO OTTO
PETTY OFFICER TINAI	PO TINAI
RADIO STATION W-I-N-E	RADIO STATION WINE
WORLD WAR TWO	WORLD WAR II OR WWII
80 MILES AN HOUR	80 M.P.H. OR 80 M-P-H
HAWAII	HI

When you use an unfamiliar abbreviation or acronym that will be pronounced as a word, be sure to spell it out in the first usage. The following example applies:

Example: THE NAVY’S CHIEF OF INFORMATION—COMMONLY CALLED CHINFO ...

Phonetic Spelling

If you are concerned about mispronouncing names and places, you can limit the possibility by writing a phonetic spelling of the word in parentheses immediately following the troublesome word. You are the author of the release and thus the “authority” for pronunciation of all names and places in the story. Study the following example:

Example: CAPTAIN ANTOINE (AN-TWAN) SPOKE TODAY...

Make sure the phonetic spelling appears on the same line as the word it represents.

NUMBERS

Numbers present special problems to the broadcast writer. For the sake of clarity, broadcasters have developed their own style with numbers. Any number that begins a sentence is always written out.

From One to Nine

For broadcast copy, write out the numbers from ONE to NINE. **Exceptions:** Sport scores, time (hours, minutes, etc.), dates, addresses, telephone numbers and license numbers.

From 10 to 999

Use numerals for numbers 10 through 999. **Examples:** 12, 45, 893, 250, 999.

Thousand, Million, Billion

Borrow from both styles and substitute words for zeroes. **Examples:** ONE-THOUSAND, 15-HUNDRED, 150-BILLION, TWO-TRILLION.

Conversational Numbers

Make numbers conversational. Round out figures unless the exact figure is essential to your story. For example, \$1,527 would become 15-HUNDRED DOLLARS. However, exact numbers must be used if your story deals with deaths or other subjects requiring exact statistics.

Dates

Write dates as OCTOBER 1ST, 2ND, 3RD, 4TH and 31ST, and use four digit numerals for years, such as 1979 or 1994.

Additional examples of using numbers in broadcast copy are shown in Table 13-1.

STRUCTURE OF BROADCAST COPY

LEARNING OBJECTIVE: *Recognize the structure of broadcast copy.*

Broadcast writing, like other styles of writing, can only be learned through experience. Consequently, writing experience can only be gained by writing, writing and more writing.

That is not to say there is nothing you can do in the meantime. To the contrary, there is plenty you can do to prepare yourself for success in this challenging field.

As an aspiring broadcast writer, you should study carefully, examples of good broadcast writing. In addition, as you begin to write, remember the principles and techniques covered on the following pages.

Writing for the ear can be tricky business. Reducing a complicated issue or concept into shorter and simpler terms is required of a good broadcast writer.

The most successful broadcast writers write the way people talk in their daily conversations. They write as if they were telling the story to a friend. As an experiment, start noticing the lengths of sentences

Table 13-1. —Using Numbers in Broadcast Copy

	<u>WRITE</u>	<u>AVOID</u>
Money	10-THOUSAND DOLLARS	\$10,000.00
Fractions	TWO-THIRDS	2/3's
	FIVE-TENTHS	0.5
	ONE AND SEVEN-EIGHTS	1 7/8's
Percentages	SIX PERCENT	6%
	ONE-TENTH OF A PERCENT	.1%
Address	4951 WEST 14TH LANE	4951 W. 14 LN.
Telephone Number	555-1212	5-5-5-1-2-1-2
Ages	12-YEAR-OLD MARY SMITH	MARY SMITH, 12
Decimals	11-POINT-25 or 11-POINT-TWO-FIVE or 11 AND A QUARTER SIX-POINT-FIVE or SIX AND A HALF	1.25 6.5
Roman Numerals	LOUIS THE 16TH POPE JOHN PAUL THE THIRD	LOUIS XVI POPE JOHN PAUL III
Ratings	THE NUMBER ONE TEAM	#1 TEAM
Scores	9 TO 4 23 TO 6	NINE TO FOUR 23 TO SIX
Odds	THREE-TO-ONE	3-1 or 3:1
License Plates	H-L-S 121	HLS-121
Military Units	SECOND FLEET	2ND FLEET
Height	FIVE-FEET-FIVE-INCHES	5 FT. 5 IN. or 5-5

used in normal conversation. You will even find that we do not always talk in complete sentences. Quite often we speak in fragments, especially if everyone engaged in the conversation is familiar with the subject matter.

Nevertheless, do not get too carried away with this idea. While the strict grammatical rules we have used during years of education might not have a direct application to broadcast writing, they are still valuable. Verb tense agreement and subject-verb agreement, in particular, are still important, especially for the sake of clarity.

PRESENT TENSE

Since broadcasters report events as they happen, the present tense is the natural tense. Using the present tense in broadcast news gives the copy an air of immediacy and it gives the listener a sense of participation. However, the verb tense that is most natural to a situation will be the most effective. Every story does not have to sound as if it happened the moment before the newscaster went on the air.

ACTIVE VOICE

Write your broadcast copy in the active voice. The active voice will help you tell your story more quickly and effectively. It also gives the story a sense of immediacy. Active voice provides impact, which is extremely important to a competitive broadcaster. On the other hand, the use of passive voice normally weakens the impact of a sentence. Look at the following example:

Example: THE MILITARY POLICEWOMAN
SEIZED THE EVIDENCE. (Active)

THE EVIDENCE WAS SEIZED BY
THE MILITARY POLICEWOMAN.
(Passive)

If you write the copy to sound like old news, then it will probably be treated as **no** news. Further, writing stories that will be happening far in the future is just as bad.

Do not confuse the active voice with verb tenses. The active voice can apply to past, present and future tenses. Active voice does not necessarily mean the present tense! **Subject-verb-object** is the best indicator of the active voice structure.

SENTENCE LENGTH

A sure way to improve broadcast copy is to shorten sentence lengths. Long sentences are difficult to understand and are equally difficult for an announcer to read. Remember, the announcer has to breathe! Further, the announcer's ability to breathe naturally will directly affect the pace and phrasing of the story. Again, the sentence has to sound natural. A good average length for broadcast sentences is 20 words. Do not go over 25 words. This is not a magic number, but it does work. Sentences longer than these tend to be saddled with unnecessary clauses or multiple thoughts. More often than not, those additional clauses can be treated as independent phrases. Broadcast sentences starting with "and," "but," or "because," for example, are perfectly acceptable as long as they sound natural.

You should vary the length of sentences also. Do not peg your sentences to that 20-word mark. Try to mix lengths. If all the sentences are the same length, the copy becomes very stilted and sounds like a laundry list. When possible, give the copy a little rhythm, a natural flow that approximates a conversation. The end result of proper sentence lengths is broadcast copy that stands a better chance of being understood by the audience.

THE LEAD

As stated earlier, the most important sentence in your broadcast copy is the lead. The lead should grab the listener's attention and set the tone for the rest of the information. Brevity and conciseness play an important part in the lead sentence. The general "what happened" lead is usually the most effective. This lead also can help localize the story. There are several reasons for the "what happened" lead. In broadcast copy, based on the premise of "headline service," there just is not sufficient time for you to deal with all the complexities of a story. Only one or two of the "Ws" might be dealt with at times. Granted, this may sacrifice some of the meaning of the story, but it is also a fact of life. Additionally, the broadcaster is usually working within a given time frame for a story. Some "stories" may be only 10 seconds in length; others may run longer. The copy is not edited by whacking off the last sentence, since the last sentence also is quite important to a broadcaster. The last sentence

is often used to make a specific point or as a wrap-up.

QUESTION AND QUOTATION LEADS

Generally, questions and quotations are not used in the lead of hard news stories. Since your listener cannot see the quotation marks, a quote requires special attention. A question lead, in other than soft news or a feature story, too often sounds like a spot announcement or commercial message.

The rule can be violated if your copy contains a rhetorical question that adds to the attention-getting nature of the lead, as in the following example:

Example: HOW COMMON IS THE COMMON COLD? A GROUP OF DOCTORS ARE LOOKING FOR THE ANSWER TO THIS QUESTION.

The same exception to this rule holds true in the use of quotations in a hard news lead, as in the example that follows:

Example: “WE WILL BE ON TOP OF INFLATION BY THE END OF THIS QUARTER.” THAT PREDICTION WAS MADE THIS MORNING.

THE BODY

After writing the lead to your broadcast story, you will develop the specifics of the story logically in the body of your story. Logical development is nothing more than an orderly development of the body of your story so that it flows smoothly to an end. Ask yourself, What is the next thing the listener wants to know?

The body of the broadcast news story can be developed in any one of the following three patterns: chronologically, expanding the Ws, and descending importance.

Chronological Development

In chronological development, you narrate the event from the beginning to its conclusion.

Expanding the Ws

Specifically identify the who, when, where, and so forth, and further amplify the “what happened.”

Descending Importance

After explaining “what happened” in the lead, place the facts in order of descending importance. Remember to place the most important facts first.

Avoid placing unnecessary details in the body of your story. Learn to separate the important from the trivial. Often, you will have to condense, to 100 words or less, a story that a newspaper might use as many as 750 words to report.

Quotations and Attributions

Earlier, we covered the use of quotations in your lead sentence. What about quotations in the body of your story? The same fundamental guidelines apply. Your listener cannot see quotation marks; therefore, you must alert the listener that a quote is coming up.

In the following example, the listener is alerted with “what he called” and “he said” before the quotes.

Example: THE SENATOR ATTACKED WHAT HE CALLED “NEEDLESS AND IRRESPONSIBLE USE OF FEDERAL POWERS.” HE SAID, “I BELIEVE THIS IS OUR MOST SERIOUS PROBLEM.”

QUOTE, UNQUOTE.—To lead into quotes by the use of “quote” and “unquote” is disconcerting and unconversational. Avoid the use of long quotes. If it is necessary to link the statement with the speaker, use conversational phrases for this purpose. Consider the following example:

Example: THE ADMIRAL WENT ON TO SAY ... CONTINUING HIS REMARKS, THE ADMIRAL SAID.

DANGLING IDENTIFICATION.—Generally, you should not start a sentence with a direct quote or paraphrase and tack its source on the end. This is known as a dangling identification or attribution. Remember to alert your listener that a quotation is coming up. Start the quote with the source. Consider the following example:

Example:

Correct—PRESIDENT BUSH SAID, “WE MUST CONTROL INFLATION.”

Incorrect—“WE MUST CONTROL INFLATION,” PRESIDENT BUSH SAID.

PUNCTUATION

Unlike punctuation for printed newswriting, punctuation in broadcast writing is used to help the announcer read the copy aloud. For example, a comma tells the announcer to pause, and a hyphen helps the announcer to pronounce difficult words.

The Period

As in any writing, the period indicates the end of a sentence or thought. More periods are used in broadcast writing because broadcast writing sentences are generally shorter and more conversational.

The Comma

Use the comma to indicate a pause shorter than that of the period. Do not use a comma unless you want the announcer to pause.

The Dash

Use the dash to set off appositives and other parenthetical expressions. Consider the following example:

Example: NATO—THE NORTH ATLANTIC TREATY ORGANIZATION—VOTED THIS MORNING.

The Hyphen

Use the hyphen to help announcers in phrasing difficult words and to instruct them on how to pronounce individual elements distinctly. Note the following examples:

Examples: RE-ADJUSTED, RE-EVALUATE, CO-OPERATE, RE-ALLOCATE, W-C-O-A, F-B-I, Y-M-C-A

The Dots

Occasionally, you can use a series of three dots to indicate a pause longer than that of a comma. The series of three dots can also be used for a dramatic effect. Consider the following example:

Example: THE JURY FOREMAN ANNOUNCED IN A CLEAR FIRM VOICE ... “INNOCENT!”

Parentheses

Normally, in broadcast copy, the material inside parentheses is not meant to be read aloud. Parenthetical material in broadcast copy includes notes to the announcer such as pronunciation guides, reading rates, and so forth.

Quotation Marks

Quotation marks often will appear in broadcast copy as a cue to the announcer or newscaster to stress a particular word or phrase, setting it apart from the rest of the sentence. Do not confuse the use of quotation marks as a cueing device with their use for indicating a direct quote. Quotation marks also can be used as an aid to announcers to set off nicknames, titles of books and plays and so forth. Note the following example:

Example: THE SQUADRON—BETTER KNOWN AS THE “FLYING BLUE DEVILS”—BEGINS ITS SIX-MONTH DEPLOYMENT TODAY.

MECHANICS OF BROADCAST WRITING

LEARNING OBJECTIVE: *Identify the mechanics of broadcast writing.*

There is more to a successful broadcast news release than a good news peg or interesting story topic. Your release may not even reach the news director’s desk if it does not comply with the mechanics of broadcast writing.

When we speak of broadcast writing mechanics, we are referring to all aspects of a news release, other than the actual content of the story. We speak of a basic format and style used by both commercial and military broadcasters.

Your compliance with a few basic rules assures a better chance for your release to make the airwaves and, in turn, tells the recipient of your story that he or she is dealing with a conscientious broadcast journalist.

Always treat a release from your office as official correspondence. You are responsible for the information it contains. In the broadcast copy, you should include all the facts necessary for the release to be understood and include all administrative information, such as points of contact and release numbers.

Stations will not accept or use sloppy copy. Your broadcast releases should be error-free. Since broadcast copy is designed to be read aloud, it should not appear to be cluttered. Make sure there is sufficient white space, and always type your script double-spaced. Double-spaced copy is not only easier to read but it also provides space for additional information the announcer might want to insert.

UPPERCASE VS. LOWERCASE STYLE

Broadcast copy can be written (typed) in all capital letters or uppercase and lowercase. There are merits for each style. We are used to reading in uppercase and lowercase, and the patterns of words are easier to distinguish. If both uppercase and lowercase are used, you can also use caps for emphasis. However, the wire services use all caps and the all-capital treatment would conform to that style. Your job is to determine the best style for your releases and use it. Sticking to one style only, within the context of a story, also is important. Be consistent!

TYPING COPY

When typing broadcast copy, you should set your typewriter/printer margin for an average of 60 spaces per line. This will give you about 10 words per line and will aid you in quickly determining how much copy you have written or need to write. Two to four lines will equal about 10 seconds of copy. Seven to eight lines will yield approximately 30 seconds, and 14 to 16 lines will average about 60 seconds.

Since the size of the print influences readability, your releases should be in 10- or 12-point type.

TIMING

Timing in newscasts is also very important. Many radio stations run a five-minute newscast on the hour. By the time all the spots, jingles and introductions are weeded out, there is precious little time for news. Ten or 15 seconds in story length can make a difference in whether or not your release will be aired. Your release should be timed, and the time required to read it should be indicated on the release.

The average announcer reads at a rate of 2 1/2 words per second. Simple multiplication shows a 10-second release averages 25 words and a 60-second story averages 150 words. Remember—we are referring to an “average” announcer; naturally, there

are many variables. Radio DJs usually read faster than radio newscasters, and radio newscasters usually read faster than television newscasters.

PARAGRAPHING

Do not indent sentences in broadcast copy. It is a waste of space when writing on only half a page. Paragraphing is not used in broadcast writing, since the treatment of a topic can usually be handled in one paragraph anyway. Always set margins flush-left, so your copy will appear as one block.

Consequently, you should not hyphenate or divide a word at the end of a line. If the whole word does not fit, simply drop down to the next line. Likewise, do not split a sentence between pages in your broadcast story. It makes it difficult for the announcer to maintain continuity.

NUMBERING PAGES

If your broadcast story is more than one page, number the pages consecutively. For example, if your copy is three pages long, number the first page 1 of 3, and the last page 3 of 3. Write page numbers in the upper left-hand corner of the page.

(MORE)

When a story takes more than one page, center the word (MORE) under the manuscript portion at the end of each continued page.

THE END

Indicate the end of your broadcast copy by centering three number symbols (# # #) under your manuscript column.

ADMINISTRATIVE INFORMATION FOR BROADCAST RELEASES

LEARNING OBJECTIVE: *Identify the administrative information required on broadcast scripts released to the media.*

For obvious reasons, it is necessary for you to identify yourself and your organization on broadcast releases. You should also include a telephone number in case the civilian broadcaster needs to ask any questions relative to the story.

FOUR-UNIT HEADING

Each broadcast script will have a four-unit heading, located below the administrative information but above the actual story matter. Though not read aloud, this heading tells at a glance the basic information the broadcaster requires in scheduling your story for a newscast. The four-unit heading contains the following components:

- **Slugline.** The slugline serves as a title or headline of the story.
- **Date.** The date on the script is the date of its release.

- **Copy length.** The copy length tells the recipient how long it will take to read your broadcast copy.
- **Release line.** The release line indicates the type of broadcast release (covered in the following text).

RELEASE LINES

All items submitted to radio stations should contain specific release information. One of the following release methods is recommended:

- **FOR IMMEDIATE RELEASE.** Use on hard news items.

Table 13-2—An Example of a Completed Radio News Release

PUBLIC AFFAIRS OFFICE NAVAL AIR STATION SAMARA POINT KENT, FLORIDA 32505-5484	TELEPHONE: (904) 456-5070 456-5071 DSN: 922-5070 FAX: 456-5072
FOR FURTHER INFORMATION, CONTACT:	LCDR LEE MAZZILLI (PAO) JO1(AW) JUAN AGUSTO (APAO)
OFFICIAL NEWS RELEASE (FOR RADIO)	
PAGE 1 OF 1	
PROGRAM <u>75</u> (WORD COUNT)	RELEASE NO. <u>36-02</u>
SAMARA HELICOPTER CRASH KILLS FOUR (Slugline)	(Release Date) July 21, 2002
30 SECONDS (Copy Length)	(Release Line) FOR IMMEDIATE RELEASE
<p>A MILITARY HELICOPTER CRASHED TODAY AFTER TAKING OFF FROM NAVAL AIR STATION SAMARA, KILLING ALL FOUR CREW MEMBERS ABOARD. THE S-H THREE-H “SEA KING,” ASSIGNED TO HELICOPTER COMBAT SUPPORT SQUADRON 297, WAS EN ROUTE TO A TRAINING EXERCISE ABOARD THE AIRCRAFT CARRIER U-S-S QUERINO (KAY-RINO) WHEN IT WENT DOWN AT THE NORTH END OF THE MAIN RUNWAY. THE NAMES OF THE DEAD ARE BEING WITHHELD PENDING THE NOTIFICATION OF RELATIVES. THE NAVY IS INVESTIGATING THE CRASH.</p> <p>###</p>	

- **FOR GENERAL RELEASE.** Use on soft news, features or spots that do not require immediate airing before its value is lost.
- **DO NOT USE AFTER (Time and Date).** Use on spots or news items about events that run for a limited time.
- **HOLD FOR RELEASE UNTIL (Time and Date).** Use on advance releases.

EDITING BROADCAST COPY

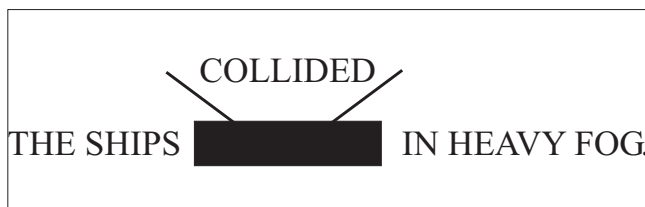
LEARNING OBJECTIVE: *Identify the method of editing broadcast copy.*

Unlike print journalism, in which copy usually passes through several reviewers, broadcasters do not usually exercise that type of control. Depending on the deadlines of the broadcast facility, they might rewrite your release entirely. On the other hand, the local newscaster could simply adopt the old “rip and read” policy and read your release “cold.” Naturally, the second method does not speak too highly of the news staff, but unfortunately, some commercial and military broadcasters continue to do this.

Absolutely clean copy—free of mistakes—is the rule for copy prepared for release to radio stations. Sloppy copy is disconcerting to any announcer.

For in-house productions, editing marks may be used sparingly, but only those editing marks easily understood by an announcer are acceptable. Do not use print media copy-editing marks. Use only the broadcast editing methods covered in the following text:

- **Correct misspellings** by blackening out the misspelled word completely and printing or typing in the correct version above it. Do not attempt to correct a letter within a word. Broadcast copy has no editing mark to correct a single letter within a word. Rewrite the entire correct word as in the following example:



- **Insert words or phrases** by printing or typing the desired words above the line and indicate

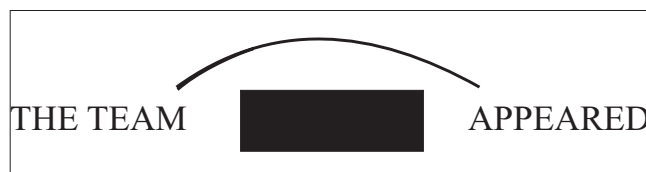
the point of insertion. Note the following example:



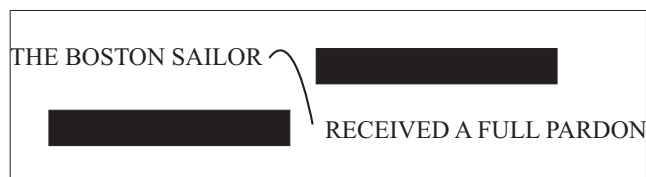
- **Separate run-together words** by using a single line, as shown in the following example:



- **Delete a word** by blackening out the word and bridging the gap. Consider the following example:



- **Delete words on more than one line** by using a curved line to reconnect, as shown in the following example:



SPOT ANNOUNCEMENTS

LEARNING OBJECTIVE: *Identify the two types of radio spot announcements and recognize the techniques used in writing them.*

The sustaining point of a commercial radio station is the commercial. Although neither the Navy nor the American Forces Radio and Television Service (AFRTS) use them, commercials have a valuable counterpart in Navy public affairs. That counterpart is the spot announcement. Table 13-3 shows a basic spot announcement format.

Spot announcements are usually 60 seconds or less and come in two forms—the selling spot and information spot. Both are covered in the following text.

Table 13-3.—Spot Announcement Format

**PUBLIC AFFAIRS OFFICE
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POINT KENT, FLORIDA 32505-5484**

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OFFICIAL NEWS RELEASE (FOR RADIO)

PAGE 1 OF 1

PROGRAM 76 WORDS

RELEASE NO. 54-02

RADIO SPOT FORMAT

September 4, 2002

30 SECONDS

FOR GENERAL RELEASE

AMERICANS HAVE GROWN UP WITH COMMERCIALS AND SPOT ANNOUNCEMENTS. THE “SELLING” SPOT INFORMS THE LISTENER, THEN TELLS HIM TO DO SOMETHING. THE “INFORMATION” SPOT SIMPLY INFORMS. THE SELLING SPOT HAS THREE STEPS...ATTENTION, APPEAL AND ACTION. THE INFORMATION SPOT USES ONLY ATTENTION AND APPEAL. THE ACTION STEP IS WHERE YOU TELL THE LISTENER TO DO SOMETHING. IT CONTAINS SIX WORDS OR LESS. NONE OF THE OTHER SENTENCES...IN EITHER SPOT...SHOULD BE MORE THAN 15 WORDS.

#

SELLING SPOT

The selling spot is designed to make the listeners take some type of action as a result of the ideas you present to them. The spot also can be used to change attitudes. Examples of these are “Be there!,” “Do it now!” and “See your recruiter today.”

There are many ways for you to structure the selling spot. One way is the three-pronged approach—**attention**, **appeal** and **action**. First, you form your basic idea and attention-getting lead sentence. Then you present the merits, advantages and

appeal of the idea. Finally, you motivate your listener to take action to gain the benefits you were promoting in the spot announcement.

Attention

A lead such as “Now you can lose weight while sleeping!” is almost an automatic attention-getter for a large segment of your listening audience. This type of lead draws the listeners into your message by provoking their interest and attention. Copy directed toward emotional and motivational drives is copy that

sells and should be slanted toward a particular group that needs a particular product.

Spots selling baby food, for example, are directed at mothers who are concerned with the health of their babies. These spots emphasize the healthful ingredients of the baby food. In the same way, the slant toward a particular group is used by the Navy in recruiting. Such spots are aimed at young people in the age group between 17 to 25, and words, such as security, travel, education, missiles and electronics, are used as attention-getters.

When the attention portion is directed toward the listener's desires, aspirations, dreams and ambitions, you will take the first step toward getting that individual to listen to the appeal and the action portions of your spot.

Appeal

"Why don't you begin to enjoy the finer things in life?" You have probably heard that appeal in one form or another. In the appeal portion, you present the selling material—the message you want to convey to the audience. One thing for you to remember is to

Table 13-4.—30-Second Selling Spot Announcement

PUBLIC AFFAIRS OFFICE	TELEPHONE: (904) 456-5070
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 OFFICIAL NEWS RELEASE (FOR RADIO) 	
PAGE 1 OF 1	
PROGRAM <u>76 WORDS</u>	RELEASE NO. <u>59-02</u>
AIR SHOW	November 9, 2002
30 SECONDS	FOR GENERAL RELEASE
	(DO NOT USE AFTER 11 A-M NOVEMBER 14)
 TWO SPECTACULAR AIR SHOWS ARE SCHEDULED THIS WEEKEND AT THE SAMARA NAVAL AIR STATION. THE EVENTS ARE BEING STAGED NOVEMBER 13TH AND 14TH AS A SALUTE TO AMERICA'S VETERANS. THE NAVY'S WORLD FAMOUS "BLUE ANGELS" WILL HEADLINE BOTH SHOWS. INTERESTING STATIC DISPLAYS AND EXCITING AERIAL ENTERTAINMENT ARE IN STORE. THAT'S SATURDAY AND SUNDAY AT THE NAVAL AIR STATION SAMARA. THE SHOW BEGINS BOTH DAYS AT NOON...AND ADMISSION IS FREE. COME EARLY AND SEE IT ALL. ###	

avoid cramming too many points into a short announcement. Keep it simple and stay with the subject.

For example, if you start off talking about travel as the attention-getter in a recruiting spot, do not drift off into education or some other subject in the same announcement. Another word of caution—do not promise the impossible. Be sincere and honest with your audience.

Action

“Buy U.S. Savings Bonds each payday.”

“Learn how you can travel the world with the U.S. Navy.”

These statements invite action and tell the listeners what they can do. The action step gives the listener a definite course to follow. The step should be forceful, combining invitation and demand, and it should compel the listener toward a positive action. Remember, the action step is designed to motivate the listener to buy, join, write or perform according to the action you have suggested in the message.

The success of any spot announcement as a selling device is measured by the listener’s response to the product advertised. Table 13-4 shows an example of a selling spot announcement.

Information Spot

The information spot is designed purely to inform. In this type of announcement, you are not trying to get the audience to do anything or to change attitudes. You simply want to give them information.

The information spot differs from the selling spot in purpose and structure. In writing the information

spot, you begin with **attention** and follow it with **appeal**. Because no response is desired from the audience, you have no need for an action step. Your job is to compose the message in a clear, concise form and to get the maximum amount of interesting information into the brief 10, 20, 30 and 60 seconds you may be allotted. Table 13-5 shows the information spot announcement.

SPOT WRITING TECHNIQUES

In writing either a selling or information spot announcement, you should remember the following four techniques that will pay dividends in quality:

1. **Plot the pitch carefully.** Before you put a word on paper, you have to know the type of audience you want to reach. If the audience is in the lower income bracket, gear the spot to the special needs and wants of this group. One approach could be the economic security angle; another is the “get-ahead-in-the-world” appeal. On the other hand, audiences in small rural towns might find the travel theme exciting and interesting. Spot writers must study prospective audiences if they are to be successful at communicating with them.

2. **Look for new target audiences.** Although the stress in writing may be about recruiting, you should be prepared to write spots that will sell the public on attending a command public visitation, a parade or a demonstration. These special events appeal to many audiences. Some spots might be directed toward fathers, children, teen-agers or even to mothers in the audience.

3. **Develop a direct, personal writing approach.** Even though the audience may consist of several thousand people, the copy is directed at one person.

Table 13-5.—30-Second Information Spot Announcement

U-S-O	November 9, 2002
30 SECONDS	FOR IMMEDIATE RELEASE
TWO SPECTACULAR AIR SHOWS ARE SCHEDULED THIS WEEKEND AT THE SAMARA NAVAL AIR STATION. THE EVENTS ARE BEING STAGED NOVEMBER 13TH AND 14TH AS A SALUTE TO AMERICA’S VETERANS. THE NAVY’S WORLD FAMOUS “BLUE ANGELS” WILL HEADLINE BOTH SHOWS. INTERESTING STATIC DISPLAYS AND EXCITING AERIAL ENTERTAINMENT ARE IN STORE. THAT’S SATURDAY AND SUNDAY AT THE NAVAL AIR STATION SAMARA. THE SHOW BEGINS BOTH DAYS AT NOON...AND ADMISSION IS FREE. COME EARLY AND SEE IT ALL.	
###	

Make that individual feel that the message is personal. Address the listener in terms of “you,” “you’ve,” “your” and “you’re.” Always refer to the listener in singular form and in a friendly manner.

4. **Select words carefully.** Write spots in the active voice with such positive and colorful verbs as follows: go, see, take, try, get, visit, ask, call, be and buy. Be conversational, but avoid slang. Keep your words simple, and do not try to impress the listener with an extensive vocabulary. Speak to the listener in the language that person knows. You also should avoid special military terms and abbreviations that are unfamiliar to the listener.

Format and Preparation

Whether you are writing a spot announcement for an NBS detachment or a local commercial station, you should adhere to the following general rules concerning format and preparation:

1. **Follow the appropriate style.** Write your spot following the style guide of the station. A station manager might reject your spot if it is not in the style his announcers are used to reading.

2. **Submit clean copy.** All announcements you submit to radio stations should be free of errors.

3. **Submit the proper number of copies.** Check to see how many copies of an announcement each station needs.

4. **Meet deadlines.** If a station manager asks you to have a spot at the station by a given time, do not miss the deadline. Your violating this rule is the best way for you to keep your copy from ever reaching the airwaves.

Timing the Spot

Timing is extremely important in spot writing. On commercial stations, you will be competing with other public service agencies for free airtime. Naturally, a station can allot only so much time for public service announcements.

If you use music or sound effects in your spot, you must remember to take these into consideration in your timing. A 30-second spot with 10 seconds of sound effects averages four to five lines of copy. A stopwatch will help you in timing spots.

Whenever you write a spot, it is best that you include a “kill date” and cutoff time so the station will know when to stop using it. A spot heard over and over, day after day for a long time, soon gets dull and

irritating to the listener. Also, if you have a spot telling people to visit your command on Sunday, it would certainly sound ridiculous to hear it the following Monday.

RADIO ANNOUNCING

LEARNING OBJECTIVE: *Identify the techniques used in radio announcing in terms of preparing and delivering copy, and the responsibilities of the announcer.*

Some Navy broadcasters forget that their primary responsibility is to communicate. It is essential that you, the announcer, know what the stories are about before you try to read them on the air. Announcers who only read words are doing exactly that—reading words and not communicating. Remember—it is not the listener’s responsibility to interpret what is read.

PREPARING RADIO COPY

There are certain aspects of preparing your radio copy that you must do before you go on the air. These include phrasing and marking your copy.

Phrasing

The bulk of the communication process centers on phrasing. People do not talk in words; they speak in phrases. The phrasing process is done during normal conversation, without thought. Beginning newscasters have some trouble transferring this natural process when delivering their copy. The best way to see if your broadcast copy is divided into phrases is to read the copy aloud. Identify whether the phrases answer one or more of the five Ws and H. If the phrase does not answer one of the five Ws and H, then it is not a complete thought.

Marking Copy

Broadcasters use specific oral punctuation marks to divide their copy into phrases. There is disparity between written punctuation and oral punctuation. English teachers teach written punctuation and follow strict rules of usage. Oral punctuation adds accent and tells the announcer when to breath, without disrupting the natural flow, phrasing and the importance of a sentence.

As stated earlier, most phrasing problems occur because announcers do not understand what they are reading. They are not breathing at the right time or not

Tsble 13-6.—Radio Copy with Oral Punctuation Marks

WASHINGTON INTELLIGENCE SOURCES SAID TODAY THAT TUVALU NOW
LEADS THE WORLD IN ESPIONAGE ACTIVITIES.//ACCORDING TO AN
UNIDENTIFIED STATE DEPARTMENT OFFICIAL,/THE SMALL SOUTH
/
PACIFIC ISLAND NATION,/LEAD BY PRIME MINISTER/JEFFREY
/
TINAI (TIN-EYE),/IS BEHIND SEVERAL RECENT INTELLIGENCE-
GATHERING ACTIVITIES/AT NAVY BASES IN THE FLORIDA
PANHANDLE.//

marking their copy properly. Most announcers adapt easily to the following system:

/The single slash mark means you are to pause and take a short breath.

Use the single slash as an oral comma, just a short pause in the flow of words from your mouth—not a complete stop like a period.

//The double slash mark means you are to stop reading and take a deep breath.

The double slash is an oral period. This is a big stop and is the end of a sentence. This is the time to take a good breath for the next sentence.

///The triple slash mark means you are to pause for emphasis, but do not breathe.

This mark has nothing to do with breathing. It is just a sign to you, and it means pause for emphasis. You might use it for difficult names, quotes or a number in the copy you know you want to emphasize.

An example of radio copy with oral punctuation marks is shown in table 13-6.

When you are marking copy, make sure you do not change the meaning or context of the story. However, most stories may be marked in more than one way without changing their meaning. How you mark them will depend on your personal style.

DELIVERY

The way you speak or imply the meaning of a word may change the whole context of that story. You, the announcer, are the most important element in the information process. The fewer barriers introduced in transmitting the information, the clearer the

information is received and understood by the receiver or listener.

Variety

The announcer should have a voice that conforms easily to the spirit and intention of the assignment. No matter what the subject or script, the announcer must inform the listeners of his sincere belief in the content and the natural excitement (vitality) of the occasion. All meanings should be clear. Being bored should not detract from natural vitality. All the slight changes in mood and feeling, directed by the words and situation, have to occur as effortlessly as they do in speaking with a close friend. Discreet changes in the voice appear naturally when they are truly felt by the announcer.

The human voice is able to reflect all conceivable traces of mood and meaning. Subtle natural changes in vocal pitch, time, quality and force make this possible. Speech without thoughtful distinction tells only a shade of the full mood and meaning and may express monotony or give inaccurate information to the listener. The announcer should feel the mood and know word meaning if he is to show sincerity in his voice.

Articulation

In conversation, we naturally drop sounds and slur words. The reason for working on articulation is to make the sounds of words clear, so that the announcer may be understood.

Clean articulation is the most difficult aspect of voice and diction. Its intent is not to eliminate accents and regionalities, but to enable the announcer to communicate with everyone.

The following are a few drills and methods for dealing with some common articulation problems.

MUSHY SOUNDS.—If your speech sounds sloppy, chances are, you are not opening your mouth enough. Have another person watch you read or use a mirror. Notice if your lower jaw moves. If it does not, this could be the cause of the problem. Announcers who tuck their chin into their chest to make their voice deeper are creating articulation problems. Read your copy overemphasizing the lip, tongue and chin movement required to make each sound, then reread the copy normally. Keep your script at eye level and keep it up while reading so you cannot tuck in your chin.

The same theory applies to the announcer who does not move his lips. Read the copy, overemphasizing each lip movement, then read your copy again normally.

Another solution for mushy sounds is the “pencil method.” Place a pencil sideways to the back of your mouth and firmly between your teeth. Take your script and slowly read it through, articulating all the words. Then reread your script again normally. This will help you correct any mushy sounds.

DROPPING SOUNDS.—The ends and the middle sounds of words are commonly eliminated in speech. You should pronounce carefully each syllable of each word, overstating each sound. Then say the word normally.

Examples: stand-ing/standing (not “standin”)
work-ing/working (not “workin”)
help-d/helped (not “help”)
mix-ed/mixed (not “mix”)
spa-ed/sped (not “speh”)
tah-t/tot (not “tah”)
nah-t/not (not “nod”)
mos-t/most (not “mos”)
de-vel-op-ment/development (not “develoment”)
gov-ern-ment/government (not “govment” or “government”)
syl-a-ble/syllable (not “sylble”)

NEW ENGLAND “R.”—Announcers with this problem change the “R” sound in “car” to an “ah” sound (cah). The “ah” sound is easier to say since it does not involve moving the lips or the tongue. Read

several words with “Rs” in them, being careful to hit the “AH UR” sound. Try the following example:

Example: Parker parked the car outside the card store.

SOUTHERN VOWEL DISTORTIONS.—Some people from the South have a drawl that makes their speech difficult to understand. They hold the vowel (a, e, i, o, u) sound so long that it slurs into the next sound. For example, “I’m” becomes “Ahhh’m.”

To correct this, clip the sound and make it shorter. Run through the following examples, carefully articulating each sound.

Examples: just (not jist) get (not git)

for (not “fer”: replace the word on your copy with the word four or the number 4)

to (not ta: replace the word on your copy with the word “two”)

style (not “stahl”: I’m going to get just two styles of paper instead of getting the four styles you asked for.)

THE “S” SOUND.—The “S” sound is the most difficult sound to correct. The general rule is: do not mess with an “S.” Take the microphone and place it out of the “S” air zone, so when you talk, you are talking across the microphone instead of directly into it.

Rate and Transitions

Changes in the tempo (rate/speed) and the use of pauses (transitions) while speaking are essential to understanding. Normal speech rate varies from 80 to 175 words per minute.

A steady rate of speed will produce monotony. In general, changes of rate help reflect the weight of the issue. Important information is slowed; less important topics may be increased in speed.

As stated earlier, the oral punctuation mark gives the announcer an opportunity to pause. The pause makes the division of thoughts and the segmenting of those thoughts possible. Without the vocal pause, the meaning of the topic would be haphazard and hard, if not impossible, to follow. The oral pause also gives the announcer time to restore his breath supply naturally.

Authority

Announcers, and in particular news people, require authority in their voices. It is that special

something that tells the listener, “What I have to say is important.” Newscasters either have it (authority) or they do not—there is no substitute. In some cases, because of a naturally higher pitch, women newscasters may suffer from authority problems more than men, but it is not a problem unique to women.

The following techniques may help if you are lacking authority in your voice:

- **Take charge.** You must have a thorough understanding of your copy. It is up to the newscaster to tell his audience what it needs to know. You must adopt an attitude of, “This is important—listen to me!”
- **Add volume.** Intensifying your vocal tone to establish a sense of authority may be effective. Try this by standing about 10 feet from a wall. Deliver your copy loud enough so that your voice hits the wall and is reflected back. You do not have to yell, but you should be loud enough to be heard clearly 10 feet away. This is called vocal projection.
- **Monitor your volume.** Have another person stand across the room from you as you read the copy. Every time your volume drops, have that person tell you to speak louder.

Stumbling

All newscasters occasionally stumble over a word, and they should not worry about it as long as it is only occasional. When you experience a lot of stumbles, the cause is usually the brain getting ahead of the mouth. Here are a few solutions:

- **Concentrate on what you are reading.** Your mind should be on your copy and nothing else. Avoid distractions.
- **Use the index card technique.** If you are a speed reader or read unusually fast, place a 5- by 7-inch index card on the line you are reading. As you come to the end of that line, move the card to the next line. This technique will slow you down enough so you do not over-read and it will help you focus your attention on the line you are reading.
- **Use parentheses to mark any phrases that give you trouble.** Do not mark individual words—only mark the phrase.
- **Preread your copy at least twice for familiarization.** If your copy surprises you

while you are reading it on the air, you are not ready to read. You should be able to tell, in rough form, what the stories are about without looking at the copy.

- **Avoid backtracking to correct a stumble.** Keep going and do not call attention to the mistake. Some people worry so much when they make a mistake that they make additional mistakes. Once a mistake is made, **FORGET IT.** Concentrate on what is coming, not what is gone. Your audience does not expect perfection. (One exception to this rule is if the stumble changes a fact in a story. If this happens, take a second or two to regroup, then correct the error. You also can correct the error after a spot break, if time allows.)
- **Have your eyes checked by a doctor.** Unfortunately, eyesight deteriorates with age and even the best announcers cannot read words they cannot see.

Speedy Delivery

Speaking too fast is a common problem for beginning announcers. As the announcer, you can correct this problem by understanding that not everyone is able to think as fast as you can talk. If the listener cannot understand you because you are speaking too fast, then you are wasting the listener’s and your own time.

The following are a few simple tricks that will help you slow your delivery:

- **Write the words *SLOW DOWN* all over the margins of your copy in a bright-colored ink.** This will remind you throughout the newscast to keep your speed under control.
- **Use the three-step reading system.** Read the copy through once, as fast as possible. Then read it as slowly as possible, over-articulating and reading one word at a time. Finally, read the copy somewhere between the two previous speeds. During the third reading, make sure you are in the presence of someone who can tell you to slow down when you start to pick up speed.
- **Follow the “five-minute rule.”** The average rate of delivery is 15 lines per minute. The actual rate should be somewhere between 14-16 lines per minute. Limit yourself to 60 lines of copy for a five-minute newscast. Make sure you finish at exactly the five-minute mark. The only way to

reach the time mark and not have dead air is to slow down.

- **Use the eraser technique.** Place a medium-sized art eraser between your front teeth. Try to read the copy while holding the eraser firmly in place by biting down. You must articulate and be able to be understood while you are reading. It is almost impossible to talk fast and still be understood while you are holding the eraser.
- **Mark your copy for breathing points.** Breathe wherever you see a mark.

ANNOUNCER RESPONSIBILITIES

As you can tell, radio announcing is hard work. The listening audience may associate the word *glamorous* with the broadcast industry, but the fact is—radio (like television) is an exacting business and announcing emphasizes professionalism.

For every announcer who has made it to the “big time” and who has become a celebrity in the civilian world, there are 100 good announcers who, in addition to their on-air time, perform many other station duties. There are announcers in a lot of small stations who work the audio consoles, write last-minute commercials, rewrite news copy, check equipment and do anything else required of them to make the station work well. This is exactly what will be asked of you as a Navy broadcaster—you must be a **generalist**.

Furthermore, during your on-air experiences, you will realize that an isolated slip or flubbed line is almost inevitable. This is true even for the veteran announcer. However, if you make too many errors, you will be looking for a new job. The key to success is experience, and a good announcer drills diligently in the never-ending quest for perfection.

Required Qualities

The qualities usually considered necessary in a professional radio announcer are a good voice, little or no regional accent, clear diction, and accurate pronunciation. Quite often, your voice affects the audience’s opinions about programs.

A resonant voice, the best diction, and even the best pronunciation will not help the announcer who mechanically reads lines and fails to project a feeling of sincerity. In effect, the announcer must have a good radio personality and make his voice reflect such.

Adaptability

Your personality is reflected in your voice. If you are not genuine, the listener will take note quickly. Changes throughout the program day make it essential that an announcer be capable of changing his delivery to fit the content and mood of the particular program.

No matter the type of program or its theme, most listeners enjoy hearing a voice that offers friendliness, naturalness, sincerity, integrity and vitality. Announcers, of course, usually seek to work in an area where they perform best. Some announcers are best at news, some at country and western music, some at rock ‘n’ roll and so on. In short, you must be like a chameleon. You must be able to conform to the many variations of style that the average broadcast day will demand of you. You should set high standards for voice control, diction and pronunciation; then strive constantly to live up to those standards. This is a never-ending, ever-learning process. However, the satisfaction you will get from being an effective announcer is well worth the effort.

PRODUCING A RADIO FEATURE

LEARNING OBJECTIVE: *Identify the elements needed to produce a radio feature.*

In radio, you are primarily responsible for all stages of feature production. In commercial radio, particularly in smaller markets, the DJs of the station are responsible for producing features. The same thing applies at NMC broadcast detachments. Once you are assigned a production, the entire process, from researching the subject to putting it on tape, belongs to you.

In this section, “radio feature” and “audio production” are used interchangeably.

SELECTING MUSIC

Music is used to set the mood for a production. It can create a feeling of excitement, tranquility, suspense or sadness. The following four types of music can be used in audio production:

- Theme
- Background
- Bridge
- Fill

Theme

If you are doing a series of spots on a particular subject or using a particular character, theme music will lend identification to that subject or character. Avoid using familiar songs as themes; for example, “Gonna Fly Now” from the Rocky movie series or the theme from a popular television show. These selections tend to distract the listener and ultimately lessen the effect of the message.

Background

Background music helps set the mood of the feature production and it increases audience appeal. A voice-only production can be very boring, especially if it is just one voice. For example, a few strains of dramatic fanfare might heighten listener anticipation of a story climax. Conversely, you could use light, melodic music to support a comical subject. There is instrumental music to fit almost any mood. It is just a matter of listening to the selection, perceiving the emotion or mental image it creates and matching the appropriate mood to your subject.

When you are selecting background music, for instrumentals are preferred over music with vocals. Vocal songs tend to distract the listener from the message of the production. Vocal music may be used, but only if it contributes to the message. When vocals are used, level balance becomes critical so that the music does not override the message.

Background music should be unrecognizable and match the subject. By adding the right background music, you add to the aesthetic appeal of the feature.

Bridge

Bridge music connects or “bridges” two ideas or thoughts. Bridge music, also called transitional music, was used in radio theater to change the scene. A short instrumental fanfare can signal a change in topics or, a new scene can be introduced with a short musical theme that suggests a particular location.

Fill

Fill music is often called “pad” music and is usually an unrecognizable instrumental song. If your feature production is required to be a certain length, you can use fill music to eat up time at the end. This also allows the person airing the production an

opportunity to transition to the next program element gracefully with less chance of lapsing into dead air.

SELECTING SOUND EFFECTS

The use of sound and sound effects works much the same way as music. The purpose of sound effects is to enhance the spoken word.

Creative use of sound can help develop a vivid picture in the mind of the listener. The success of an audio production often depends on the mental picture conjured up by different sound effects. Good examples are the spots produced for the Radio Ad Bureau promoting radio advertising. By using sound effects, the producer created a visual picture in the listener’s mind by doing such things as draining Lake Michigan, filling it with chocolate, and topping it off with a 750-foot mountain of whipped cream and a 10-ton maraschino cherry. This versatility is available for any radio production and is limited only by your imagination and ability to locate or create sound effects.

The following are the three main types of sound in audio production:

- Real
- Simulated
- Prerecorded

Real

Real sound effects are produced in the studio using the actual source, such as papers shuffling or scissors cutting cloth. You are limited to the availability of the particular item to make the desired sound.

Simulated

Simulated sound effects are those that do not recreate reality, but merely suggest it. Crinkling cellophane can suggest a campfire, and running your thumb across the teeth of a comb can suggest casting a fishing line.

Prerecorded

Prerecorded sound effects are those available on tape or compact disc (CD). The two types of these are the ones that create a sound picture, such as a city street or factory, and the ones that create individual sounds, such as footsteps or the opening of a door. When using prerecorded sound effects, you are limited to the

recordings available in the tape or CD library of your station.

USE OF THE VOICE

The voice is the essence of most radio productions, because it conveys the message. Each announcer interprets copy according to his style of delivery and the type of delivery needed to communicate the message effectively. Voice characterizations may be used if it is appropriate to the production, but make sure the characterization is realistic and portrayed well.

BASIC PRODUCTION CONCEPTS

There are many ways to put an audio production together. The technique you decide on will depend upon the complexity of the production, the equipment available to you and your ability to put it all together.

Although there are many variations to the process, audio productions usually are formed around the following four basic concepts:

- Beginning to end
- Prerecorded voice
- Prerecorded music and sound effects
- Segmenting

Beginning to End

When you are using this method, everything is done nonstop, mixing all the elements onto tape. This means recording the narration, background music, and sound effects at one time, as they are called for in the script. Because this method requires many rehearsals and considerable production skill, it is not recommended for the inexperienced broadcaster.

Prerecorded Voice

If you choose the prerecorded voice method, put one element on an audiotape cartridge (known in the industry as a “cart”) and mix the other elements in as you go. This method is best used for a production that requires only a few supportive elements. The prerecorded element is the narration, allowing you to concentrate on mixing the other effects as they are needed. You can add other elements later.

A disadvantage to this method is that it limits the announcer’s flexibility to interpret the script as it relates to the accompanying music or effects.

Therefore, prerecorded voice is not the recommended method of production. It is used sparingly and, generally, only for “straight” copy requiring little interpretation.

Prerecorded Music and Sound Effects

Although time consuming, the prerecorded music and sound effects method works best in a complicated production, especially if the producer is inexperienced. By placing all the elements onto cartridges and then mixing them on audio tape, you can “build” sound elements by layering one element on another using multiple recordings. There are many possible combinations of cartridge-to-tape, CD-to-tape, or computer hard drive-to-tape. This method also allows the announcer to adapt the vocal mood to the mood created by the other elements.

Segmenting

The segmenting method allows the broadcaster to take manageable portions of the production and produce them using the beginning-to-end method. These separate segments then can be edited together to form a complete production. This method is good for very long and complicated productions but it requires both editing skill and production time. For shorter productions, the prerecorded music and sound effects method is recommended.

RECORDER AND REPRODUCER SETUP

Before beginning production, you should make sure all the recorders and reproducers have calibrated levels. Commonly, a 1000-cycle tone is used to set all the VU (volume-units) meters (both in record and reproduce modes) to 100 percent. The tone serves as a reference point for aligning the different recorders you may be using. Most studios have the tone hard-wired into the control board or the control room patch panel. Other production studios have the tone prerecorded on a cartridge.

SPECIAL EFFECTS

In audio production, there are times when an ordinary sound is not enough to convey the message or the intent of the script. Accordingly, you may enhance or change a sound electronically to produce an entirely different effect.

The five most commonly used special effects are as follows:

- Filtering
- Equalization
- Reverb and echo
- Phasing

All of the audio effects covered in this section are produced electronically using studio equipment (except phasing).

Filtering

A filter is an electronic circuit designed to pass only selected frequencies and to eliminate all others. An audio signal filtering device is often built into the control board or wired into the studio patch panel. Using filters, you can reduce the lows and enhance the highs of a microphone signal to simulate a voice coming from a telephone or radio speaker. Filtering is most commonly used during the recording process.

Equalization

Equalization is similar to, but has more exacting results than, filtering. An equalizer is a piece of equipment that alters the frequency response of an audio signal, allowing for the modification of specific portions of the overall signal. In other words, whereas equalization does not totally eliminate frequencies—it does vary their playback level. You can use an equalizer to match audio originating in-studio with on-location audio by adjusting specific audio frequencies.

Another common use of equalization is to correct acoustical problems that occur at remote recording locations.

Reverb and Echo

The terms *reverb* and *echo* are often used interchangeably, but are two distinctly different sounds. Echo is defined as the repetition of sound. Reverb is the persistence of sound until it fades away and it is usually achieved by using a cartridge machine.

To get either effect, just open up that particular pot (potentiometer) of the recorder while you are recording on that same machine. The more you open the pot, the greater the effect. To achieve the echo effect on a tape machine, you must set the machine function switches to both playback and record. This is

not necessary when using a cartridge machine because it only has a record switch. Of the two effects, reverb can be distorted more easily. Both effects can be overdone to the point that the message cannot be understood. Therefore, you should use these effects with caution.

Phasing

Phasing is that spacey, wavelike sound you sometimes hear on the voice for rock concert promotions. This effect adds depth to the sound and is usually used to enhance the voice. It is achieved when two identical audio sources are played back at slightly different start times.

To get a better idea of what phasing is, try it out for yourself. First, record a piece of copy, and then make an identical copy of it on another tape. Record both copies onto a third tape, starting the first two a split second apart. If you start them too far apart, you will have an echo. If you start them too close together, the phase effect will not be pronounced enough.

Digital audio tape machines and computer software programs have made it much easier to produce and edit audio cuts. With this technology, you can cut and splice segments, taking out errors and pauses, or inserting segments that you have already recorded. By experimenting with the equipment you might even create an audio effect that is unique. Let your creativity guide you.

Do not overuse studio effects; they can become tiring to the ear and may cover the intended message of the production. An advantage of radio is that it lends itself to the audience's imagination better than television does. Through the clever use of studio effects and radio sound, you can exploit this advantage to take your listener on a trip to Hawaii while he never leaves his living room.

ORGANIZATION

Organization is the key to making the most of production time. Think the whole process through before you walk into the studio. This will reduce frustration. If you are not prepared and things do not work the way you want them to, frustration sets in and the production becomes that much more difficult.

QUALITY CONTROL

When completed, the production has made a drastic transformation from a producer's imagination,

to a script, and finally to a recorded tape or cartridge. Throughout this gradual change, certain internal checks were applied to make a high-quality product according to aesthetical and technical standards commonly recognized by broadcasters and the specific requirements of the local station.

Quality control is the responsibility of every broadcaster and will mean the success or failure of the objectives of the production.

PRODUCTION PHASES

The internal checks and balances previously mentioned come during the following three phases of the development of the production:

- Preproduction
- Production
- Postproduction

Preproduction

Preproduction is the gathering of all the supporting elements called for in the script and auditioning specific music and sound effect cuts to make sure they are appropriate. Many times, what the scriptwriter envisioned on paper turns out to be inappropriate in the audio production. The music (tempo, key and melody theme) should convey to the listener a mood that supports and enhances the objective of the production. Your ear is the best judge of whether a piece is aesthetically correct for the production, and it should be obvious if there is a mood mismatch. This is a good time to audition any background music that contains vocals.

There is no absolute rule against using vocal songs as long as it is important to the message and the levels (narration and music) are set correctly. The background music, with or without vocals, is acceptable only if it remains **in the background**. It is easy for the music to end up overpowering the message. Your using vocals for background music means you will have to make a close check on the level balance during the production and postproduction phases.

Check all supportive elements to make sure they meet technical broadcast standards. The script may call for a sound effect that is only available on an old tape that is distorted when played. In that case, find a similar effect on a newer, cleaner tape, computer or CD, or create the effect yourself. If actualities from

other sources are used (interviews, news inserts, etc.), they also must be produced cleanly and be understood easily.

Review the script and note any unfamiliar words or names. Look up the pronunciations of any that may be a problem for you. If another voice is called for, make arrangements for someone else to be in the studio at the appointed production date and time and have copies of the script prepared for him.

Furthermore, before you begin the production phase, know and understand the format requirements for your product. In other words, is the final package to be on audio tape, computer hard drive, or CD? How long will the spot run on-air? What is the timing requirement? When these technical questions have been answered, you are ready to go into the studio.

Production

Once in the studio, make sure all the required equipment is in good working order. Follow the locally established procedures for setting up and checking the audio console and equipment needed for your production. You should erase any production tapes you use. Using tapes that still have audio from other productions can make tape cueing difficult and may lead to the unintentional airing of unwanted audio. You should label all tapes used in the production process so you can easily find the element you need.

Follow the approved script. Unless you are the writer, do not make substantial changes to the content without first checking with the author. There may be a good reason for the script appearing as it does.

Monitor the record and playback levels constantly during the mixing process. When putting several elements together, listen closely in the headphones to the level balance. Remember, do not let supporting sound override primary audio. Check the master tape recording level to make sure its average peaks are between 80 and 100 percent on the recorder VU meter. If you thoroughly complete the preproduction organization, it will be easy for you to follow the script during the production phase.

Postproduction

You should listen to the finished product and make sure the production accomplishes its intended purpose. Listen for quality checks you may have missed in earlier development. Pay particular attention to the audio levels and quality of the final recording. If the

spot or feature is not satisfactory, mix it again and correct the problem. Check to be sure the production meets the allotted time requirement.

When the final product passes all the quality control checks, label it according to local procedure and turn it over to your supervisor.

RADIO CONTROL ROOM EQUIPMENT

LEARNING OBJECTIVE: *Identify the equipment in a radio control room.*

Radio broadcasters find out early in their careers that broadcasting involves more than just announcing. Broadcasters working in the radio medium also must be proficient at operating radio control room equipment. In this section, we will cover the various pieces of equipment that make up a radio control room.

AUDIO CONSOLE

Even though all audio consoles are operated in the same basic manner and perform the same primary functions, their capabilities are not always the same. Differences among consoles are obvious from one model to the next, but even consoles of the same make and model often are locally engineered to perform various additional functions.

Before you operate your console for the first time, take the time to learn its various intricacies. Figure 13-2 shows a typical audio console.

The audio console connects the microphones, cartridge machines, reel-to-reel tape recorders/reproducers, remote lines, CD players and other audio equipment into one system.

In the following text we describe the controls on the audio console shown in figure 13-2:

- **Microphone selector buttons.** There are two identical controls for the operation of microphones on the audio console (channels one and two).
- **CD selector buttons.** Channels three and four control CD players one and two. Because everything is read from left to right, CD one is selected by depressing selector button number one on channel three. Selector button number two on channel four operates CD two.
- **Digital audio tape (DAT) selector buttons.** Tape one is programmed through selector button number one on channel five and tape two through selector button number two on channel six.
- **Cartridge selector buttons.** Three cartridge machines are programmed through channels seven, eight and nine.
- **AFRTS/network selector buttons.** Channel 10 receives audio originating from the AFRTS Broadcast Center (BC) and major radio networks.

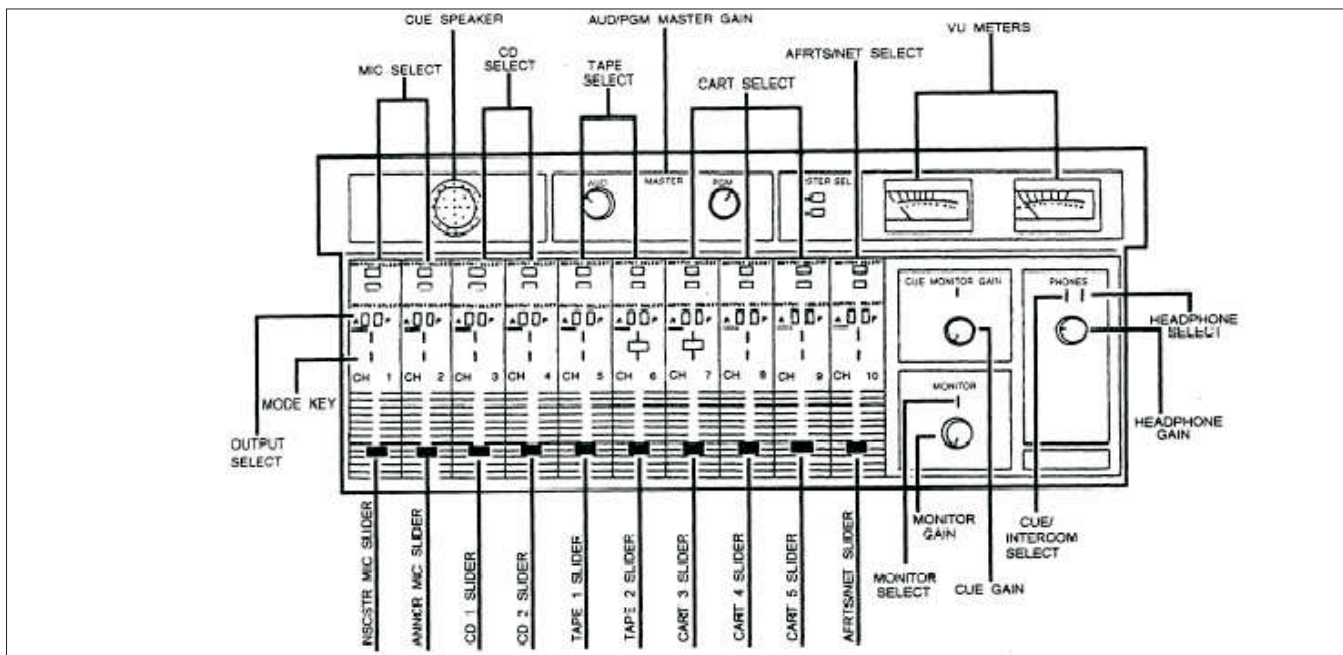


Figure 13-2.—Audio console.

- **Output selector buttons.** All 10 channels on this audio console have the following two output options: audition and program.
- **Mode keys.** This key has three positions. When a sound source is not being used, the key is maintained in the neutral (off) position. Pushing the key up into the audition/program bus places your sound source on the air. Moving the key into the cue position allows you to hear the source only in the studio and not on the air.
- **Cue/intercom selector.** This selector allows you to cue a sound source over the cue speaker or permits broadcasters to communicate between studios.
- **Cue gain control.** This control regulates the volume of the cue speaker.
- **Headphone selector.** This control is used to select the audio source that is heard through the headphones. The three positions are audition, program and cue.
- **Headphone gain control.** The headphone gain control is located immediately below the headphone selector. Set this level to hear your program sound source clearly, but not at a point where sounds within the studio are drowned out.
- **Monitor selector switch.** The monitor selector switch is used to select which audio source is heard on the “air” monitor speakers located in the studio. The three positions are audition, program and air.
- **Monitor gain control.** This control regulates the volume of the monitor speakers.
- **Audition/program master gain controls. DO NOT ADJUST THESE CONTROLS!** They control the output of the entire audio console and are set by the station engineers.
- **VU meters.** The VU meters give the only visual reference to sound loudness. As described previously, the correct meter readings are achieved when average music and voice peaks fall between 80 and 100 percent. Allowing the meter to run constantly in the red, known as running “hot,” can create sound distortion and is never acceptable.

SLIDERS

Sound sources connected to your audio console are controlled by the use of pots, called sliders. The output selected above the sliders gives you the option of listening to the sound source in audition or program mode. Program is used **only** when a sound source is aired. Audition allows you to listen to a sound source to make sure it is properly cued and the appropriate sound levels are set on the VU meter.

AUDIO APE CARTRIDGE, CARTRIDGE MACHINES AND COMPUTER SYSTEMS

You will use audio tape cartridges, cartridge machines and computer software programs (fig. 13-3) for most of the spot announcements of your station.



Figure 13-3. Radio computer software programs.

Cartridges are normally recorded in lengths from 10 seconds to five minutes .

Before you air a spot announcement on cartridge, perform the following steps:

1. Make sure the cartridge is properly seated in the machine.
2. Set the output selector to audition.
3. Start the cartridge and set the output level (using the appropriate slider) on the audition VU meter.
4. Allow the cartridge to play through until it recues.
5. Once the cartridge recues, place the output selector in the program mode. The spot announcement on cartridge is now ready to air.

A digital audio tape machine and digital cart machine are shown in figure 13-4.

CD PLAYER

You will use CD players for production purposes. Commercially, the CD and CD player have replaced records and turntables. This is because CDs are easier to store and their sound quality is superior.

The CD is a 4 3/4-inch plastic platter that is scanned by a laser beam positioned above the disc. Unlike records, CDs do not skip and its 500th play will sound as flawless as its first. However, you should handle a CD only around its edges and store it in its protective case (jewel box). A CD and CD player are shown in figure 13-5.

DIGITAL TAPE RECORDERS/REPRODUCERS

Digital audio tape players and digital cart machines have made producing audio cuts and programs much easier and less time consuming than in past years. Depending on how large your broadcast detachment or SITE radio station is, the more modern radio broadcast equipment will be installed in your radio studios. Not all radio outlets have the latest in broadcast technology, but all outlets do have equipment that allows them to produce quality radio programs, local newscasts and local spot announcements. Mini-disk cart machines, digital audio tape and computers have given radio outlets an unlimited source of audio production materials, capable of a myriad of broadcast techniques.



Figure 13-4.—Digital audio cassette and digicart player.



Figure 13-5.—Compact disc (CD) player.

MICROPHONES

Setting up your studio microphones before airtime is a relatively simple task. Sit down at the console in the same position you will use when producing or working on air. Place the microphone 4 to 6 inches from your mouth at a 45-degree angle. It is possible to set a microphone level by placing the output select in the audition mode and setting the level on the VU meter by using the proper slider. Once you do this, place the output select back into the program mode. Repeat this procedure for the newscaster's microphone.

RADIO CONTROL ROOM HINTS

Exactly how you get the source “on the air” is simply a matter of choice and experience. Each operator develops his own method of preparing for and actually airing a sound source, and each method has its pros and cons that you should take into account.

The following are some radio control room hints for you to consider.

- Be certain the correct source is aired at the specified time.
- Monitor the VU meter while the source is playing and adjust the volume, if necessary, to maintain the proper VU level.
- If you play two or more sources at the same time, make sure the primary source does not drown out the secondary source(s). You can do this by running the primary source at about 80 percent and the secondary source(s) at about 50 percent initially, adjusting for a final overall output of between 80 and 100 percent.
- If the sound source goes off the air unexpectedly and cannot be restored within a reasonable

amount of time (say within 5 seconds), fill the time according to your station's emergency procedures.

- **Practice!** To understand your radio control room equipment fully, you will need hands-on experience. The more time you spend practicing studio operations, the sharper your mechanical skills will be.

EDITING AUDIOTAPE

LEARNING OBJECTIVE: *Identify the method used to edit audiotape.*

One of the main advantages of working with digital audio is that you can edit program material easily. You can remove mistakes and unwanted material from your program to form a cohesive, polished product. The editing process also will allow you to adjust the run time of a program by shortening or lengthening a taped segment. In addition, you may add taped material to another taped program through the editing process.

EDITING PROCESS

The most common method of editing audiotape is for the unwanted material to be cut out. Although this method has been in place since the introduction of magnetic recording tape many years ago, digital audio technology has simplified the process considerably. As mentioned earlier, depending on which broadcast equipment your radio outlet is supplied with, editing your radio product will require very little training.

RADIO PROGRAM MATERIALS

LEARNING OBJECTIVE: *Identify the radio program materials available from AFRTS.*

This section briefly describes the various radio program materials available from AFRTS-BC. It is important for you to know the program materials available from the Broadcast Center since you will rely on them for most of your day-to-day radio programming needs. If you need more detailed information, see the *American Forces Radio and Television Service (AFRTS) Program Materials*, DoD Directive 5120.20-R, Appendix F.

In the mid-1990s, AFRTS moved into the mainstream of modern technology by using compressed video and audio signals that are

transmitted to broadcast outlets around the world via satellite. This technology allows radio outlets to receive as many as 12 different live radio feeds and formats, from hot country and adult contemporary to talk radio and live sports events. These feeds allow program directors to compile their broadcast schedules with a good mix of music formats that support their local live blocks. Depending on the number of radio stations at your command, you will be able to provide your radio audience a wide-range of current music and information, as well as local command information spots and local newscasts.

Navy ships that are deploying receive radio program packages from the Broadcast Center to assist them with their programming. Some ships, however, are capable of receiving the AFRTS satellite feed, which gives the ship the same broadcast capabilities as overseas radio outlets.

In addition, the Navy operates its own Direct-to-Sailor (DTS) satellite system that broadcasts radio, television and information of a more Navywide interest 24 hours a day, 365 days a year.

DTS came into being in 1998 and has proved to be an immediate success throughout the fleet. Navy ships at sea that are capable of receiving DTS, have the benefit of receiving live radio and television feeds, which was simply unheard of a few years ago. This means ships at sea can watch and/or listen to events like the Super Bowl, World Series, the Olympics and major news evolutions as they are happening throughout the world.

HANDLING INCOMING SHIPMENTS

When a shipment of radio program materials arrives at your station, make sure you take the following actions:

- Inspect the exterior of the packages. Make sure the boxes are not torn, ripped, crushed or otherwise damaged.
- Double-check the address to make sure your station is entitled to receive the shipment.
- Carefully open the boxes or containers.
- Locate the packing list and inventory the contents of the packages against the packing list.
- Check each tape or CD label. Make sure that they match the packing list.
- Inspect each item for damage. Look for scratches and defects.
- Note all shortcomings on the packing list.
- Sort tapes and CDs according to the types of units (RP, RU, etc.).
- File the tapes and CDs according to local guidance.

GENERAL HANDLING GUIDELINES

All tapes and CDs must be handled with care. Careless practices, such as leaving CDs on a table without protecting them, result in scratches or chips. A tape left in the production studio unmarked and out of the box is an invitation for someone to erase it. Therefore, tapes and CDs must be cared for according to standard industry techniques and practices.

Cleanliness is paramount. Areas where tapes and CDs are used and stored should be free of dust, high humidity and excessive heat. Keep your hands clean and avoid touching the surfaces of tapes and CDs with your fingers. As mentioned earlier, you should always store CDs in their protective jewel boxes.

CHAPTER 14

TELEVISION

Television is the offspring of three media — the theater, film and radio. Since 1950, television has progressed from a mere novelty, to arguably the most powerful information and entertainment medium.

The technological advancements of television in this short time frame are quite remarkable. Color television sets virtually replaced black-and-white models, cable television eliminated the need for viewers to tune in broadcast channels with “rabbit ear” antennas, and videotape, videotape machines and character generators (CGs) signaled the end of 16mm television film and cumbersome production equipment and methods.

The military services recognized the potential of this new form of communication and started American Forces Television at Limestone Air Force Base, Maine, in 1953. The success of this experimental station convinced DoD officials that overseas television stations were feasible. One year later, the DoD officially recognized the television mission and combined it with American Forces Radio to form the American Forces Radio and Television Service (AFRTS). In 1976, the CNO established the Navy Broadcasting Service (NBS), now the Naval Media Center Broadcasting Department (NMC), to manage AFRTS outlets within the DON.

Most likely, your initial television broadcasting experience will be with an NMC detachment overseas or aboard a ship equipped with a Shipboard Information, Training and Entertainment (SITE) system. For these reasons, you are responsible for knowing the basics of this fascinating but demanding medium.

HOW TELEVISION WORKS

LEARNING OBJECTIVE: *Identify how the television medium works.*

Television is the process of converting reflected light rays from a subject or scene into electrical impulses and reproducing these impulses at a distant receiver.

The television camera picks up reflections of light from the scene, while the microphone picks up sound. The camera changes the light reflections into electrical impulses, and at the same time, the microphone changes the sound into electrical impulses. These impulses are sent to the transmitter or are recorded on videotape.

To be viewed, the signal from the transmitter is received by the viewer’s television set, or the recording is played back — either to the transmitter or directly to a receiver. At the receiver, the picture and sound signals are isolated and sent through separate picture and sound circuits. Electronic components within your television set change these signals back to video on the cathode-ray picture tube and audio on the television speaker.

THE TELEVISION CAMERA

LEARNING OBJECTIVE: *Recognize the basic operation, electronic characteristics and main types of television cameras.*

The television camera is the heart of the television system. It records the varying amounts of light reflected from objects in the televised scene. This amount of light varies according to the lighting, color or shade of the object.

Figure 14-1 shows a banner with the word *NAVY* printed in black on a white background. The border around the banner is gray. When light hits the banner, it reflects from the three different shades in different amounts. The white background reflects the most light, the gray reflects less, and the word *NAVY* reflects very little light. From this you can see that a scene made up of different shades or colors reflects different amounts of light. The television camera takes these various levels of light reflection and changes them into electrical impulses of varying strength.

A television camera is optically similar to a movie camera, except it does not use film. Instead, light reflections from the scene are focused by a lens and pass through the face of the photoelectric transducer (also called a pickup tube) of the camera. The pickup tube does the job of film in a camera. Its surface is

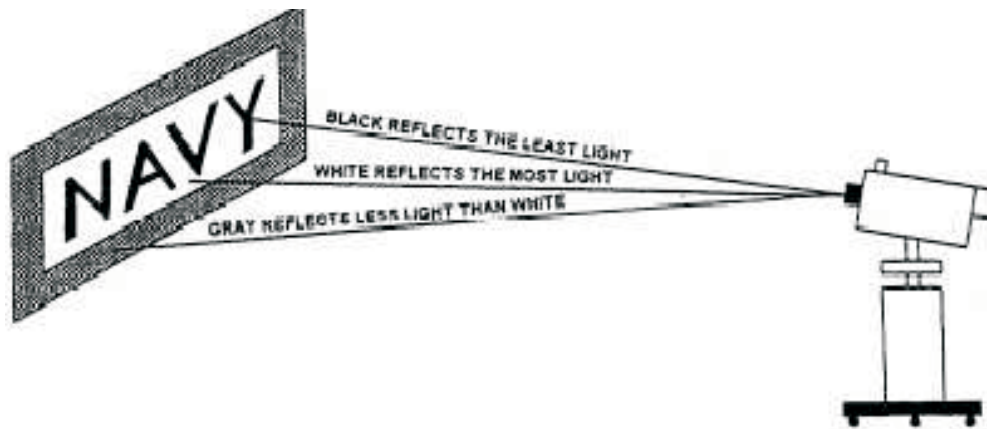


Figure 14-1.—The various amounts of light seen by the television camera.

coated with thousands of tiny globules of silver mixed with other chemical elements. This coating is photosensitive, which means it gives off electrons when exposed to light. Light from the scene covers the entire surface of the pickup tube and electrons are forced off its rear surface. The number of electrons forced off any part of the pickup tube is determined by the amount of light that strikes this part.

In figure 14-1, the Navy banner causes the pickup tube to give off electrons corresponding to the amount of light reflected from various parts of the banner.

At the present time there is no practical method for transmitting a complete video picture instantaneously as a whole unit. Therefore, in television, the picture is broken into tiny units called elements, which are transmitted individually in sequence. The elements are so small that the human eye cannot distinguish one from the other in the complete picture. The process of registering all the elements of a video picture in sequence is called scanning. During the scanning process, the television camera “encodes” the elements; then the television receiver is used to “decode” them in

the proper order to recreate the original image (fig. 14-2).

ELECTRONIC CHARACTERISTICS

In this section, we examine the following electronic characteristics of a television camera:

- Operating light level
- Video noise

Operating Light Level

You need a certain amount of light in order for the pickup tube of the camera to perform its function. Although there are several ways to measure light, the footcandle is one of the more common units of measurement.

Whatever term is used, make sure your light-measuring device is in the same language as the manual for your camera. For example, if the manual calls for a minimum of 100 footcandles of light, you will need a light meter that reads in footcandles.

Some cameras have a way to give you more light when you need it. The dB gain switch (fig. 14-3),

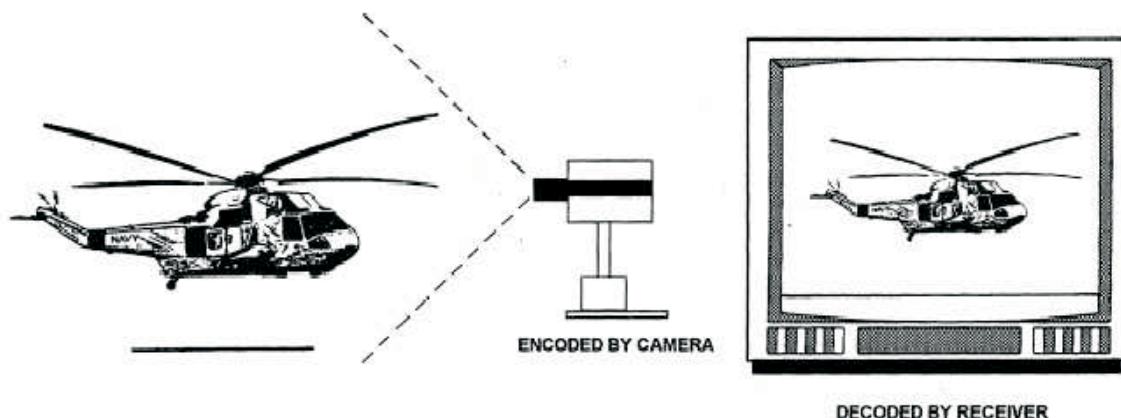


Figure 14-2.—The scanning process.



Figure 14-3.—Television camera dB gain switch.

usually located on the back of the camera, has two positions — 6dB and 12dB. For every 6dB of gain, the camera output signal doubles in amplitude to increase the video level effectively. That means the 6dB setting doubles signal strength and the 12dB setting is four times more than the 6dB gain.

Video Noise

Video noise increases in proportion to the video gain previously described. Even the best cameras will deliver “noisy” pictures under low-light levels. A noisy picture has a great amount of snow, or white vibrating spots, in the picture. This occurs when the

video signals produced by the pickup tube are not strong enough to override the electronic interference the system usually generates. At 12dB gain, the system is generating more electronic interference — and more video noise.

Having covered the basic operation and electronic characteristics of a video camera, we will now examine the types of video cameras you will work with at NMC broadcast detachments.

STUDIO CAMERA

The studio camera (fig. 14-4) is the backbone of the television industry. It is mounted on a dolly pedestal so the camera operator may wheel it to different locations with relative ease during shot changes.

Television technicians monitor and adjust the video levels of the studio camera with the camera control unit (CCU), usually located in the control room. The CCU consists of a waveform monitor (an oscilloscope that displays a video signal graphically), television monitor and shading control.

Studio cameras are expensive, ranging in price from under \$5,000 to more than \$100,000. However, the more expensive cameras deliver high-quality images in a variety of production conditions.

ENG CAMERA

The electronic news gathering (ENG) video camera replaced 16mm motion-picture film for television news in the mid-1970s. Today’s ENG cameras are automated and fully operational within a

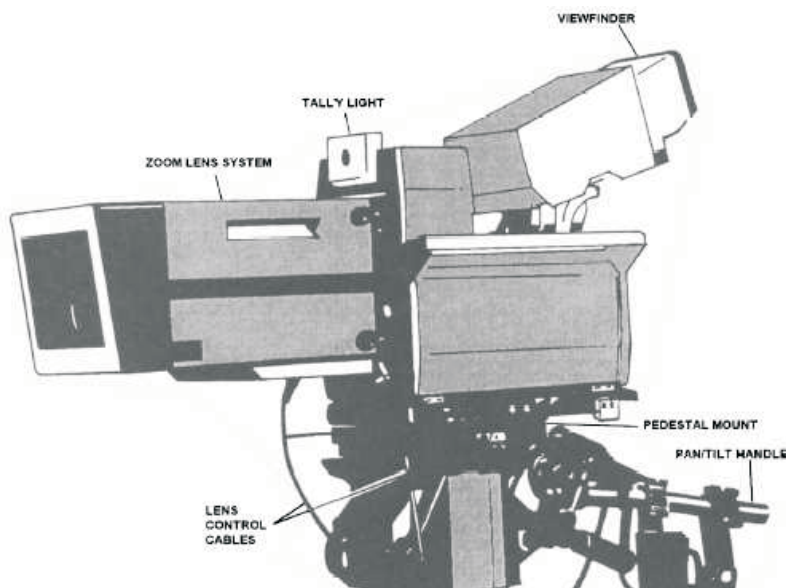


Figure 14-4.—Studio camera.

few seconds after they are switched on. You can make adjustments to extreme production situations quickly and easily.

Most ENG cameras weigh between six and 20 pounds, depending on the number of pickup tubes inside the camera. They are powered by batteries, but you may also run them from AC current using an adapter. An ENG camera is shown in figure 14-5.

CONVERTIBLE CAMERA

Some of the more expensive ENG cameras may be converted from an ENG format to a studio camera head with a large viewfinder and advanced zoom lens. In terms of practicality, the convertible camera is tough to beat because you can use the same camera for two distinct applications. For instance, you can use a convertible camera to cover the 11 a.m. ribbon-cutting ceremony at the new Navy Commissary, then connect it to a CCU in the control room for the evening news six hours later. Furthermore, the convertible camera is invaluable for remote productions requiring several cameras, such as sporting and entertainment events. Convertible cameras are shown in figure 14-6.

CAMCORDER

Camcorders are the camera of choice for ENG work. The standard camcorder in the broadcast industry today is a betacam, which uses a fast speed beta format tape and produces excellent video pictures. (See fig. 14-7.)

Another popular video format is Hi-8. This format has several advantages. First, the cameras are small,

compact and easy to carry. The video is not the same quality as beta, but is good enough to edit and use on the air. Hi-8 cameras are also less expensive; sometimes thousands of dollars cheaper than larger camcorders. Most broadcast detachments are equipped with both betacam and Hi-8 cameras. If the production you are shooting affords you plenty of time to shoot the video you require, you should normally use a betacam. When time constraints are imposed, or if you need to capture video in a hurry, Hi-8 or VHS format is the best bet.

Most television editing systems can be set up to use several different video formats, including beta, VHS and Hi-8.

TELEVISION CAMERA OPTICS

LEARNING OBJECTIVE: *Identify the optics of a television camera.*

You were introduced to the functions of camera lenses in chapter 11. The lenses and the associated optics for television cameras (save viewfinder) operate in the same manner as still photography, but we will cover them briefly as they apply to the television medium.

VIEWFINDER

The viewfinder on an ENG camera is a relatively small television screen (1.5 inches in diameter), while a studio camera viewfinder is larger (3 to 9 inches in diameter). They both produce high resolution black-and-white images. The television screen on an

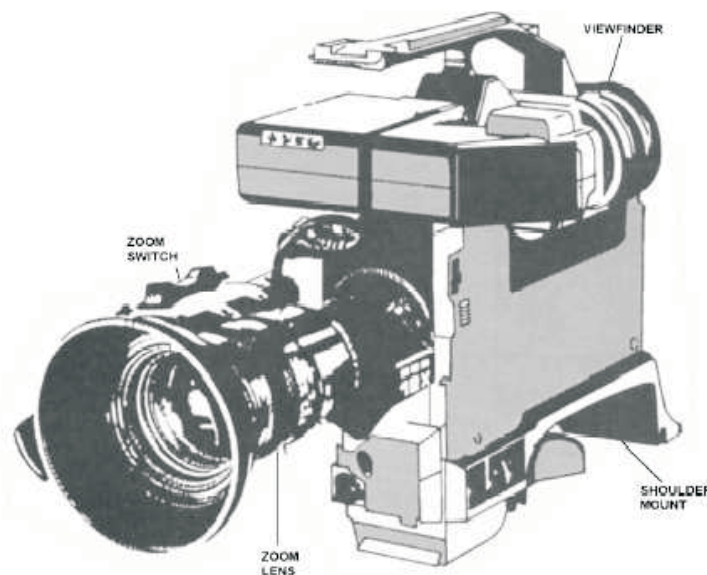


Figure 14-5.—Electronic news gathering (ENG) camera.

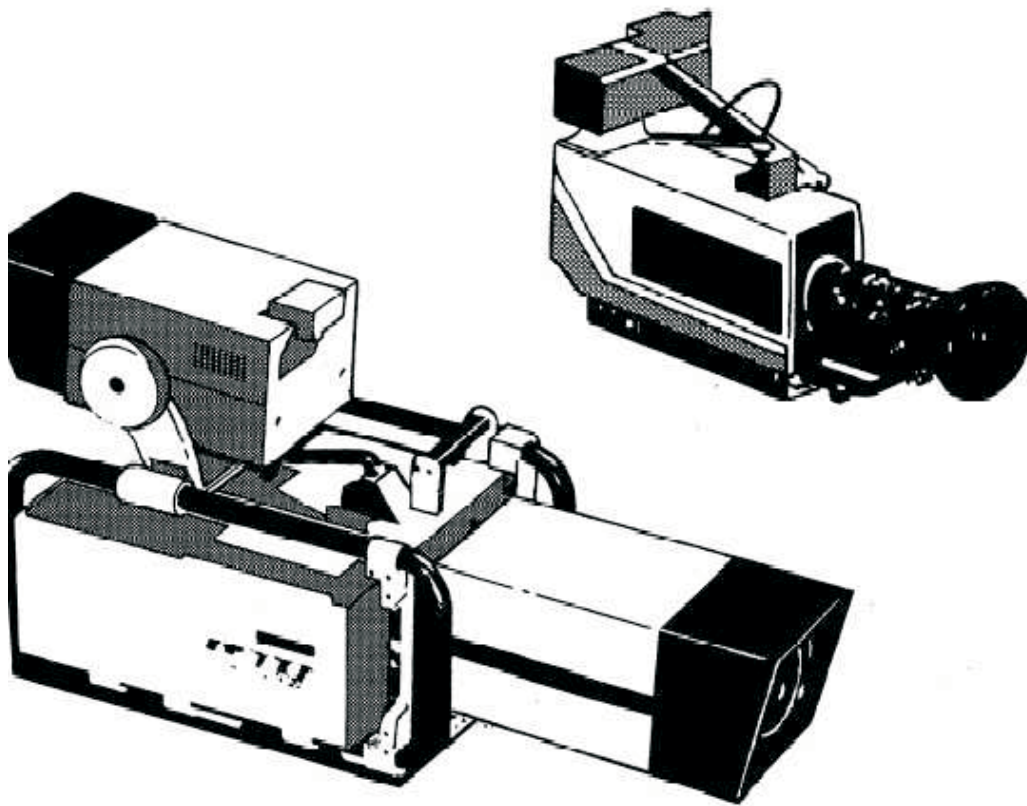


Figure 14-6.—Convertible cameras.

ENG camera is shielded from outside reflections by a flexible rubber eyepiece that adjusts to the operator's eye. In that rubber eyepiece, there is an adjustable lens for you to focus since the eye is placed within an inch or two of the screen. The studio viewfinder uses a hood to

shade the television screen from overhead studio lights.

Within the ENG camera viewfinder, there are a number of control lights or displays that indicate the status of certain camera functions. Most viewfinders

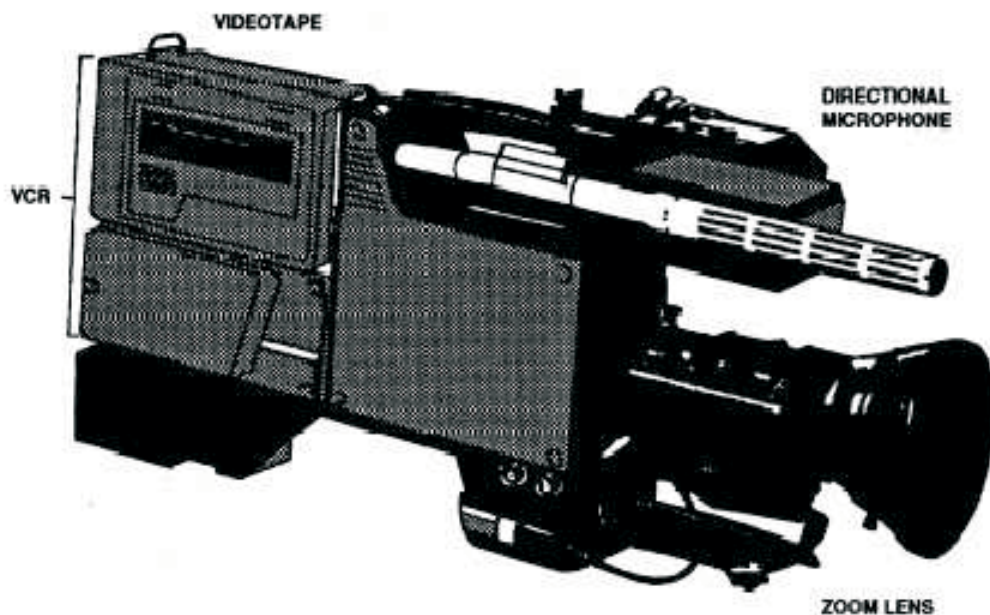


Figure 14-7.—Camcorder.

automatically display information on tape status, battery condition, tally/record light and low-light level indicator. The viewfinders display, on command, color bars, patterns, white/black balance setup cursor and camera registration. All camera viewfinders are black-and-white.

In some camera models you may use the viewfinder as a playback monitor for the VCR. The advantage of this feature is that you do not need additional equipment to set up the camera. However, some video camera manufacturers are discontinuing this feature because today's cameras are more reliable and recorders have indicators to let you know when you are recording.

LENS

The lens selects a certain field of view and produces a small, clear optical image of this view. The lens and certain attachments are sometimes called the external optical system.

When you work with video camera lenses, you concern yourself with the following four areas:

- Focal length
- Focus
- F-stop
- Depth of field

Focal Length

As you learned in chapter 11, focal length is the distance from the optical center of the lens (which is

not always its physical center) to the point where the image, as seen by the lens, is in focus.

Portable television cameras have a zoom, or variable focal-length lens (fig. 14-8), that allows you to select fields of view at different distances from the camera without moving the camera. It allows you to change the focal length of the lens from long to short or from short to long in one continuous operation. A complicated series of lenses interact to keep the object in focus at all times during the zooming process. "Zooming in" is the gradual changing of the lens from a wide-angle lens to a narrow-angle lens. On the television screen, a zoom in appears as though the camera is moving smoothly toward the object. "Zooming out" is the changing of the lens from a close-up to a distant shot and it will appear that the camera is moving away.

The degree to which you can change the focal length of a zoom lens is the zoom range of your lens. The range is often given in a ratio, such as a 10:1 zoom range. This means you can increase your focal length 10 times. Some cameras have a "times two function," which allows you to double the focal length at any point in the zoom, thus making the maximum 20:1 for the above example.

You can control the speed of your zoom either manually or by using a zoom servo. These features are covered in the following text.

MANUAL ZOOM CONTROL.—The manual zoom control on ENG cameras is a small rod extending from the zoom ring. To zoom in or out, turn the zoom rod clockwise or counterclockwise. It takes some skill

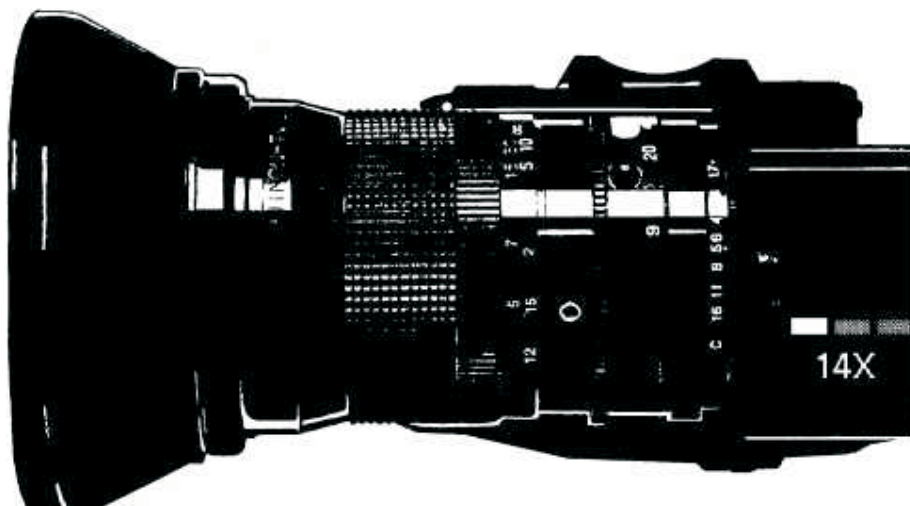


Figure 14-8.—Zoom lens.

and practice to accomplish smooth zooms with the manual control.

ZOOM SERVO.—A zoom servo is nothing more than a small motor controlled by a lever. The distance the lever is depressed determines the speed of the zoom — typically from 2.5 to 20 seconds. The lever is called the zoom selection or T/W switch — T stands for telephoto and W for wide angle.

There are several advantages to the zoom servo system. Zooms are steady and smooth, especially during slow zooms. The zoom control is easy to operate and allows you to concentrate more on picture composition and focusing. The zoom servo also frees the left hand to operate the manual focus and aperture controls.

You must be aware of two disadvantages of the zoom servo. Although relatively quiet, some zoom servo motors emit a humming noise that is picked up by the camera-mounted microphone. Additionally, the motor uses power provided by the camera battery.

MANUAL FOCUS CONTROL.—The focus control is usually a rubber-covered ring on the zoom lens. To operate it, you rotate the focus ring either clockwise or counterclockwise while looking in the viewfinder to determine if the picture is in focus.

Focus

Two methods of setting the focus on a zoom lens are used. One, called **zoom focus**, is done by zooming all the way in and setting the focus, then zooming out to the desired focal length. Once this is done, everything in the depth of field will remain in focus, including the object focused on, provided the distance between it and the camera does not change.

Another focusing method is called **rack focus**. This is nothing more than your setting the focus on something in the field of view. When you do this, only that object and other objects at the same distance will remain in focus as long as the distance between them and the camera does not change.

You should rack focus when there is not enough time to zoom focus. However, there are times when the effects of a rack focus are desirable, such as when the viewer's attention is directed toward something in the foreground and you want to lead him to another object. You can do this by changing the focus to bring the other object into sharp focus while the first object goes out of focus.

f/Stop

As noted earlier, the camera pickup tube will operate properly only within a certain range of light intensity. If too much or too little light falls on the pickup tube, the picture quality will suffer.

Since you will use the camera both indoors and outdoors, you must compensate for extreme differences in light levels. The lens diaphragm, or iris, is used to control the amount of light that enters the lens and the camera by enlarging or reducing the aperture. The f/stops indicate the size of the lens (diaphragm) opening. The lower the f/stop number, the wider the lens opening. When you zoom in, the lens will require more light, a wider opening and a lower f/stop number.

Most television cameras have an automatic iris that allows you to devote your attention to other important aspects of videography, such as framing and composition. You will, however, have to select the proper filter setting for the scene you are shooting. Although the automatic iris seems ideal for ENG assignments, it does not always work to your advantage. With fairly even illumination, the auto iris closes down when it sees an extremely bright area in a scene or opens up when it senses a large, dark area. You can avoid this by switching to the manual iris control.

Depth of Field

It is important for you to know that f/stops do more than just determine the amount of light entering the camera. They also affect the depth of field.

As in still photography, a large diaphragm opening (small f/stop number) decreases the depth of field, and a small diaphragm opening (large f/stop number) increases it. The same rules apply when you move the camera. A great depth of field makes it easy for you to keep the subject in focus while moving short distances, whereas a shallow depth of field makes it impossible for you to move without getting the subject out of focus.

THE TELEVISION STUDIO PRODUCTION TEAM

LEARNING OBJECTIVE: *Recognize the members of a television studio production team.*

A television production, such as the one shown in figure 14-9, relies on the expertise of several



Figure 14-9.—The talent, camera operator and floor manager on the set of Navy-Marine Corps News.

individuals who do a myriad of jobs. These jobs are interdependent and must be coordinated to perfection.

As a member of a television studio production team, (fig. 14-10) you will be called upon to function in any one of the following positions:

- Talent
- Camera operator
- Floor manager
- Audio switcher
- Graphics operator
- Video switcher
- Director

TALENT

The television studio production centers around a performer of some sort, whether it be the CO explaining a change in base policy on captain's call or a colleague delivering the evening news. In television parlance, the performer is known as the **talent**. An array of support people assists the talent, including those who handle copy, wardrobe and makeup. The talent receives instructions from the director through the floor manager.

CAMERA OPERATOR

The images that appear on the television set are first determined by how and what the camera sees. Images from several cameras may be available for the



Figure 14-10.—Video graphics add a professional touch to television productions and news stories.

director and video switcher to use or blend to produce the transmitted picture. Unlike recorded videotape, the editing of a live studio production is accomplished as the picture is transmitted. Thus the television camera is the most important single television production element. All other elements and techniques are geared to the physical and electronic characteristics of the camera. Lighting, scenery, audio, writing and directing all depend, more or less, on the potential of the camera.

In most television studio productions, there are several cameras operating at the same time. As a camera operator it is your responsibility to make sure you can operate your camera efficiently. You can only be efficient when you are completely familiar with your camera and use practical television camera-operating techniques.

During a production, you wear a headset that gives you direct communication with the director. The director tells you when your shot is about to be used and when it is being used live. Even when your shot is not live, you should attempt to keep a shot that the director may find useful to the program. This will allow him to use that shot for coverage if something goes wrong with another shot or camera.

You may receive instructions from the director to move the camera, either to a new angle or to a new position on the studio floor. It is essential to a successful television production that all camera

movements be carried out correctly, quickly, quietly and smoothly. The director relies heavily on the conduct of the television camera operators, and his job is easier when you respond to his commands not only quickly but accurately. This is particularly important during unscripted programs. (Television shooting techniques, including specific camera movements, are covered later in this chapter.)

FLOOR MANAGER

The floor manager stays in the television studio during a production. Through a headset system he is in direct, two-way communication with the director in the control room. The talent normally is not able to use a headset and cannot receive instructions directly from the director. It is the prime responsibility of the floor manager to act as a liaison between the talent and the director.

Since it is not practical for him to instruct the talent orally during a production, the floor manager stands or kneels next to the camera that the talent should speak to and uses a system of hand signals to relay the director's instructions. Although any hand signal system understood by both the floor manager and the talent will work, we recommend you use the universally accepted system shown in figure 14-11.

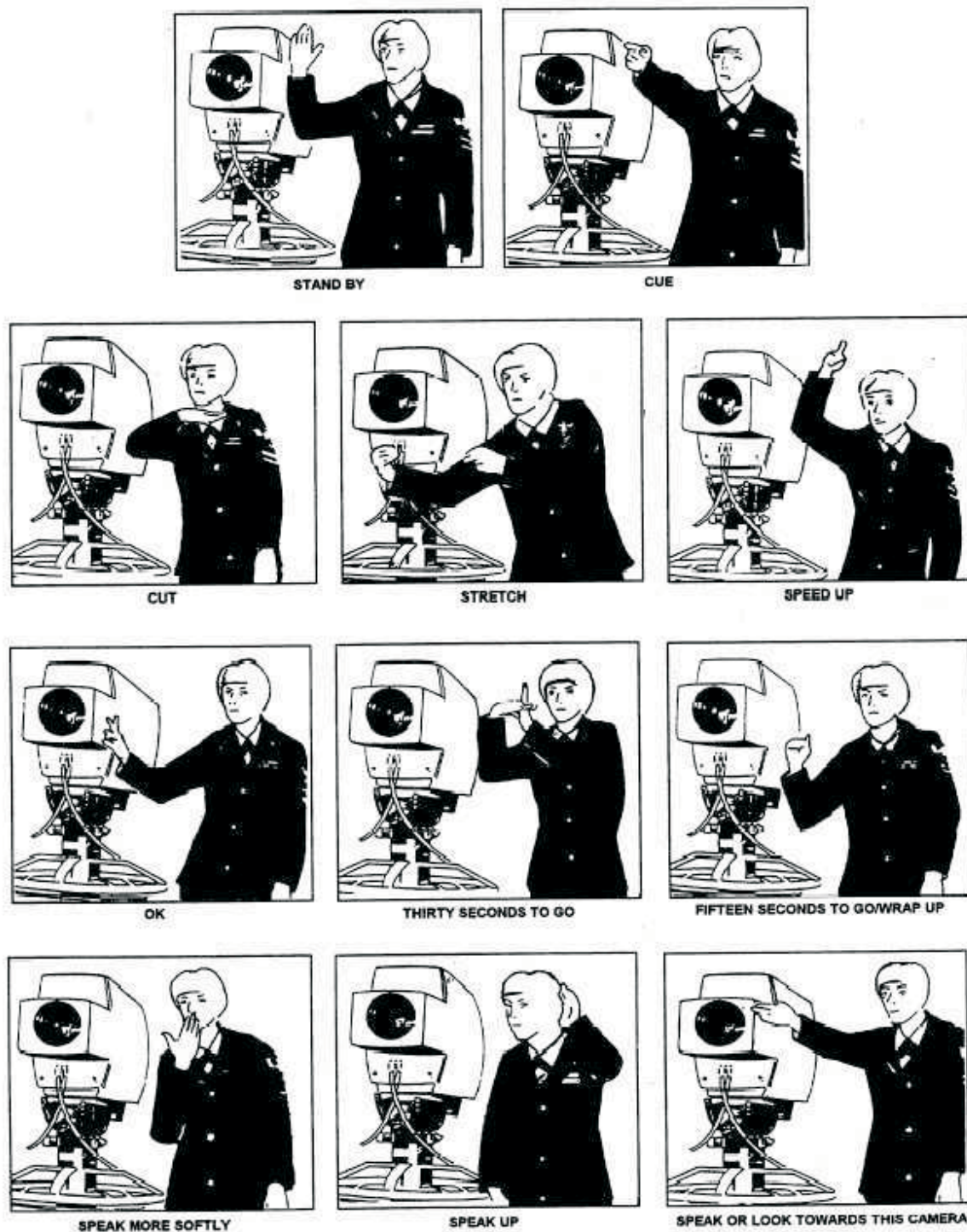


Figure 14-11.—Floor manager's hand signals.

The basic hand signals that the floor manager and talent must understand are listed in the following text.

- Stand by. For the hand signal to “stand by,” the floor manager raises his hand and arm at the beginning of the show or following a spot break.
- Cue. For the hand signal to “start talking” or “begin action,” the floor manager raises his hand and points to the talent.
- Cut. For the hand signal to “cease talking” or “stop action,” the floor manager draws his hand across his throat in a slashing motion.

- **Stretch.** For the hand signal to “stretch it” or “slow down,” the floor manager pulls his hands apart as if stretching a rubber band. Longer amounts of time are indicated when the floor manager places his hands farther apart at the end of the stretching motion; shorter time amounts are indicated when the floor manager places his hands closer together.
- **Speed up.** For the hand signal to “talk faster,” the floor manager rotates his arm and hand clockwise in a circle above his head. The speed of the rotations are related to the urgency of time.
- **OK.** For the hand signal that “everything is fine,” the floor manager makes a circle with his thumb and forefinger.
- **30 seconds to go.** For the hand signal that there are 30 seconds remaining in the show/segment, the floor manager forms the letter *T* with both hands.
- **15 seconds to go/wrap it up.** For the hand signal that there are 15 seconds remaining in the show/segment and the talent should wrap up what he is doing, the floor manager creates a grabbing motion with his hand that results in a fist.
- **Speak more softly.** For the hand signal to “speak more softly,” the floor manager raises the palm of his hand to his mouth.
- **Speak up.** For the hand signal to “speak up,” the floor manager cups his ear with his hand.
- **Speak or look at this camera.** For the hand signal to “speak or look at this camera,” the floor manager points to the on-air camera with his hand. A waving motion from one camera to another alerts the talent that the director is switching the shot to another on-air camera.

Be precise and deliberate when you deliver hand signals. Do not wave your arms in the air frantically — this will only confuse and irritate the talent.

During a television production, the studio floor is usually a maze of lighting and camera cables that can hinder the movement of the cameras and also be a safety hazard. The floor manager must make sure these cables are stored or positioned safely. Furthermore, he should find out from the camera operator and director how much camera movement is expected.

Once a production is under way, any number of problems may develop on the studio floor. Cameras may refuse to move or the talent may develop giggling fits. In normal circumstances, the only way the director can find out about these problems is through the floor manager. Therefore, another responsibility of the floor manager is to keep the director informed of any developing situations on the studio floor that may affect the program.

AUDIO SWITCHER

The audio switcher is responsible for the smooth operation of the television audio mixing console. He must be able to respond quickly and correctly to the commands of the director.

The television audio mixing console is usually located next to the video switcher in the main television control room. The console itself has all the sound inputs fed into it including microphones from the studio floor, cart machines, CD players, video tape players and so forth. The audio switcher has absolute control over these inputs and must balance them so that they are at a compatible level.

VIDEO SWITCHER

Although the camera operator frames the shot and the director calls for it, the video switcher (fig. 14-12) is ultimately accountable for the picture that is recorded or broadcast. The video switcher is responsible for the smooth operation of the video-mixing console and the special effects bank. He directly controls what the audience sees. A mistake on his part cannot be covered up by the director.

The video switcher sits at the video-mixing console throughout the production and is completely responsible for its smooth operation. He must be able to operate the console efficiently and respond quickly and correctly to the commands of the director. The video switcher can only achieve such efficiency by having a thorough knowledge of the console equipment and by constantly practicing mixing techniques. In addition, the video switcher must know how to apply the various special effects available to him and operate them smoothly.

DIRECTOR

The television studio production crew is a team, with everyone in the team working together toward one common goal — the successful airing of a production.



Figure 14-12.—Video switcher.

Although each member of the team is responsible for the correct and efficient operation of his particular task, there has to be someone in charge — someone with an overall view of the situation and the way the various tasks are accomplished. This person is the director.

The director is totally responsible for the production. He is able to give instructions to every member of the crew, either directly, or in the case of the talent, indirectly. These instructions must be clear and concise — garbled instructions are worse than no instructions at all.

In a scripted production, only the talent *needs* a script, but it is the director's responsibility to be completely familiar with it so he may devote more of his attention to the actual production and less time wondering what the talent is going to do next.

It is also the director's responsibility to be aware of the functions of each member of his crew and their equipment. There is probably nothing worse and more frustrating for a production crew than to work with a director who sets impossible tasks for his crew because he is unaware of the functions and limitations of his people and their equipment.

During a studio production, the director gives commands to the camera operators and the audio, video and graphics switchers. These commands are covered in the following text.

Camera Commands

The director issues commands to the camera operators more than any other production team member to accomplish the following tasks:

- Set up shots
- Refine the framing and composition of a shot
- Direct the movement of a camera while the shot is on the air

When you serve as a director, you should remember the following guidelines:

1. Give a “ready” or “standby” cue whenever possible. Your doing so tells the camera operator to hold a particular shot and that airing is eminent. Additionally, it is a good practice that you give a “ready” command just before a camera movement. For instance, if the talent is seated and is scheduled to get up and move to the left, you would say, “Camera 3, *ready* to pan right with the talent.”

2. Identify each camera by number. You will know each camera operator by name, but you should issue camera commands using the appropriate camera number.

3. Begin a command with the camera number. Do not say, “Ready to pan right with the talent, Camera 3.”

4. Be specific when issuing commands. For example, the command “Camera 1, zoom out” is too vague for production work. Instead, you should say: “Camera 1, zoom out for a bust shot.”

Switcher Commands

The director should follow the same basic guidelines for camera commands when issuing commands to the video, graphics and audio switchers. In some situations, the director will give switcher commands while actually performing the switching functions himself. This is done primarily to alert team members of video, graphics and audio transitions.

Try to economize your words when you issue switcher commands. For instance, instead of saying, “Ready to cut to Camera 2 ... Cut to Camera 2,” say “Ready to take 2 ... take 2.” Your using fewer words takes less time and cuts down on the possibility of confusing team members.

In addition, you should give commands to the video switcher *last*. This is because the video switcher is normally positioned close to the director and needs less time to respond to a command than camera operators or the floor manager. Give your commands in this order:

1. Audio switcher
2. Talent
3. Graphics switcher
4. Video switcher

TELEVISION VISUALS

LEARNING OBJECTIVE: *Recognize the technical requirements and main types of television visuals.*

As a television broadcaster, you must be able to think visually in order to make the most of the television medium. In some cases, visuals can tell the entire story by themselves and should be an integral part of a production instead of an afterthought. You may have heard the cliché, “One picture is worth a

thousand words.” This is true because effective visuals will help you tell the story with more clarity. A viewer’s imagination can actually provide the “soundtrack,” sometimes enhanced by narration (used sparingly) and television dialogue.

The term *visuals* may be broken down into the following three subgroups:

- Graphics (maps, charts, diagrams, illustrations, printed IDs, outlines and summaries and CG information)
- Photographic techniques (videos, slides and still photographs)
- Television backdrops, props, scenery and subject/talent visual information not included in the first two categories

TECHNICAL REQUIREMENTS

Before you plan or use any type of television visual, you must be aware of the technical limitations and guidelines involved. Even if you do not actually design or prepare the visuals, you must be able to guide your artist and understand the limitations of visuals.

It is important for you to understand how visuals must be tailored for television before producing or selecting them. For example, a novice television broadcaster may see a random visual he likes and tries to use it immediately, while a seasoned veteran will base his decision on more scientific guidelines and will not rely on first impressions.

Any producer of television programs learns quickly that he needs a “working knowledge” of many contributory fields. One of these is graphic arts. All television shows use graphic materials — titles, name keys, slides, photographs, illustrations, charts and maps — just to name a few. Graphic materials greatly enhance news and feature productions, spot announcements and virtually all types of television programs. Keep in mind that, in television, it is important for you to present information visually as often as possible since people remember visual information longer than the spoken word. Without visuals, you lose the force of this powerful medium.

Whether written, pictorial, diagrammatic or sheer design, visuals have a place in almost every television production. In preparing visuals for television, you should pay close attention to the aspect ratio, scanning area, essential area, border area and the size of the visuals.

Aspect Ratio

The aspect ratio of any television screen, regardless of its physical size, is 3:4. This means the television screen is divided into three units high and four units wide. The visual elements should be kept in a format size that will complement either 6:8 or 9:12. These aspect ratios will help you keep the materials and objects within the 3:4 aspect ratio format shown in figure 14-13. A television visual prepared within this aspect ratio will be seen in its entirety on the television screen. Conversely, think about what would happen if you were to shoot a vertical photograph without the proper aspect ratio. The photograph would lose a major portion of its information from either the top or bottom, or its sides and it would look visually poor on the television screen.

Scanning Area

The total area seen by the camera is called the scanning area. This image is transmitted fully, but the outer edges and the corners usually do not appear on the home television set because of the shape of the picture tube. A properly aligned television receiver will display all scanned information at the top and bottom center of the picture, but will crop corners because of the nonsquare corners of the picture tube.

The common mistake many new television broadcasters make is allowing too much headroom at the top of the picture. Remember: the home receiver sees everything at the top center, so do not overcompensate the same way you do for edge and corner cropping.

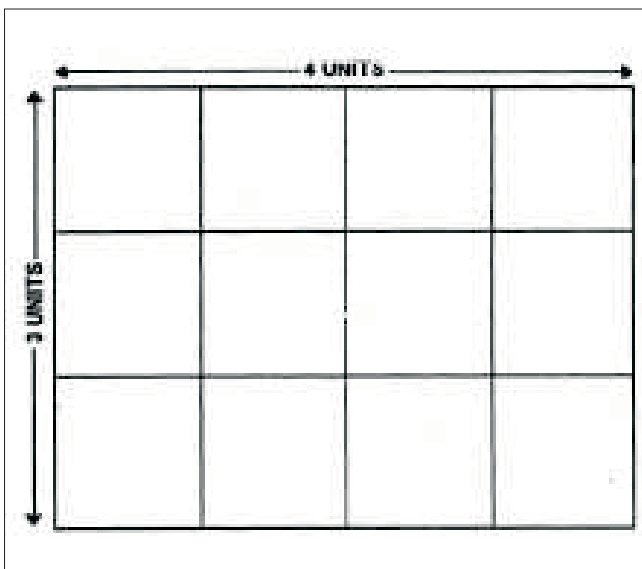


Figure 14-13.—Television aspect ratio.

Essential Area

The portion of the picture that reaches the viewer must include all of the important information — this is known as the essential area. All visuals have a scanning area and an essential area. The scanning area is the entire picture from top to bottom and from side to side. The essential area is the meat of the picture — the main information within that picture area. Both the scanning and essential areas of a picture are shown in figure 14-14.

Remember to use the scanning area! The total scanning area is visible on most television sets, but there is a 10-percent loss on others (fig. 14-15). Therefore, keep all pertinent information within the essential or “safe” area. This is especially critical when you use words.

TYPES OF VISUALS

The types and uses of visuals are limited only by your imagination. Visuals come in various forms, each having a name that makes it easily identifiable to production and artwork staff members.

The following is a list of the major types of television visuals and graphics:

- News/program pictures and slides
- Graphic information scrolls
- Sports graphics and score charts
- Super/key card
- Chroma key card

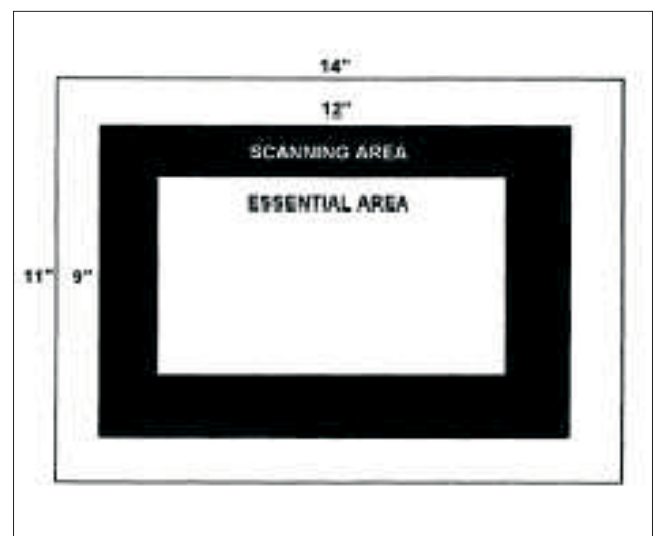


Figure 14-14.—Scanning and essential areas of a television picture.

- Maps and charts
- Character generator
- Computer graphics

Character Generator

Television has changed dramatically over the last 20 years - especially when it comes to visuals and graphics. In the early days of television, title cards and photographs were placed on an easel in the studio and filmed by the studio camera. The director would either take the shot on-air, or superimpose the shot over another one.

Today, nearly every television studio has a computer graphics character generator (CG) (fig. 14-16) that performs a myriad of tasks that help make your production a professional product. Name keys, titles, graphics and photographs, pie charts and bar graphs and special effects can be composed on the CG and stored on the computer hard drive for air at a later date. These files can easily be recalled and placed on-air during a live production, and greatly enhance the final product.

Although the CG is a timely means to display information, you should not rule out the use of other graphic support material.

Computer Graphics

Computer graphics, the newest elements of the television medium have all but replaced 35mm slides for television work. It starts with an electronic picture recorded on videotape. The computer operator converts the picture into a digital code format and stores it either on the hard disk drive or a floppy drive. When the image is needed, a graphic artist retrieves it

and converts it into an electronic picture. Now he may paint or draw a picture using an electronic pen and palette. The graphic artist can add or delete information and change the colors of the picture and letters at will while “on-the-air.” Some advanced computer graphic systems have a wide range of colors and can produce detailed animation.

A computer graphic system is shown in figure 14-17.

Plain Title Card

The plain title card has printed lettering (without any pictorial background), such as the title of the show, the name of the performers and producer and so forth. Rich, deep color backgrounds with light lettering makes reading easy.

Super/Key Card

During the showing of a super/key card, the card lettering is superimposed electronically over another background (or over another picture) from either another camera or from a film chain camera. This technique is an accepted form for placing the name of the subject on the air while the subject is talking. Use only simple, bold letters and try to restrict the amount of information on the super/key card. Normally you should avoid white lettering on a black background, because the contrast between the two is too great. Nonetheless, in this case, the lettering must be white and the background black.

Use caution when you plan the super/key card. You must consider how two camera shots will look as one picture. In addition, you should place lettering in the lower third of the card and center the card on the picture. This is done so you will not obstruct the background or the main action.

PREPARING TELEVISION VISUALS

LEARNING OBJECTIVE: *Identify the techniques used to prepare television visuals.*

Regardless of the purpose or format of your television visual, you must consider the following basic aesthetic elements:

- Simplicity
- Contrast
- Balance and composition
- Lettering



Figure 14-15.—Transmission loss.

SIMPLICITY

The old adage, “Keep It Short and Simple” (KISS), certainly applies when you create television visuals. Your visual should be uncomplicated and easily recognized. Do not make the viewer work too hard to understand what he is seeing. For example, viewers normally will ignore a visual with too much lettering. Additionally, try to keep colors to a minimum.

All copy or lettering must be readable. Fancy fonts may look good on paper, but they might not permit the viewer to understand what you are trying to convey.

Sizing of the subject in the picture also is important. Keep the primary subject somewhat large within the picture that you are framing. Do not make the viewer strain to read or see the subject. A good subject size is about one-half inch in height on a 19-inch monitor.

CONTRAST

High definition, or contrast quality, is important for reproduction over a television system. Contrast in visuals should be sharp but not excessive. Avoid large areas of white. The pickup tube(s) of the camera will transmit glitter and flair when you shoot high-intensity reflected light, especially during camera movement. This also may introduce audio noise into the television picture.

The human eye can identify about 100 different shades of gray. The television camera clearly identifies only about 10 shades. Since the brightest area can be no more than 20 times as bright as the darkest area, you must be careful when using pictures and visuals that have high contrast.

You also should consider how color will appear on a black-and-white (monochrome) television set. Color material will appear as shades of gray on a monochrome television set and must be used according to its gray scale value. The best way to test colors is to check them with a color television camera and monitor. You will find that brown, purple, dark blue and black appear black on a monochrome television; red, medium blue and medium green appear dark gray; light blue, chartreuse, gold and orange appear light gray; and pastels, bright yellow, light gray and tan appear almost white.

Even a color television system acts as a filter — it only sees a portion of the hue (color) and saturation (color strength) that the human eye can see. Most color cameras have trouble with the colors red and orange. Saturated colors cause excessive video noise or color stretching over the entire screen. Stripes or color banding also may show up as color vibrations, thus disrupting the picture. Stay with basic, solid colors — primarily blues and greens — and avoid supersaturated reds and oranges.

Studies have revealed that color may influence our judgments of size, weight and temperature and even affects our psychological state of mind. Colors are viewed as “high energy” or “low energy.” Cool colors are considered low energy; warm colors are termed “high energy.” Make sure you avoid using two colors that have the same value on the gray scale.

BALANCE AND COMPOSITION

Balance and composition are also important factors when you design television visuals. For full screen visuals, make sure the design is balanced and

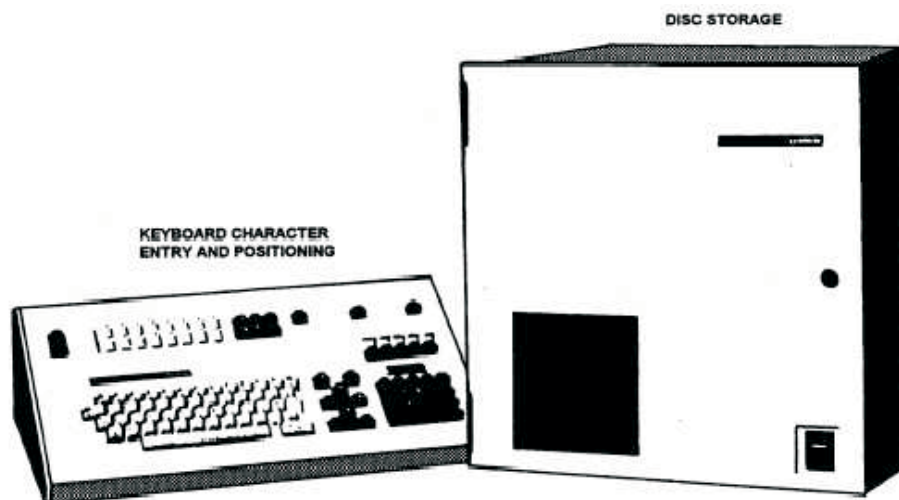


Figure 14-16.—Character generator (CG).

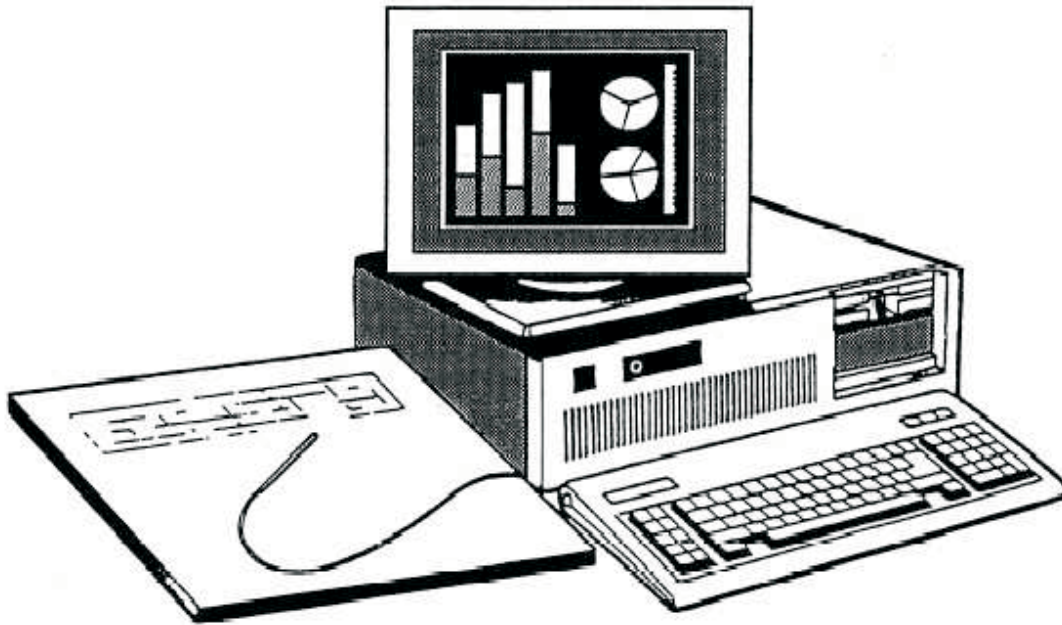


Figure 14-17.—Computer graphic system.

aesthetically pleasing to the viewer. Try to visualize the final, on-air picture before you use it in a production.

LETTERING

The viewer will not see letters too small or too thin. A general rule of thumb is not to use letters smaller than 15 to 20 percent of the essential area. If the visual is too busy or includes too much material, it will probably distract your audience. Five or six lines of 15 to 20 characters is considered the most a viewer can handle at one time. This is particularly important when you are composing character generator pages for your local newscast, television production or a command community bulletin board channel.

TELEVISION MICROPHONES

LEARNING OBJECTIVE: *Recognize the types of microphones used in television productions.*

Sound plays a vital role in the television communication process. Most human intelligence is transmitted through sound; therefore, good quality sound is an important part of television. However, good quality sound is rather difficult to achieve at times because sound sources may be in motion, talent may speak to the camera and not into the microphone and microphones must sometimes be hidden from the view of the camera. To help solve these audio problems, you

should have a basic understanding of television microphones.

Microphones are usually classified according to the way they pick up sound, also known as their polar pattern. Sound in physical terms is the vibration of air particles or small fluctuations of air pressure that spread like waves from a source of sound. Human ears respond to this change in pressure within a sound field. Similar to a human ear, microphones respond to the change in air pressure created by sound waves and convert the fluctuations of pressure into electrical current.

POLAR PATTERNS

The pickup, or polar pattern of a microphone, is the shape of the area around it where it picks up sounds with maximum fidelity and volume. Nearly all microphones can pick up sounds from areas outside the ideal pattern, but their quality is not as good. For best results, the sound source should be within the pickup pattern, generating enough volume to allow the audio switcher to keep the volume control at a minimal level.

Microphones are classified according to the following three basic polar patterns:

- Unidirectional
- Omnidirectional
- Bidirectional

Unidirectional

The unidirectional microphone picks up sound from only one direction. Because of this characteristic, the unidirectional microphone is used most frequently for television work. It is used by aiming it in the direction of the sound source being recorded. One advantage to the unidirectional microphone is its ability to reject unwanted sounds at the side and rear of the direction the microphone is aimed.

Omnidirectional

The omnidirectional (or nondirectional) microphone is live in all directions. This type of microphone has sensitivity characteristics in which sound is picked up in a 360-degree radius. The use of this microphone in television production is limited; however, in certain situations, you may use it to create a specific sound presence. One example is recording crowd noise for a sports production.

Bidirectional

As the name implies, the bidirectional microphone picks up sound in two directions. This type of microphone is used primarily in the broadcast or recording studio. It is also used for critical sound reinforcement applications, in which, front and rear pickup and greatly reduced side pickup is desirable.

The bidirectional microphone is ideal for such applications as “across the table” interviews or dialogue recording under studio conditions.

The polar patterns of all three microphones are shown in figure 14-18.

MOBILE MICROPHONES

During your tour as a television broadcaster, you will use the following four basic types of mobile microphones:

- Boom
- Hand
- Lavalier
- Wireless

Boom

The most flexible mobile microphone is one that is attached to a microphone boom. A boom, in its simplest form, is a hand-held pole to which a unidirectional microphone is attached. It permits quick and smooth movement of the microphone from spot to spot anywhere on the set. Most booms have a telescoping feature that allows the operator to extend or retract the microphone. Some booms have controls at the end so the operator can rotate the microphone for directional sound pickup.

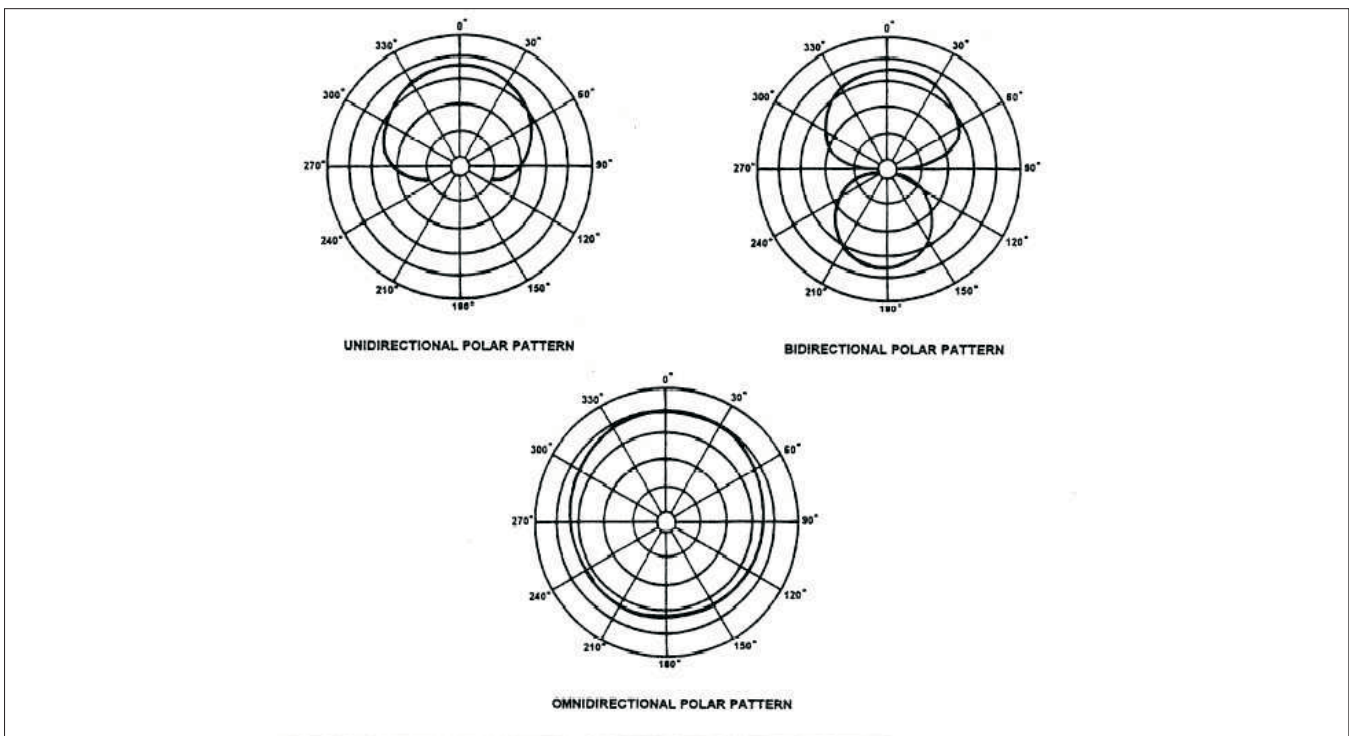


Figure 14-18.—Microphone polar patterns.

Another advantage of the boom is its mobility on the set. The boom operator can move the entire boom assembly from location to location and follow sound sources without an interruption to sound pickup. The giraffe boom (fig. 14-19) is suited perfectly for this task.

As a television boom operator, your primary responsibility is to keep the microphone as close to the sound source as possible without getting the microphone or its shadow in the picture. This requires coordination and anticipation. You must keep the microphone in front of the sound source, listen to the director's signals, watch camera movements, be aware of what lenses are in use, avoid undesirable boom shadows and anticipate the talent's movement — all at the same time.

Hand

The hand microphone (fig. 14-20) is used for many television productions, especially ENG shoots. A hand microphone is seen on camera, and therefore, it

can be held very close to the sound source. It is especially useful amidst noisy surroundings, such as the flight line or the machine shop aboard ship. In such cases, good audio pickup is still achieved by holding a unidirectional microphone very close to whomever is speaking. A hand microphone is valuable in audience participation programs, such as Navy Relief and Combined Federal Campaign telethons.

Lavalier

During reporter standups, newscasts, interviews and similar production applications, the lavalier microphone (fig. 14-21) is more appropriate than the use of a hand microphone. Lavalier microphones are small and unobtrusive. They are normally taped or clipped to an article of clothing on the talent's chest and are ideal when microphone concealment, individual mobility or the free use of hands is required.

Although concealment is an attractive option of the lavalier microphone, you should not place it entirely under clothing. Clothing acts as a filter and any sound

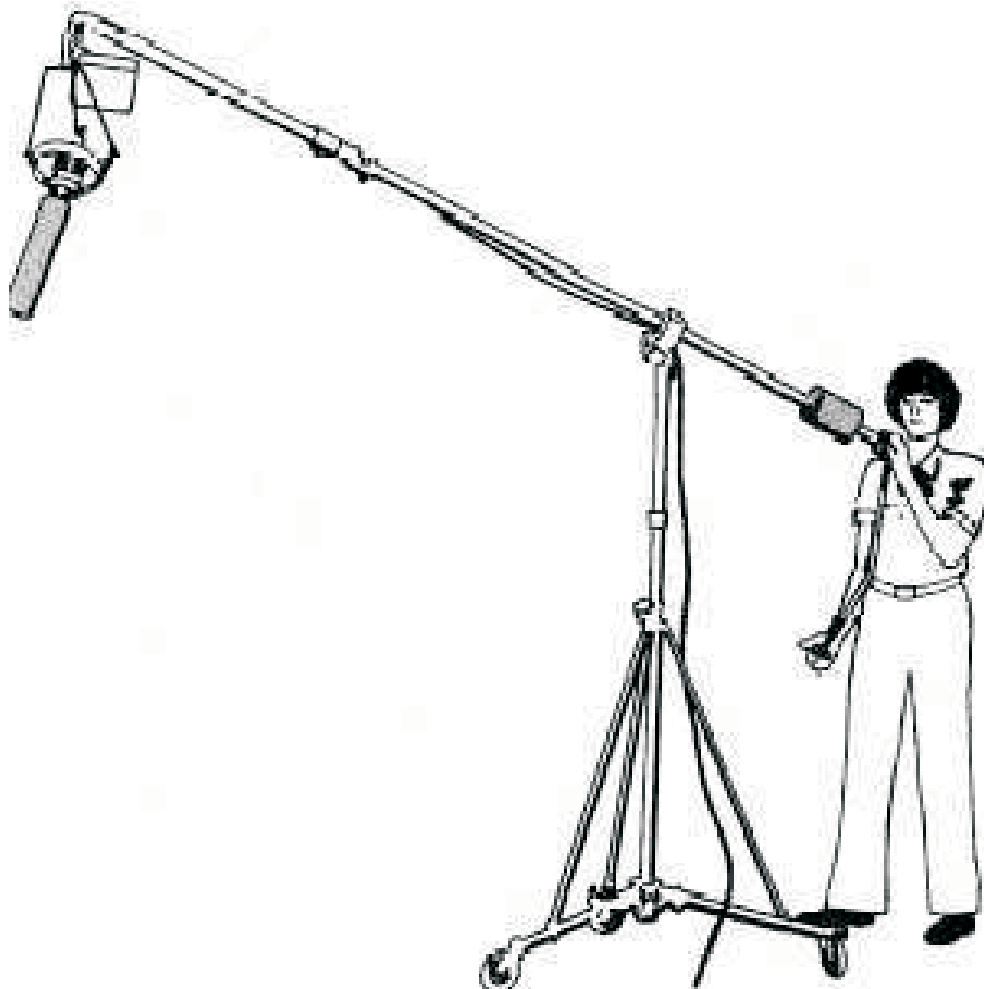


Figure 14-19.—Giraffe boom.



Figure 14-20.—Hand microphone.

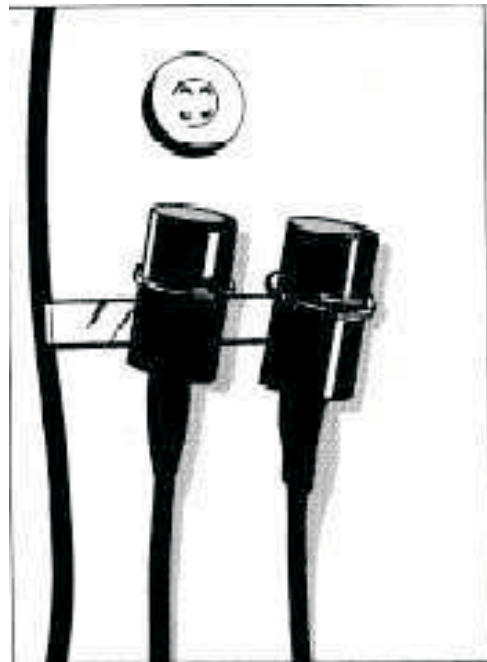


Figure 14-22.—Dual redundancy lavalier microphones.



Figure 14-21.—Lavalier microphone.

that penetrates the “filter” will be muffled when reproduced. Clothing rubbing against the microphone also can create crackling noises.

Some lavalier microphones are termed *dual redundancy*, because there are actually two lavalieres hooked to the same clip (fig. 14-22). Only one microphone is live, but the other serves as a backup in case the primary microphone fails. For this reason, you should not connect both microphones to the same audio slider in the audio control room.

Wireless

The wireless microphone, as its name implies works without cables. It is a standard lavalier microphone connected to a battery-powered radio transmitter. The talent may clip the transmitter to his belt or conceal it under an article of clothing. A small antenna connected to the transmitter sends the audio signal on an FM frequency to the receiver in the audio control room. The signal is then fed to the audio switcher, who controls the input like any other sound source.

Be careful when you use wireless microphones because they may deliver unwanted audio from radio frequencies (RF) in the area, so exercise caution when you use them. A wireless microphone receiver and transmitter are shown in figure 14-23.

STATIONARY MICROPHONES

In addition to the mobile microphone group, you will become familiar with the following four stationary microphones:

- Desk
- Stand
- Hanging
- Hidden

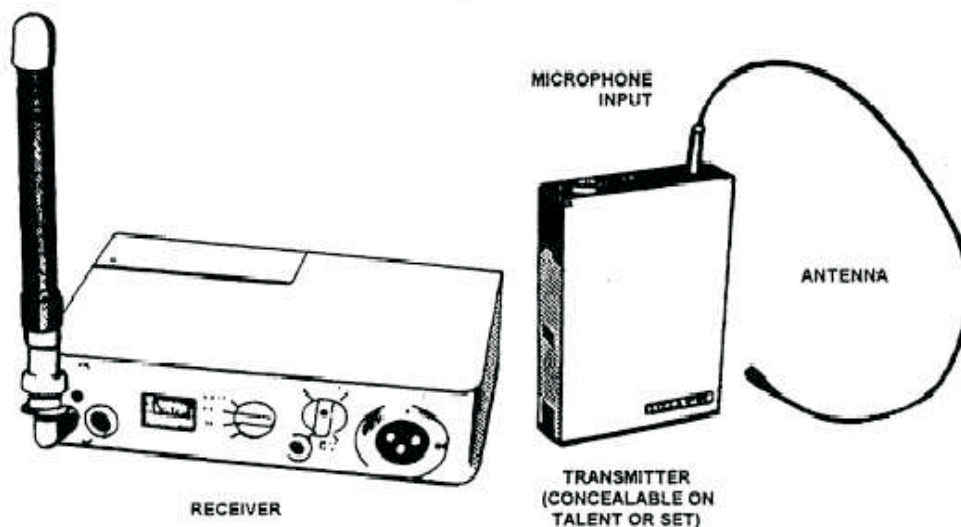


Figure 14-23.—Wireless microphone receiver and transmitter.



Figure 14-24.—Desk microphone.

Desk

Desk microphones (fig. 14-24) are widely used at public hearings, panel discussions and other productions where the talent is working from behind a desk or lectern. Any microphone can be used as a desk microphone, as long as you attach it to a suitable stand.

Since the talent is heard and seen in television, the placement of the desk microphone is influenced by the camera. If the microphone is placed directly in front of the talent, it may obstruct his face. Further, sound

pickup will be influenced when the talent turns his head.

A good starting point for placing the desk microphone is about one and one-half feet from the talent and pointed at his collarbone, as shown in figure 14-25. If the talent turns his head to look at the television monitor or another talent, try to locate the microphone somewhat to that side.

The actual number of desk microphones needed and their placement depends on the quality of the sound produced. If one desk microphone will suffice, then use just one.

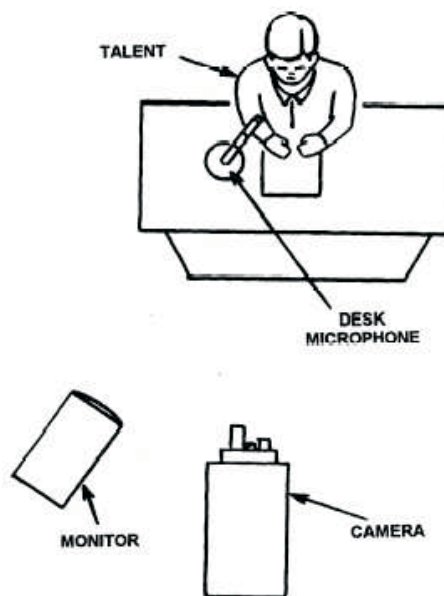


Figure 14-25.—Desk microphone placement.

You should conceal the cables of desk microphones. If a particular desk or table is used almost exclusively with a desk microphone, you can drill a hole into its top and drop the cable to the floor.

Stand

Stand microphones are used when the sound source is immobile and the microphone may be seen on camera.

For instance, you can use several stand microphones to pick up the sound of a vocal or instrumental group. You may also use a stand microphone for the master of ceremonies (MC).

The placement of stand microphones is determined by sound quality, rather than by picture factors. However, stand microphones should be placed so that they do not impede camera movement or picture quality.

Hanging

Hanging microphones are often used when a boom microphone is impractical because of lack of space or when a large set will not permit rapid boom movement. It is simply a microphone hung from the ceiling or overhead by its cable, placing it out of normal camera range.

The sound source should be fairly stationary when you use a single hanging microphone. You can use a hanging microphone for panel discussions and other types of productions where the talent remains immobile at the time of sound pickup. Several microphones located about the set can accommodate moving talents, but the talents must position themselves near the microphone before speaking.

Most hanging microphones do not produce good audio. If placed too close to walls or overheads, an echo or distorted audio is likely to occur.

Hidden

The sound quality of hidden microphones is mediocre at best, and frequently the object they are hidden in or behind distorts the sound. For this reason, you should use hidden microphones sparingly.

One type of hidden microphone is called a **contact microphone**, because it is in direct contact with the object producing the desired sound effect. An example is a microphone attached to a quick-acting watertight door to pick up the sound of the handwheel and dogs.

TELEVISION LIGHTING

LEARNING OBJECTIVE: *Identify the principles of television lighting.*

Earlier in this chapter, we noted that the television camera changes various levels of light reflected from objects in the scene into electrical impulses of varying strength. Therefore, the primary objective in any television lighting setup is to ensure sufficient illumination for the correct operation of the television camera. However, at the same time, television lighting must support or even establish the atmosphere of the set or scene.

Television lighting essentially follows the same principles as photographic lighting (chapter 11). For the sake of clarity, however, we will take a brief look at lighting as it applies to this medium.

COLOR TEMPERATURE

Before we cover the principles of television lighting, we must address color temperature briefly.

Color temperature is the amount of certain colors that make up a particular white light measured in degrees Kelvin (K). Since the television camera changes images into electronic impulses, the wavelengths of light that vibrate at various frequencies and make up the different hues or colors will have an effect on the output of the camera.

The simplest way to think of color temperature, without getting into complicated formulas, is to say that light of a lower color temperature appears more toward the orange end of the scale, while light of a higher color temperature appears more toward the blue end of the scale.

Studio lighting is standardized at 3200°K. Daylight sources are balanced in the range of 5000°K to 7000°K. You do not have to know what a degree Kelvin is specifically, as long as you accept it as a unit of measure and know how color temperature affects the color television picture.

STUDIO LIGHTING

In this section, we cover the following factors that contribute to proper studio lighting:

- Three-point lighting (key light, fill light and backlight)
- Use of the f/stop

- Proper lighting intensity
- Proper lighting placement
- Skin tones

Key Light

The key light (fig. 14-26) serves as the main light source. It provides sufficient light to operate the camera and acts as the reference point for all other lighting. Place the key light in front of the subject and off to the side at about a 45-degree angle, then elevate it 30 to 35 degrees. You may eventually make adjustment for any number of reasons, but this is a good place to start.

Fill Light

The fill light (fig. 14-27) fills in and softens the harsh shadows created by the key light. Position it on the opposite side of the camera from the key light and elevate it 30 to 35 degrees.

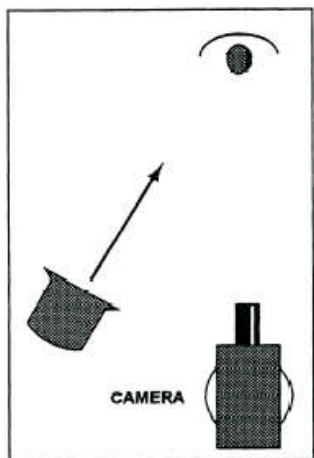


Figure 14-26.—Key light.



Figure 14-27.—Fill light.

Backlight

The backlight (fig. 14-28) is used to separate the subject from the background by casting a rim of light across the head and shoulders of the subject. You should place the backlight at an elevated angle, but be careful not to light the top of the subject's head. A good starting point for the backlight is directly behind the subject, elevated 30 to 35 degrees. If your light is mounted on a stand, move it off to the side a little to get the stand out of the picture.

Use of the f/Stop

Like any other camera lens, a television camera lens produces optimum results when stopped down one or two stops from its maximum aperture. Depth of field also is increased by stopping down. Therefore, your lighting should have sufficient intensity so you can stop down for the best picture possible.

Proper Lighting Intensity

Lighting in television is as important as lighting in basic photography. It has both artistic and technical aspects. Well-planned and executed lighting produces a clear picture with outstanding contrast and depth.

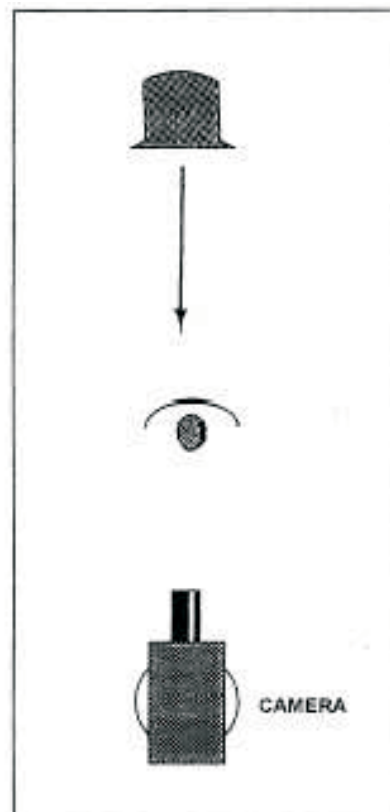


Figure 14-28.—Backlight.

Most television cameras are capable of operating in very low-light levels. However, shooting in dim light may give you video noise and be of generally poor quality.

Proper Lighting Placement

When you set up lighting for a live television production, remember that these productions are continuous; therefore, you must make sure that the lighting you use will be effective from every angle the camera sees in the program. You do not have the luxury of stopping to readjust lighting for each shot. You must make sure that the lighting fixtures and cables do not interfere with the free movement of the cameras. As always, you must plan ahead to avoid embarrassing pitfalls, and then let your television monitor be your guide when making additions to, and subtractions from, your lighting setup.

Skin Tones

Because skin tones are the only “true” means by which a viewer can adjust the color balance of his television set, it is obvious that skin tones must be reproduced accurately and naturally. Proper lighting is the chief way of accomplishing this task.

One way of reproducing natural skin tones is to light the set evenly. If a talent moves from a light scene to a dark scene, the talent’s face should be kept as evenly lighted as possible. The difference between the dark scene and the light scene should be accomplished through backlighting and not the lighting on the talent.

Since extreme shadows take on their own color, you should avoid casting them on the face of the talent. However, do not eliminate facial shadows altogether. Lighten them with fill light instead. A certain amount of shadows are necessary to give character and dimension to the face.

Do not permit color reflections from clothing or scenery to fall on the talent’s face. Likewise, avoid the use of colored lights to light the talent (except for special effects). Save the colored lights for lighting the background.

ENG LIGHTING

When you leave the confines of the television news room or production studio for an ENG assignment, your main concern will be the availability of lights. If you are outdoors on a sunny day, there is not much of a problem. But when you move indoors or shoot at night,

you will need a portable, lightweight and versatile lighting system that either runs on batteries or plugs into a wall outlet without blowing fuses.

Before we cover the components of ENG lighting, keep in mind that the television lighting principles previously covered also apply to ENG lighting.

Portable Lighting Kit

Portable lighting kits will supply you with the lighting equipment you need in most situations. They normally include the following pieces of equipment:

- Lighting instruments
- Tripods
- Short power cables
- Battery packs for each light
- Accessories

Additionally, you may want to include a set of insulated gloves, heavy-duty masking tape or gaffer’s tape and at least one extra bulb for each lighting instrument.

There are many commercially available selections of ENG lighting kits. They usually provide at least enough instruments and accessories for your basic lighting needs.

The color temperature of ENG lighting kit instruments is 3200°K. They are usually variable-focus lighting instruments that may be adjusted for use as a key, fill or backlight.

Accessories

Your light kit should contain accessories, such as barn doors, screens and scrims (fig. 14-29). They are covered in the following text.

BARN DOORS.—Barn doors are metal flaps attached to a ring that is connected to the body of the lighting instrument. They come in either two- or four-door versions. Depending on the type of barn door, you can open or close the doors at the top, bottom or sides to crop the light.

SCREENS.—Screens are small, round or square pieces of metal screening, placed in front of the light to reduce its intensity. They do not change the color temperature of the light. Use screens to reduce or eliminate strong shadows.

SCRIMS.—Scrims are made of clear spun glass or gauze used to diffuse and soften a light. They

decrease the intensity of a light without affecting its color temperature.

THE TELEVISION SET

LEARNING OBJECTIVE: *Recognize the components of a basic television news set.*

All television sets must be designed for the television camera. Everything about the set — size, color, location and props — must be adapted specifically to what the camera sees. A set can be as simple as hung drapes or as complex as a full-scale replica of a ship. However, its actual form must fulfill the artistic aim of orienting the viewers to a place, time or mood.

Just how elaborate your set will be is determined by a number of things, such as the space and materials available, and the manpower you have to design and construct the set.

There are many books on the subject of set design and construction. However, in this chapter we are limiting ourselves to simple set designs that are suitable for use aboard ships and small NMC detachments.

Ideally, you should build an all purpose set — one that is easy to handle and adaptable to a variety of production uses. One set you should consider consists of three 3- by 6- or 4- by 8-foot plywood panels, each 1/4 inch thick. Around the back edges are nailed or screwed 2- by 2-inch furring strips (structural supports) to give it stability (fig. 14-30).

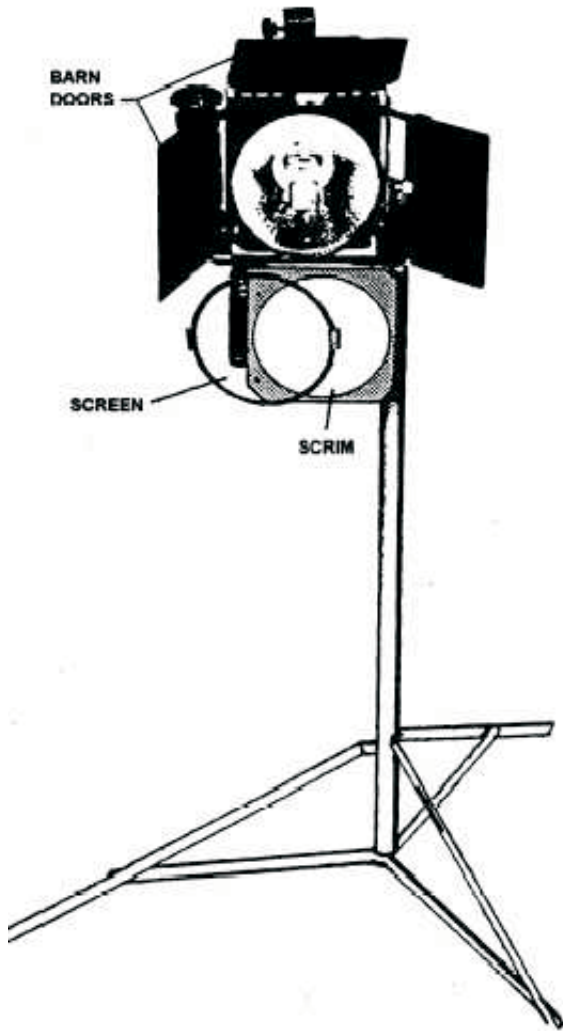


Figure 14-29.—Barn doors, screen and scrim.



Figure 14-30.—Basic television set.

The panels should be hinged together with a type of hardware that allows them to be separated from each other. Paint the panels flat light blue or green, which will make the skin tones look more natural on color television. To reduce glare and reflections from studio lights, you should use flat latex paint.

Before painting the panels, you should check your color choices. Paint small squares of wood and compare them on camera. There must be a distinct difference between set tone and skin tone in order to provide adequate contrast without being excessive. Make sure you select a color that provides suitable contrast when used with either dark or light skin.

SET ERECTION

When you erect a set, you should consider the following three production areas:

- Camera and microphone boom movement. The camera support and microphone boom must be allowed space on the set in which to move. This is especially important for camera angle or position changes and for recording quality sound.
- Talent movement. The talent must have free access if he moves around the set.
- Lighting. The set must provide sufficient lighting for the camera(s).

CREATING THE ENVIRONMENT

A set is used to create the environment or mood of the scene and must be appropriate to the purpose of the program. Sets are generally divided into the following three categories:

- Natural
- Realism
- Fantasy

Natural

A natural set does not represent any specific locale or period and could be, for example, a plain gray background. This type of set can be used for a training program, because there are no background distractions.

Realism

Realism can be achieved in three ways. An exact copy of a period or original scene would be a *replica*, while a setting portraying a type of scene, such as an early sailing ship, is *atmospheric*. The suggestion of an office by the use of a desk and chair, or the shadow of a branch to suggest a tree, is *symbolic*.

Fantasy

The use of abstract shapes or textures can create character and mood. Unrealistic settings have no direct relationship to the real world, but suggest to the viewer a feeling or sense of the location or time.

TELEVISION SHOOTING TECHNIQUES

LEARNING OBJECTIVE: *Identify the basic television shooting techniques.*

Television pictures are subject to the aesthetic rules covered in chapter 12. In fact, because of the wide usage of television, it can even be considered the standard by which we judge most picture composition. However, the following factors unique to television influence picture composition to a certain extent:

- **Small television picture size.** Because of the relatively small size of the television screen, objects must be shown relatively large.
- **Inflexible aspect ratio.** The 3:4 aspect ratio of the picture cannot be changed and all picture elements must be composed to fit it.
- **What the camera sees is what the viewer gets.** The television camera serves as the viewer's eyes; therefore, camera movement, as well as the static arrangement of elements within the frame, must be considered.
- **Time constraints.** Because of the time limitations placed on all television productions, you may not be able to predetermine composition, especially during a live show. Sometimes, all you can do is correct certain compositional errors.

In the television business, the picture on the screen is referred to as a *shot*. A shot may change when either the camera or talent moves. Shots can last for only a few seconds or be as long as a minute or two. In extreme cases, one shot can last the entire program.

As a television camera operator, you must think in terms of shots and master the basic shots of television production.

SHOT CLASSIFICATION

Shots for television (fig. 14-31) are classified in the following manner:

- Extreme long shot (ELS)
- Long shot (LS)
- Medium long shot (MLS)
- Medium close-up (MCU)
- Close-up (CU)
- Extreme close-up (ECU)

Using these terms is the most convenient way for the director to call for the type of shot he wants the camera operator to shoot.

By examining the purposes of the long shot and close-up, you can get an idea of the functions of the other shots. The long shot is used to show as much of the subject as possible while still keeping it recognizable. It is used primarily to show the audience the overall appearance of the whole subject and the subject's relationship to each of the scene elements. This is important, because in subsequent shots (except the extreme long shot), only a relatively small part of the scene will be presented to the viewers. In television work, a long shot is used to orientate the viewers or establish the scene.

The close-up is probably the best television shot. It is one of the most efficient compensations for the small size of the television screen and it is essential to

creating intimacy and getting the viewer "into" the picture. Close-ups are, and should be, one of the most widely used shots for television. The director calls for a close-up for many purposes, the most common of which is to direct the viewer's attention to a specific object or facial expression.

The extreme long shot and extreme close-up are used to describe shots that include an even greater area or a more limited area, respectively. For example, in figure 14-31, the extreme long shot shows the main subject of the scene as a very small mass surrounded by a vast expanse of background and foreground. Consequently, the extreme close-up shows only the cowboy's finger pulling the trigger to discharge his weapon.

FRAMING

In the following coverage of framing for television, we will not dwell on photographic composition, because it was addressed in chapter 12. Instead, we will show you simple line drawing examples of television framing to show you how to present elements within the small 3:4 fixed aspect ratio of the television picture.

Use the following guidelines when you frame subjects or objects:

- **One-talent framing.** When only one talent is talking directly into the camera, place the talent in the middle of the picture to give him maximum emphasis (fig. 14-32).
- **Single-object framing.** When you shoot a single-object, frame it directly in the middle of the picture (fig. 14-33).

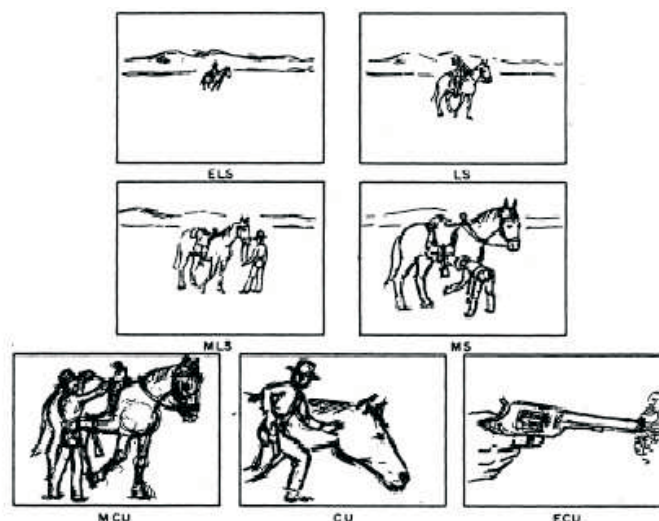


Figure 14-31.—Television shot classification.

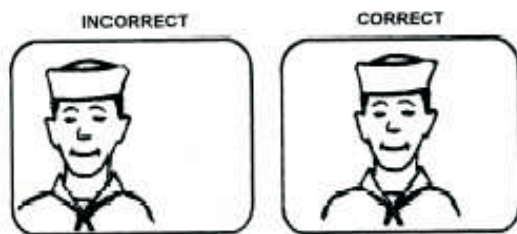


Figure 14-32.—One-talent framing.

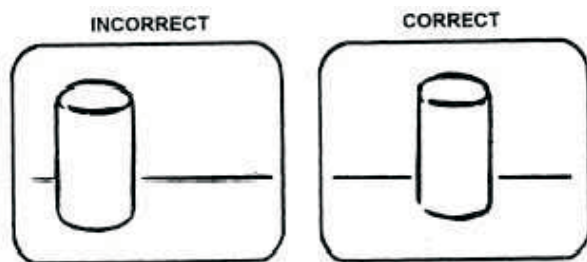


Figure 14-33.—Single-object framing.

- **Framing talent looking left or right.** When the talent looks left or right, give him space within the picture to look (fig. 14-34).
- **Framing talent (extreme close-up).** When you want an extreme close-up of the talent, crop space at the top of his head, not the bottom (fig. 14-35).

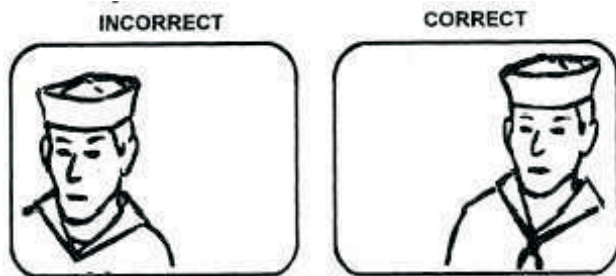


Figure 14-34.—Framing talent looking left or right.

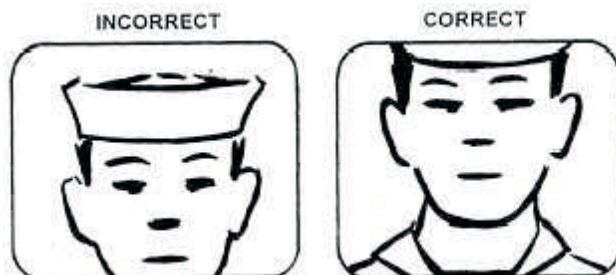


Figure 14-35.—Framing talent (extreme close-up).

- **Framing talents of different heights.** When you frame talents of different heights, do not cut the head off one or the other (fig. 14-36).
- **Framing a moving talent.** When you frame a moving talent, give him room in which to move (fig. 14-37).
- **Framing multiple talents.** When you frame multiple talents, such as a “two-shot,” position the camera as shown in figure 14-38. This helps to establish a relationship between the talents.
- **Framing multiple talents with two cameras.** When you frame multiple talents using two cameras, keep the cameras on the same side of the “action axis” shown in figure 14-39. This will prevent the reversal of screen direction in the picture.

Use high and low camera angles with caution. High angles tend to foreshorten legs, while low angles may distort the body and face. Additionally, be aware of set areas or props that seem to be growing out of, or balanced on, a talent's head (fig. 14-40).

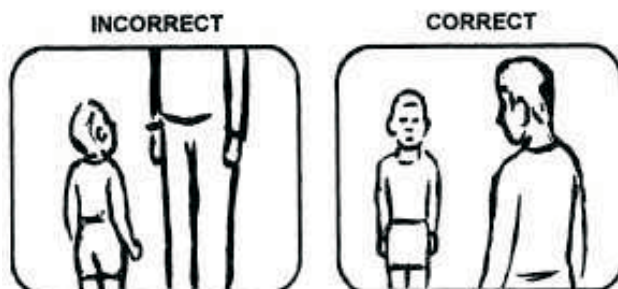


Figure 14-36.—Framing talents of different heights.

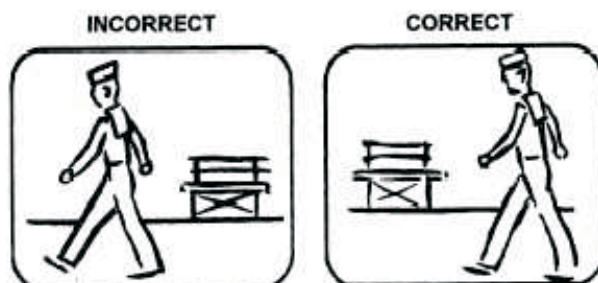


Figure 14-37.—Framing a moving talent.



Figure 14-38.—Framing multiple talents.

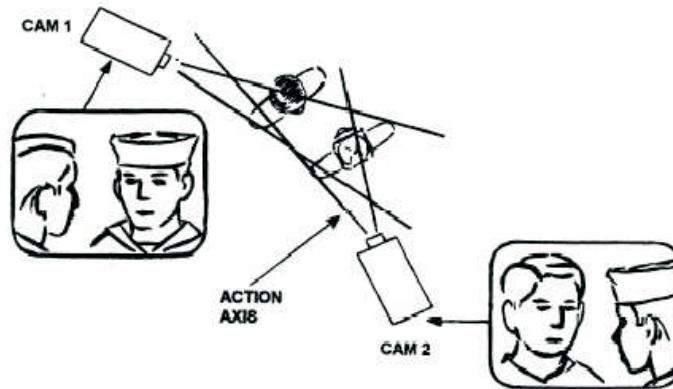


Figure 14-39.—Framing multiple talents with two cameras.



Figure 14-40.—Improperly placed prop and set area.

AREA OF TALENT INCLUDED

The majority of your television pictures will be of people. Accordingly, it is convenient to identify people shots in terms of the portion of the body to be included in the frame.

To help you recognize image size and to frame your talent effectively, you should use the cutoff line system (fig. 14-41). Cutoff lines are natural dividing lines that will help you produce aesthetically pleasing shots.

Use the cutoff lines in the same manner as the six shot classifications previously covered.

NUMBER OF TALENTS INCLUDED

The shot designations that are easiest for you to remember are the ones that refer to the number of people to be included in the picture. When you shoot only one talent, it is termed a **one-shot**, two talents is a **two-shot**, three is a **three-shot** and so forth. However, when five or six people are pictured, it is referred to as a **wide** or **long shot**.

MOVEMENT

Good television needs movement — movement in front of the camera, movement of the camera itself and movement of the picture itself (one picture replacing another).

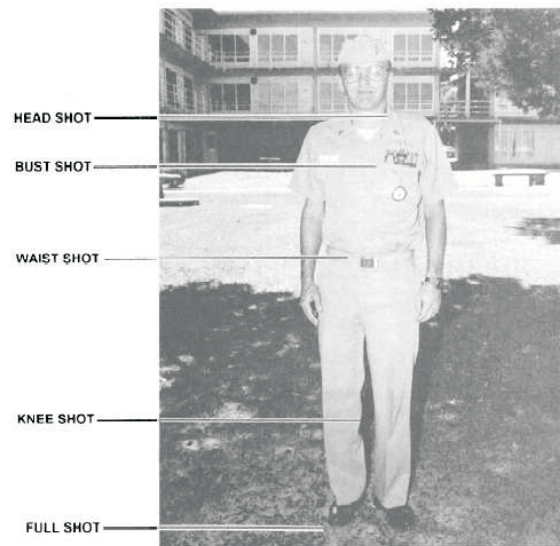


Figure 14-41.—Cutoff lines.

The movements necessary for good television are divided into the following three categories:

- Primary movements
- Secondary movements
- Tertiary movements

Primary Movement

Movement in front of the camera, usually by the talent, is referred to as primary movement. Primary movement toward or away from the camera is stronger than lateral movement, thus creating more emphasis. Exits and entrances are more impressive when they occur toward or away from the camera.

Remember: you should always lead the lateral movement of the talent with your camera. The viewer

wants to know where the subject is going, not where he has been.

Secondary Movements

Secondary movements (fig. 14-42) may be used to follow primary movements or to change or adjust picture composition. You also may use them to emphasize or dramatize a certain portion of a production.

The secondary movements you will become familiar with are as follows:

- Pan
- Tilt
- Dolly
- Zoom
- Truck
- Pedestal

PAN.—A pan is simply the horizontal movement of the camera on a stationary pedestal used to follow primary action. When panning, you should try to avoid “dead space” between subjects. Do this by positioning the talents diagonally instead of laterally, as shown in figure 14-43. From the point of view of the camera, diagonal staging brings the talents closer together.

When the director wants a pan, he will call for **pan left** or **pan right**.

TILT.—Tilting is simply pointing the camera up or down. The reasons for tilting the camera are similar to those for panning the camera. For example, the height of an object can be shown by gradually tilting up on it, or you could tilt down on something to build suspense.

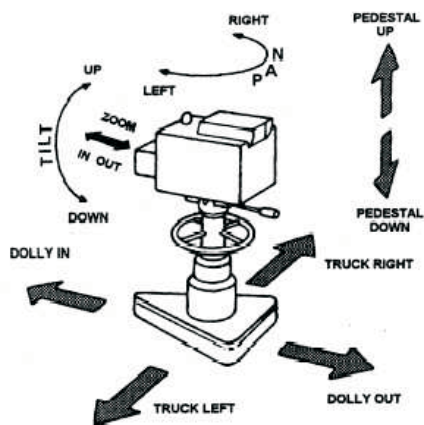


Figure 14-42.—Secondary movements.

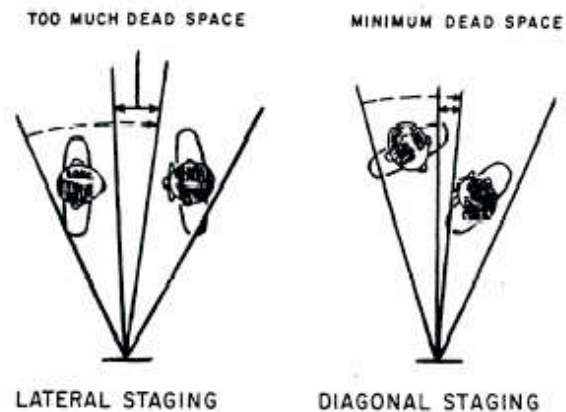


Figure 14-43—Lateral vs. diagonal staging of talent.

The director usually indicates to the camera operator the tilt he wants by ordering **tilt up** or **tilt down**.

DOLLY.—Dollying is moving the camera toward or away from the subject. You can dolly in to increase gradually the size of an object on the screen, or dolly out to produce an opposite effect. Likewise, dollying decreases or increases the field of view.

The director’s orders for dolly are **dolly in** or **dolly out**.

Zoom.—A zoom is made with a zoom lens. It looks like a dolly and is used for the same purpose. During a zoom the camera does not move; therefore, perspective does not change as it does during a dolly.

The director orders **zoom in** or **zoom out**.

TRUCK.—Trucking is the lateral movement of the camera. It is used to follow lateral subject movement or to truck the camera parallel to stationary objects. In either case, camera-to-subject distance does not change.

Truck left or **truck right** are the director’s orders to the camera operator.

PEDESTAL.—When the director calls for a pedestal, the entire camera is either raised or lowered on the pedestal. Pedestalling can provide the audience with a high or low perspective of the subject. The pedestal also can be used to compensate for tall or short camera operators or talents.

Pedestal up or **pedestal down** are the director’s commands.

Keep in mind that secondary movements must have a valid purpose. Do not make them arbitrarily.

Tertiary Movement

Tertiary movement results from a sequence of shots from two or more cameras. When two or more cameras are used, the director can select from a variety of pictures to determine what picture will be telecast and at what time. When more than one camera is used, the director can easily emphasize, deemphasize or show action and reaction in rapid or slow succession.

VIDEOTAPE EDITING

LEARNING OBJECTIVE: *Recognize the fundamental procedures of editing videotape.*

When videotape technology was in its infancy, there was only one way to eliminate unwanted shots — physically cut the tape and splice it back together. This method produced edits that were crude at best, because videotape recording is strictly an electronic process.

Today, the complicated process of cutting and splicing videotape is all but a forgotten art. Now you can edit videotape quickly and cleanly through the use of videotape editing systems or computer software programs.

VIDEOTAPE FORMATS

Before we examine the actual videotape editing process, it is important for you to understand that videotape comes in several different formats. Currently, there are a number of videotape formats used in the broadcast industry, including 3/4 inch super beta, 1/2-inch VHS, 1/2-inch Beta and 8mm, also called Hi8 (fig. 14-44).

There are different schools of thought as to which formats are broadcast quality and which are not, but it is universally accepted that the 3/4-inch super Beta and 1/2-inch Beta are industry standard. These formats are the ones most commonly used at NMC detachments.

Keep in mind that VHS tapes cannot be played on Beta videotape machines, and vice versa (even though they both contain 1/2-inch videotape). Likewise, 3/4-inch super Beta tapes can only be played on 3/4-inch Beta machines and Hi8 tapes are compatible only with Hi8 tape decks.

VIDEOTAPE TRACKS

The electronic information found on a videotape is on the following four tracks:

- Video
- Audio
- Control
- Time code address

Video Track

The video track takes up about three-quarters of the space on a videotape. It is recorded as a series of diagonal lines by one or two rapidly spinning tape heads on the head drum of the VCR.

Audio Track

Virtually all formats of videotape provide at least two distinct areas for the recording of audio information. They are placed in different locations on

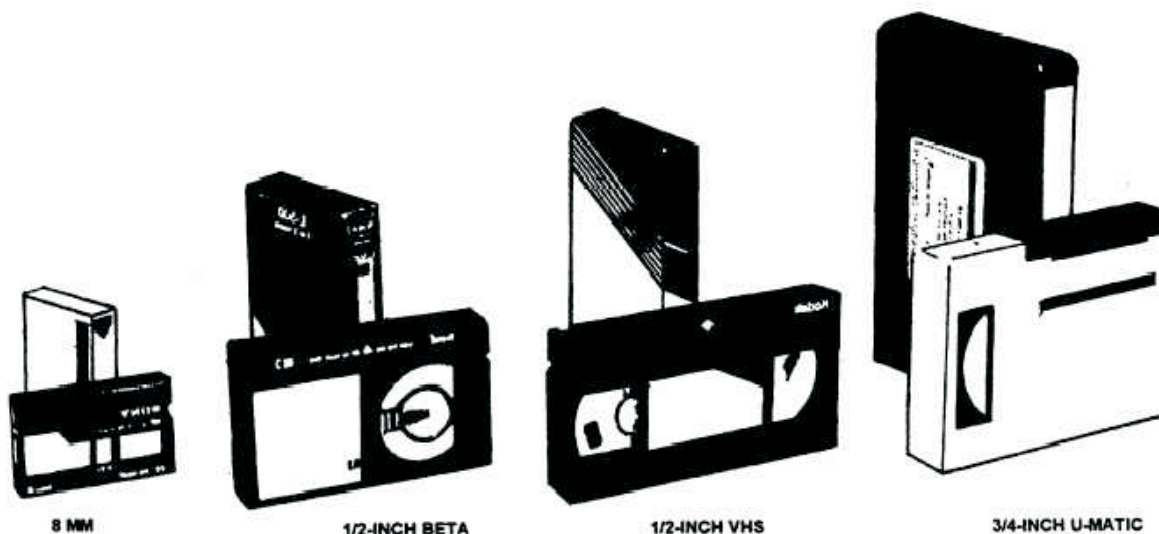


Figure 14-44.—Videotape formats.

the videotape but perform the same as regular audio tape.

Control Track

The control track consists of electronic blips or spikes, called sync pulses, recorded in precise intervals of one-thirtieth of a second. Since it provides the necessary foundation for the editing process, **you cannot edit without a control track on your blank (source) tape in the insert edit mode.** The insert edit mode is explained later.

Laying the control track on a blank videotape is the first step in the videotape editing process in the insert edit mode. Most television studios have a “black burst” generator that produces a crystal black signal you may record and use as a control track. You also can record a control track from another tape — for example, a tape that has color bars and tone.

Time Code Address Track

The time code address track is used to record cuing information for editing. This information may consist of audio or visual time/frame identification.

Figure 14-45 shows the location of all four tracks on a 3/4-inch super Beta videotape.

VIDEOTAPE EDITING PROCESS

Videotape editing is essentially a transfer process in which a playback VCR, containing the recorded segments, transfers its material onto an edit/record VCR that assembles the various segments into a finished form. The editing control unit (ECU) is equipped with highly sophisticated electronic circuitry and allows the operator to control exactly where the old material on the edit/record VCR will end and the new material playing in from the playback VCR will begin.

The precision of the edits depends largely on your reaction time and skill. You must precue both videocassette tapes accurately before the editing begins, since you will control exactly where and when the edit will occur while the two VCRs are rolling.

You will do your editing in what is called an editing cell. Most NMC detachments have one or more editing cells containing the following equipment:

- Playback VCR
- Edit/record VCR
- Television monitor for the playback VCR
- Television monitor for the edit/record VCR
- Audio mixer
- ECU
- Character generator
- A typical editing cell is shown in figure 14-46.

EDITING MODES

On an editing cell, you may make either assemble edits or insert edits. Both are explained in the following text.

Assemble Edits

In the assemble editing mode, the ECU adds control track and program footage (both audio tracks and the video track) to the edit/record VCR at a predetermined in-edit point. The edit/record VCR continues recording the new information and the control track until it is stopped. When you are assemble editing, you are inserting a new control track at each in-edit point and ending a control track at each out edit point. Your video may be unstable (picture tearing or breakup) at the edit points during playback. Therefore, you should allow for extra video after your intended stop/out-edit point — otherwise, you will not

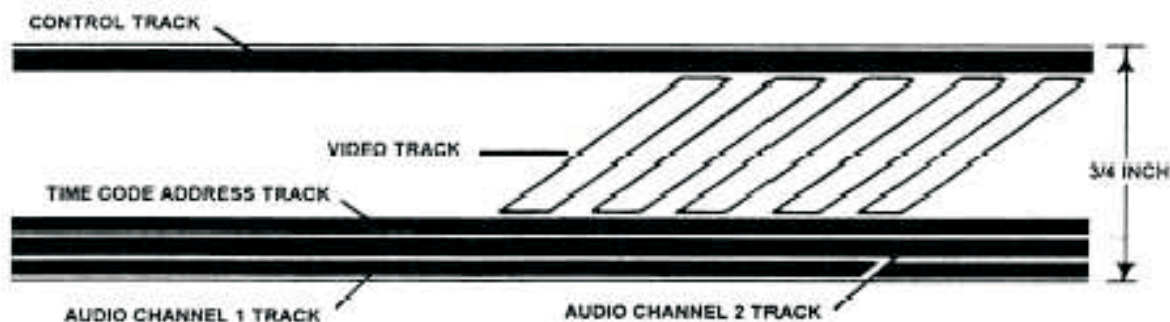


Figure 14-45.—Track location on a 3/4-inch super Beta videotape.

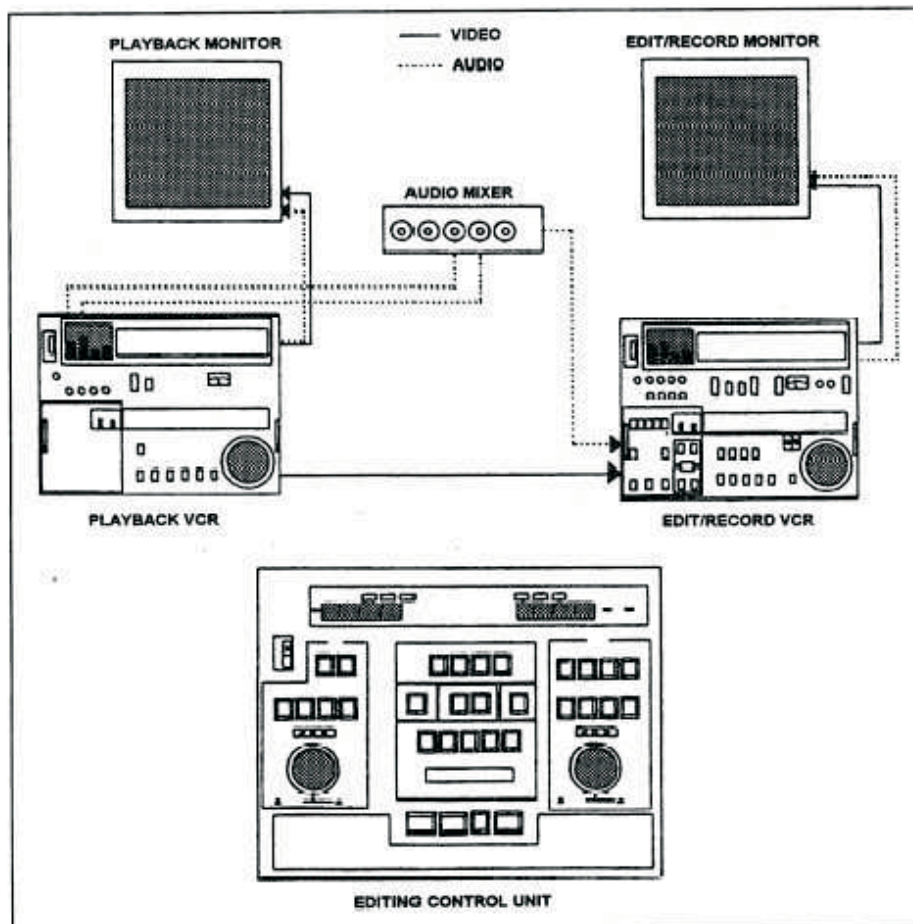


Figure 14-46.—Videotape editing cell.

be able to edit onto the last part of the video. Assemble edits are very convenient because you simply add segments to build the video story or program.

Insert Edits

Insert editing allows you to add or change video or audio separately or together without affecting the control track. As you insert the new material over the existing information, you use the control track already established on the edit/record videocassette to lock the signal into synchronization.

The main drawback of insert editing is that you must lay a long enough control track on the tape before you start editing. A one-hour program tape requires you to lay one hour of black or color bars and tone before you start the editing process.

NOTE: After laying the control track in the assemble mode, be sure to switch to the insert mode on the ECU. If you remain in the assemble mode when you make your first video or audio edit, the end of the edit will look like a green flicker on the television monitor. This is caused by a break in the control track.

There is no way to correct this break without relaying the control track for the entire length of the tape. The best approach for you to take is to stay in either the assemble or insert mode.

EDITING TECHNIQUES

The two basic editing techniques in videotape editing are **continuity cutting** and **compilation cutting**. Both are explained in the following text.

Continuity Cutting

Continuity cutting is the most commonly used method of editing videotape for news or feature releases. It is used when the storytelling is dependent on matching consecutive scenes. Continuity cutting consists of matched cuts in which continuous action flows from one shot to another.

The three transitional devices associated with continuity cutting are the **cutaway**, **cut-in** and **crosscutting**.

CUTAWAY.—When the action shown is not a portion of the previous scene, a transitional device, known as a cutaway, is used to change positions, movements or characters or to denote a lapse of time. This eliminates a mismatch, or jump cut, that would cause the segment to appear jerky or out of sequence. Cutaways are often termed *protection, reaction, insert* or *cover shots* and are thought of as secondary action shots.

For example, if the main thought is centered around a parade, cutaways might consist of closeup shots of the crowd. Children may be shown watching intently, eating candy or applauding; adults may be wearing different expressions of emotion or carrying children on their shoulders (fig. 14-47). These shots are of human interest and are related to the main story, but are not actually a primary part of it.

If you have a good selection of cutaways, often you can make a marvelous story out of an otherwise drab and commonplace event. The cutaway can cover a multitude of camera operator errors and result in the formulation of an exciting segment.

Cutaways should last between three and five seconds.

CUT-IN.—Another method used to denote a lapse of time is the cut-in. Unlike the cutaway, the cut-in is a part of the primary action, rather than the secondary action. For instance, to denote a person climbing a long flight of stairs, you establish the individual at the start of the climb, then cut to a close-up of feet as they take the steps. After you establish the shot (three to five seconds), you cut back to the person at the top of the stairs (fig. 14-48). A person can appear to walk a city block in just a few seconds by showing feet walking or a hand carrying a briefcase.

CROSSCUTTING.—Crosscutting is the old standby of videotape editing. In crosscutting, you use shots from two different actions or events that will finally be related. A time-honored example is the “meanwhile, back at the ranch” style, or the hero riding hard to save the life of the heroine who has been chained to a buzz saw by the villain (fig. 14-49). The action would be cut back and forth between the desperate rider and the saw as it comes dangerously close to the heroine’s head, showing the progress of each, then finally relating them as the rider arrives at the last moment to save the heroine.



Figure 14-47.—Cutaway.

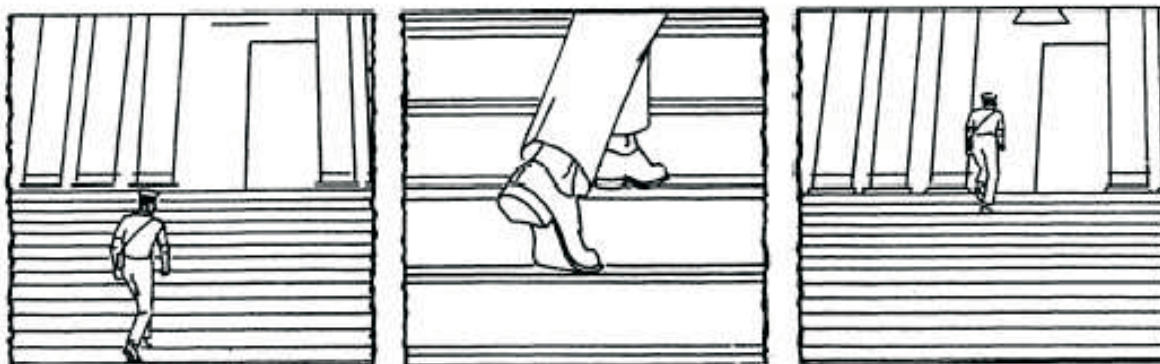


Figure 14-48.—Cut-in.



Figure 14-49.—Crosscutting.

Compilation Cutting

The second method of videotape editing is compilation cutting. This is used in documentary-style stories of surveys, reports, history or travelogues. Segments are tied together through narration. The narrative explains the shots, which may have little or no matching relation. These shots or scenes may be long or short shots, or they may go from long shots to close-ups without any special transitions.

BASIC EDITING PROCEDURES

Before we cover the basic procedures of editing videotape, keep in mind that the editing procedures and techniques in place at your NMC detachment may differ from what is portrayed in this section. For training purposes, let's assume a script has been written and the primary narration has been recorded on the production tape. (This is a normal news/production requirement.) A typical editing sequence might look like this:

1. The editor will work from a log that lists all of the scenes on the tape(s). It may be prepared at the time of the shooting or as the tape is being reviewed at the station or your office. The log will briefly describe the scene and indicate where it is located on the tape (using the counter on the playback VCR).
2. The producer, editor and sometimes the reporter will decide which scenes to use, the order in which to show the scenes and the amount of time you have to tell the story. In some instances (especially at small NMC detachments and aboard ships), one person will make all of these decisions.
3. The editor prepares a blank videocassette with countdown leader and enough control track to cover the length of the story. He then loads it into the edit/record VCR.
4. The raw video is loaded into the playback VCR. Now the editing process is ready to begin.

5. The story is assembled and edited according to the predetermined sequence. Sometimes the audio track is recorded first and the visuals added later. At other times, the sequences are assembled in order, depending on the type of story and available footage.

6. The editor labels the smooth tape with the title of the story, date and run time. A supervisor will review the story and make corrections (if necessary) before it airs.

The technical side of the editing process is fairly easy to learn. With today's technology, the procedure is almost foolproof. Some editing systems use computer software programs that allow you to use Time Code editing to set all of your edit in and out points ahead of time, including special effects, graphics and audio and video mixes and dissolves. The capabilities of your editing system will control the number of special effects you will be able to use with your television production. The latest software programs available allow you to produce professional looking, broadcast quality video, with minimal manpower. Nevertheless, a good videotape editor must have a thorough knowledge of many related skills to provide viewers with a simple, yet effective, message.

VIDEOTAPE SCRIPTING

LEARNING OBJECTIVE: *Identify the format of a script that accompanies a video news release.*

When you write a script to go with a video news release, make sure your pictures tell the story. The narration should supplement them, not overpower them.

A video release (fig. 14-50) is similar in appearance to the radio news releases shown in chapter 13 (administrative information, four-unit heading, release line, etc.), except you use two columns for the actual script. The left column is devoted completely to

PUBLIC AFFAIRS OFFICE
NAVAL AIR STATION SAMARA
POINT KENT, FLORIDA 32505-5484

TELEPHONE: (904) 456-5070
456-5071
DSN: 922-5070
FAX: 456-5072

FOR FURTHER INFORMATION, CONTACT:

LCDR LEE MAZZILLI (PAO)
JO1(AW) JUAN AGUSTO (APAO)

OFFICIAL NEWS RELEASE
(FOR TELEVISION)

PAGE 1 OF 1

RELEASE NO. 17-01

ARMED FORCES DAY

May 15, 2001

60 SECONDS

FOR IMMEDIATE RELEASE

VIDEO

AUDIO

NEWSCASTER:

NEWSCASTER:

Armed Forces Day was celebrated today at Naval Air Station Samara, and the red carpet was rolled out for seven thousand visitors.

SAILORS MARCHING

(ON CUE) Many guests arrived early (NAT SOUND) enough to see a contingent of sailors parade on Burnitz Field. They are recent graduates of Computer Repairman "A" School and will soon report to their assignments with ships of the fleet. Many spectators at today's parade have sons or daughters marching in the ranks.

ADMIRAL ON STAND

(ON CUE) Rear Admiral Davey Jones, (NAT SOUND) the Vice Chief of Naval Education and Training, inspected the graduates as they paraded by the reviewing stand.

EXHIBITS

(ON CUE) Visitors also saw special (NAT SOUND) exhibits showing the missions of the tenant commands at the air station. A panel of judges, made up of Samara residents, chose the most outstanding exhibit.

MAYOR

(ON CUE) Mayor Jack Crevalle awarded (NAT SOUND) the top prize to Petty Officer First Class Kenneth Aidem, representing the air station's Crash and Salvage Division.

###

Figure 14-50.—Video news release.

the video, or visual section, and the right column to the audio, or sound section, of the release.

Note that all of the information in the video column is in capital letters. This tells the news director that the information is there for information purposes only and is not to be read by the talent.

Below each video entry (except the first), in parentheses, is the phrase NAT SOUND. This tells the newscaster he will speak over the natural sound recorded when the scene was shot. If there was no natural sound present, you will use "SIL" for silent.

At the beginning of paragraphs two through four in the audio column are the words *ON CUE*. This instructs the newscaster to look at the television monitor in the studio and wait for the scene described in the video column to appear before continuing.

In a standard video news release, lines average five words in length and are read at an average pace of 28 to 32 lines per minute.

TELEVISION PROGRAM MATERIALS

LEARNING OBJECTIVE: *Identify the television program materials available from AFRTS-BC and the Navy Motion-Picture Service (NMPS).*

AFRTS-BC provides television news, information and entertainment programming for the exclusive use of AFRTS outlets, including all NBS detachments. It is the only source authorized to negotiate, procure and distribute commercial and public broadcast programming.

AFRTS-BC acquires its programming at a minimal rate because of a special agreement with distributors, performers' unions, guilds, music licensing organizations and industry regulatory agencies. Therefore, special handling procedures and use restrictions are required to ensure security of the videocassettes and prevent copyright violations. These regulations and restrictions protect the rights of the commercial broadcasting industry as guaranteed by the U.S. Civil Code.

This section is intended to acquaint you with the different program materials offered by AFRTS-BC. For more detailed information, consult *American Forces Radio and Television Service (AFRTS) Program Materials, DoD Directive 5120.20-R, Appendix F*.

TYPES OF AFRTS TELEVISION SHIPMENTS

AFRTS currently circulates programs to outlets on videocassettes. Program packages are broken down into the following categories:

- Television weekly (TW)
- Television weekly "B" (TWB)
- Television weekly "C" (TWC)
- Television priority "A" (TPA)
- Television priority "B" (TPB)
- Television library (TL)
- Television temporary library (TTL)
- Television material (TM)
- Television weekly (TW)

The Television Weekly (TW) is the largest package of television programs (approximately 80 hours) supplied to deployed ships and some remote NMC outlets that do not have satellite capabilities. This package features U.S. broadcast and cable network programs, preteen and preschool programs, talk shows, soap operas, quiz shows, movies, mini-series, information, religious and filler programming. For deployed units, one package is in use while two others are either at the outlet waiting to be used or en route. The TW package is circuited, meaning it is passed from one station to another along a predetermined "circuit" of several stations.

Television Weekly "B" (TWB)

The Television Weekly "B" (TWB) is essentially the same as the TW package but does not contain the preteen and preschool programming. It is circuited to Super-SITE and SITE ships and contains approximately 72 hours of programming.

Television Weekly "C" (TWC)

The Television Weekly "C" (TWC) is a scaled-down version of the TWB (roughly 42 hours of programming) and is circuited to smaller ships and submarines.

Television Priority "A" (TPA)

The Television Priority "A" (TPA) contains about 12 hours of timely programming. It is not circuited but

is sent directly to authorized outlets (primarily Navy ships) for use at the earliest possible date. If your detachment has access to SATNET (the worldwide AFRTS 24-hour satellite network), you will not receive the TPA package.

Television Priority “B” (TPB)

The Television Priority “B” (TPB), while not currently in use, is reserved for possible future application.

Television Library (TL)

The Television Library (TL) contains accountable library videocassettes shipped periodically to full-service, land-based outlets and fleet circuit managers for permanent retention. It is used to supplement normal programming or to fill emergency requirements.

Television Temporary Library (TTL)

The Television Temporary Library (TTL) consists of accountable library videocassettes provided to meet special short-term requirements, such as holidays and anniversaries, or when AFRTS-BC requires that the materials be returned within one year. Return dates and instructions appearing on TTL packing lists must be strictly followed.

Television Material (TM)

The Television Material (TM) contains nonaccountable library materials provided for single or repeated use and subsequent local disposal. Other usage conditions may exist and will be explained on the packing list.

CUING AFRTS VIDEOCASSETTES

Most AFRTS videocassettes that are longer than 15 minutes contain AFRTS system cues at the end of the programs. The system cue is contained on a five-second segment that identifies AFRTS as the program source. It also alerts the control board operator that he must make a transition in five seconds.

Videocassettes 15 minutes in length or less do not contain system cues but are cue-dotted by AFRTS-BC. Cue-dotting is accomplished by inserting the proper series of cues electronically during videocassette editing. The “dots” are actually small white squares that appear in the upper right-hand corner of the

television screen. Multiple videocassette programs are cue-dotted at 10, seven and two seconds from the end of each tape, except the last tape of the program. This tape will contain an AFRTS system cue instead of the cue dots.

EDITING AFRTS TELEVISION MATERIALS

AFRTS television program materials are intended to be used as received. Outlets may not duplicate, edit or delete any part except in the following circumstances:

- To remove host-country sensitivities. (This must be done on a duplicate (dub) tape and not the original AFRTS-BC videocassette.)
- To air short excerpts for the promotion of upcoming programs (not to exceed two minutes).
- To remove commercials or commercial slugs, such as “Place Commercial Here” and “Splice Here.” If this happens, board-fade the unwanted section and cover it with an AFRTS or locally-produced spot.

NOTE: Do not confuse commercials with sponsor or product mentions or identification, visual or aural, that are integrated into openings and closings in a way that makes their retention necessary for program continuity.

- To shorten the length of videocassettes specially designated by AFRTS-BC for future use.
- To repair damaged videocassettes.

Make sure you consult *American Forces Radio and Television Service (AFRTS) Program Materials, DoD Directive 5120.20-R, Appendix F*, for further details.

HANDLING AFRTS VIDEOCASSETTES

Cleanliness is paramount when you handle AFRTS or any other types of videocassettes. Areas where television materials are stored or handled should be clean at all times and, if possible, ventilated with filtered air so that dust is blown out, rather than drawn in. AFRTS recommends that smoking, eating and drinking be prohibited in these areas.

Videocassettes must be kept in their shipping containers in a secure, atmospherically controlled environment until they are ready for use and then returned immediately after use. This keeps the tapes clean and virtually eliminates the possibility of mixing programs with other videocassette shipments.

In general, the recommended storage conditions for videocassettes are a relative humidity of 50 to 60 percent and a temperature of between 60 and 80 degrees.

Do not leave videocassette containers open! An open container is an invitation to dust and debris. If you have a dirty container, remove the videocassettes and vacuum the container. When the container is clean, replace the videocassettes in the order specified on the packing list.

NAVY MOTION PICTURE SERVICE

The Navy Motion Picture Service (NMPS) in Brooklyn, N.Y., provides most Navy ships with

first-run movies on Beta videocassettes. The tapes may be aired either at sea or in port. Eligibility for NMPS service is based primarily on deployment duration, tape storage capability and security.

You may retain NMPS videocassettes for three or four years, depending on the lease agreement with the particular movie companies and NMPS. Lease expiration dates are indicated on each videocassette case and its accompanying synopsis card.

For further information about the NMPS Videocassette Program, refer to the *Navy Entertainment Movie Program Administration and Operations Manual*, NAVMILPERCOM 1710.1.

CHAPTER 15

RADIO AND TELEVISION INTERVIEWING

One of the most difficult tasks you will encounter as a Navy Journalist is serving as a radio and television interviewer. In the space of a few minutes, an interviewer must draw out answers and reveal the attitudes of an interviewee that would normally take hours or even days of ordinary conversation. He must do it with various types of people, in front of cameras, under hot lights and in front of microphones.

As a broadcaster serving at an NBS detachment or aboard a SITE-equipped ship, you will conduct a wide variety of radio and television interviews. Your interview subjects may be from within the command—for example, PN1(AW) Boate, the command Sailor of the Year; Lt. Cmdr. Frost, the newly reported chief engineer and former Miami Dolphins special teams player; or SA Doe, the mess cook who rescued a drowning youngster from a public swimming pool. Conversely, you may be asked to interview music and motion picture stars, politicians, community leaders and coaches of youth sports teams.

Regardless of the importance or prominence of the subject, you must not forget to take the following three actions to make every radio and television interview a success:

- Extract the facts
- Emphasize the important details
- Keep the audience informed

TYPES OF INTERVIEWS

LEARNING OBJECTIVE: *Identify the most common types of radio and television interviews.*

With few exceptions, interviews for radio and television are generally in one of the following three categories that are covered in the succeeding text:

- Opinion
- Information
- Personality

OPINION INTERVIEWS

While personal opinions may surface in other forms of interviewing, the thoughts or opinions (whether right or wrong) of the interviewee are in the spotlight in this type of interview.

The opinion interview is usually applied in broadcasting to support expanded news formats. A common form of this type of interview is the “man on the street” interview. The broadcaster stations himself in a busy public area and stops individuals to ask a question on a specific issue. Your station manager might send you out to ask for opinions or comments on a radical new fashion or fad, the completion of a commissary or base exchange, the outcome of a sporting event or countless other situations. (See figure 15-1.)

Commercial stations usually ask a question dealing with a highly controversial issue. However, policy dictates that NBS detachments and other military broadcast outlets refrain from posing questions that would adversely affect the morale of U.S. personnel or serve to undermine the commander’s authority. Check with your supervisor or the PAO if you plan to do this type of interview.

When you use the opinion interview, avoid the “stacked deck” method of gathering data—that is, do not seek comments from one particular group of people. Gather your responses from young and old,



Figure 15-1.—On the street interview.

male and female and people of various ethnic backgrounds. This will give your completed program credibility.

In addition, do not ask a “loaded” question during an opinion interview. Note the following example:

Example: “Excuse me sir, don’t you think the new commissary is being constructed in an inaccessible location?”

Such a question leads the interviewee toward a particular response. In the preceding example, chances are very good the interviewee will respond with a yes answer. (Formulating interview questions will be covered later in this chapter.)

Before you conduct an opinion interview, prepare your questions in advance and make sure you research the topic thoroughly. The audience does not expect the man on the street to be an expert, but it expects the interviewer to be thoroughly knowledgeable of the subject being discussed.

INFORMATION INTERVIEWS

The information interview is the most common form of interview used at NBS detachments. The civilian broadcast equivalent is the public service interview. Your subject may be the chief master-at-arms discussing local activities during Crime Prevention Week or the MWR director talking about what activities are planned at the recreation center. You might do an interview with a physician for a health series or the CO for your weekly captain’s call.

Whatever the topic may be, your goal during the information interview is to inform the audience. You should research the topic and prepare your questions well in advance. You do not have to show your questions to the interviewee before the program, but it helps if you give your subject an idea of what you will ask. This helps you keep your topic on track during the interview.

As a Navy broadcaster, you may be assigned to cover a wide range of adverse news situations. When you conduct an interview in conjunction with an accident or disaster, be sensitive to the feelings of others. Be careful how you phrase your questions and watch your tone of delivery. Use tact in finding out the five Ws and H and double-check your facts. If you need assistance in gathering the facts, consult your colleagues in the public affairs office.

PERSONALITY INTERVIEWS

Another form of interview often assigned to Navy broadcasters is the personality interview. In this case, the person is important because of what happened to him, what he has done or the position he holds. It may be a timely feature story interview, a regular series or a celebrity interview.

During the personality interview, you must be versatile enough to make your delivery match the event. You must be sensitive to the situation and not antagonize the interviewee by making light of something he takes seriously.

Often, Navy broadcasters will be assigned to interview famous recording artists, motion picture stars or sports celebrities. Be aware that celebrities are accustomed to being interviewed and are well-seasoned at this art. If you are not careful, the celebrity you are interviewing may try to run the show.

Again, the key to producing a good personality interview is research. Read every available newspaper or magazine article on your subject. Know about his past, his rise to success, what he is doing now and his plans for the future. Write intelligent and stimulating questions. Personality subjects appreciate new material and grow weary of answering the same questions time and time again.

INTERVIEW METHODS

LEARNING OBJECTIVE: *Recognize the most common interview methods.*

What method should you use to conduct an interview? The answer depends on the subject, time, place and other intangibles that make each interview different.

In most circumstances, you will use one of the following three interview methods to get the required information for your program:

- Scripted
- Semi-scripted
- Ad-lib

SCRIPTED

In the scripted interview, all the questions and answers are prepared in advance and the interviewee(s) simply read(s) the prepared text.

While certain high-ranking officers and officials involved in sensitive or security areas may prefer this

method, the scripted interview must not sound like it is being read. If it does, then the program becomes stilted and the conversational aspect of the interview is lost. Likewise, listeners or viewers will lose interest and tune out the message you are trying to deliver.

Unless security or policy concerns dictate the use of the scripted interview, you should avoid it.

SEMI-SCRIPTED

The semi-scripted interview method is the best for most interviews. With this interview, the interviewer researches the subject and interviewee, discusses possible questions in advance and perhaps even rehearses the interview. This method provides an excellent balance between the ad-lib (covered next) and the fully scripted method and is personal, yet focused.

AD-LIB

While all interviews should be conversational, the ad-lib method can carry this to the extreme. The unprepared atmosphere of the “just sit down and start talking” method can cause stuttering, repeated questions or answers, off-the-subject discussions, long pauses and security or propriety violations. For these reasons, you must be focused when you use the ad-lib interview method.

Areas where the ad-lib method can be used include occasions of spontaneous news, such as on-the-scene reports and other “live” topics of interest.

INTERVIEW FORMAT

LEARNING OBJECTIVE: *Recognize the areas that comprise the format of an interview.*

Now that you know the different types of interviews and the methods with which to conduct them, we will examine the standard interview format. Simply stated, all interviews have the following three parts:

- The opening
- The body
- The closing

THE OPENING

The opening clearly identifies you, your subject and the topic. This allows your audience to know “up

front” whether the interview has any direct interest to them. Additionally, the opening can give your location to establish a local tie-in or explain any background noises.

THE BODY

The body is the interview itself — the actual questions and answers. At this point, the interview takes shape and becomes a reality.

THE CLOSING

The closing is an abbreviated form of the opening. During the closing, you can summarize briefly the content of the interview and once again identify yourself and your guest.

The opening and closing may be the most important parts of the program, since the opening grabs the audience’s attention and the closing provides a conclusion to the story being told.

After you have determined the focus of the interview and formulated your questions, you may write and record the opening and closing before you talk to your guest (if time permits). If you want ambient (natural) sounds for the opening and closing of a radio interview, take your script along and read it at the interview site. For television, memorize those parts you will do on camera. Of course, if you need additional information that you will gather during the interview, you can record the opening and closing afterward.

Keep in mind that you may deviate from this interview format. Be creative with visuals or audio and vary the wording of the opening and closing so your audience is not barraged with “carbon copy” interviews.

LIVE AND TAPED INTERVIEWS

LEARNING OBJECTIVE: *Identify the types of live and taped radio and television interviews.*

Only under the most extraordinary conditions will you conduct a live television interview; therefore, we will not cover it in this section. However, when you plan a radio interview, you should consider whether you want to present it live or on tape and address the concerns of taped television interviews. Both the live and taped interview methods are covered next.

LIVE INTERVIEWS

Live interviews, especially opinion interviews, are difficult to control from both a propriety and sensitivity aspect. However, there are several ways you can conduct live interviews on radio. They are as follows:

- Studio
- Remote
- Telephone

Studio

The studio interview is usually either a personality or informative interview. Make sure you have enough microphones in the studio for all interview participants. Although a common setting for a live radio interview, the studio interview tends to present a sterile atmosphere. Additionally, a strange location may intimidate the guest, preventing him from really “opening up.”

Remote

The remote interview is either the informative, personality or “man on the street” type of interview and it is often conducted at a specific event. The major disadvantages of a remote interview are the limitations in station equipment and the lack of control over the environment. Nevertheless, this type of interview gives you the advantage of timeliness. (See figure 15-2.)

Telephone

The telephone interview can be either an opinion, an informative or personality interview. Good audio levels are sometimes hard to get during a telephone

interview, so make sure you consult your engineer before airing the interview live. Furthermore, make sure you inform the interviewee of your intentions before you air the discussion live.

TAPED INTERVIEWS

The taped or “canned” interview is the preferred method of presenting a radio or television interview. Although it usually lacks action, presence and spontaneity, the taped interview gives you total control of timing, format and content and it allows you to choose the means or location to bring out the best in your guest and subject.

When you tape an interview from a remote site, make sure the background noise enhances the interview, rather than disrupts it. Your knowledge of the directional capabilities of microphones and selecting the correct one will help you in this area.

You can respond quickly to news events by taping interviews over the telephone. Use only portions of the interview as news inserts or actualities because the audio quality is generally poor and would become distracting over a long period. If your questions are to be used as part of the interview or actuality, make sure the audio levels are balanced.

You may have no choice as to whether you do a television interview in the studio or as a remote. If you do have a choice, the studio is preferred for a self-contained interview program. The studio provides a controlled environment. The sets are ready, shots and camera movements are planned, audio is checked well in advance and the crew is prepared long before the interview begins. As you learned in chapter 14, the set determines the tone of the interview. Viewers form their first impression from the set. It should complement the interview and not compete for the viewers’ attention.

Many of the radio or television interviews you do will not be in a studio. By recording an interview on location, you add excitement, realism and a sense of being there. Often an interview subject is much more comfortable in his own office or surroundings — rather than in a studio — and this usually leads to a better interview.

Before you tape a remote interview (if time permits), survey the location to avoid problems. Your primary consideration should be checking the acoustics and deciding if ambient noise will be distracting. The use of background noise can enhance



Figure 15-2.—Remote interview.

the interview if it is unobtrusive and blended at a level that does not overpower the conversation. Remember that your equipment may record noise you are not aware of from air conditioning or other electronic equipment. Identify an alternate location if you think you will encounter problems.

INTERVIEW PREPARATION

LEARNING OBJECTIVE: *Identify the preparatory considerations of radio and television interviews.*

The preparation considerations for radio and television interviews are similar. Whether you are assigned an interview or tasked to develop the program yourself, thorough planning is essential.

In this section, we cover the following four basic interview-planning steps:

- Arranging the interview
- Researching the subject
- Formulating questions
- Arranging transportation

ARRANGING THE INTERVIEW

Before you arrange an interview, make sure the potential interviewee is an expert on the subject. Just because Ens. Isobar works in the weather office does not mean she knows the most about hurricanes and tornadoes.

Once you know who you want to interview, call that person and identify yourself by name, rank and office. Tell him what subject(s) you want to cover and suggest a time, date and location.

End the conversation by recapping the arrangements agreed upon. If the interview is more than a day away, contact him a few hours in advance to confirm the arrangements.

RESEARCHING THE SUBJECT

By this time, you should know the important role research plays in interviewing. Your audience expects you to be knowledgeable and the interviewee expects you to know about him or the topic of the interview. The more you know, the better will be your questions. In fact, it is a good idea for you to go into an interview knowing all the answers to the questions you will ask.

The following are some tips to help you research your subject:

- Check with the appropriate public affairs office for a biography or fact sheet if the story involves military equipment, a distinguished visitor or key officer. Also look for guidance regarding topics that might be sensitive in nature.
- Gather useful background materials at the library (magazine or newspaper articles, encyclopedias, reference books, technical manuals, etc.).
- Know where and how to find the point of contact for the subject.
- Seek local expertise at the appropriate agency and talk to these people about the subject or topic of your interview. (This adds depth and background to the program.)

Let your research material guide the interview, not control it. While conducting the interview, remember that you represent the audience who does not have the facts you have.

FORMULATING QUESTIONS

The key to a good interview is asking clear, concise questions. Determine the focus of the interview and formulate your questions around a primary idea. Be prepared to leave yourself open to new information you may not have known. You might have to switch your focus or incorporate new information into your final product.

Different types of interviews have unique approaches with varying question types. The length of time you have also determines the questions you can ask. If you have ample time, you can discuss the topic at length. On the other hand, if time is at a premium, word your questions to get to the point quickly.

Keep the following suggestions in mind when you formulate your interview questions:

- Ask open-ended questions — questions that cannot be answered with only a “yes” or “no” reply. For example, if you are interviewing the head coach of a football team, you would ask, “Describe your team’s attitude for today’s game,” instead of, “Is your team up for today’s game?” If you must ask a question that is answered by a yes or a no, ask the interviewee to explain his answers in more detail. Further, by using the five Ws and H as the first word in your

question, you assure yourself of more than a yes or no reply.

- Be simple and direct. Do not beat around the bush in asking a question or by asking multiple questions. This only confuses the interviewee and your audience.
- “Off-the-record” conversations are exactly that — off-the-record. Do not ask questions previously discussed in confidence during the interview.
- Avoid asking trite questions. For example: “Today our guest is Senator Spike Moss, Republican from Hawaii. How are you today?”
- Do not ask your guest embarrassing or antagonistic questions. For example: “Coach, you gave your catcher the steal sign with two outs and your team down by seven runs. He was thrown out easily at second base. This violates a basic baseball strategy even a 5-year-old would understand. Why did you do it?”
- Avoid using military jargon. If you must use jargon or acronyms, explain them. Do not assume your audience knows the topic as well as you and the interviewee know it.
- Do not comment on responses in trite ways or act surprised. For example: “I agree” or “You don’t say!”
- Use questions that will interest your audience. Ask yourself what it is they would like to know from the subject.
- Prepare more questions than you think you will need. This will ensure the best possible coverage of the topic.

ARRANGING TRANSPORTATION

“You can’t get there from here.” That is exactly what will happen if you do not plan your transportation requirements early. The availability of transportation varies from command to command. Regardless of whether your unit has its own vehicle or you rely on a motor pool, advance coordination is necessary. In some cases, the organization you are assigned to cover may provide transportation. However, you should not depend on it. Getting to the interview site is **your** responsibility.

EQUIPMENT CONSIDERATIONS

LEARNING OBJECTIVE: *Identify the equipment considerations that apply to radio and television interviews.*

You must pay particular attention to the technical aspects of interviews, especially those for television. As you discovered in chapter 14, any television production is a complex team operation, which means a lot of planning will go into the interview.

TELEVISION

As the talent of a studio interview for television, your involvement with the actual setup procedures (lights, cameras, etc.) will be limited. You must remain focused on the task at hand — preparing for the interview. (See figure 15-3.)

The opposite is true when you shoot interviews at remote locations. You will be accompanied by another member of the ENG team, and between the two of you, you must handle the duties on both sides of the camera.

The following is a checklist you can use to prepare for a television interview at a remote location:

- Check your equipment cables to make sure you have the right ones and they are all working.
- Check all batteries the day before the interview. If they are not sufficiently charged, you can charge them overnight.
- Pack a sufficient amount of videocassettes and make sure they are either new or bulk erased.
- Check the condition of the camera and the camera lens.



Figure 15-3. —TV studio interview.

- Run a test with the camera, recorder and microphones to make sure each component functions properly.
- Inventory all of your gear — the camera, viewfinder, cables, microphones, spare batteries, spare videocassettes, headsets, lighting gear and other necessary equipment.
- Run a test of the lighting kit to make sure it works properly.
- Check your transport cases and containers to make sure they are available and in good condition with working latches.

RADIO

Use the following checklist to help you prepare for a radio interview:

- Check the record and playback functions on your reel-to-reel or cassette tape recorder. Make sure you are recording at the right speed. If necessary, clean the heads or have it done by an engineer.
- Make sure the microphones are working and check the quality of the audio. You may have state-of-the-art equipment and the best technical crew around, but it is best for you not to leave anything to chance.
- If batteries are used to power the recorder or operate the microphone, make sure they are fresh and take along spares.
- If you plan to use AC current, make sure there is an electrical outlet close to the interview location and that the power cord will reach.
- Spot-check the playback after the interview to be sure you have something on tape, but do not give the interviewee the opportunity for a retake.

HELPFUL INTERVIEW HINTS

LEARNING OBJECTIVE: *Recognize the helpful hints used in radio and television interviews.*

You have selected the interview method and format, arranged the interview, researched the subject, formulated the questions, arranged transportation and checked your equipment. Everything is on track and pointing toward a successful interview. What else should you do?

Although not an all-inclusive list, the following helpful hints will make the difference between a good interview and a great interview.

BE PROMPT

Nothing is more exasperating than an interviewer who has little concern for timing. You should arrive at the interview site well before the scheduled time to set up the lights, camera and the recording equipment. When you are late for an interview, your subject may be less cooperative than he might have been, and in some cases, it may mean less time for you to ask all those important questions.

MAKE YOUR SUBJECT FEEL COMFORTABLE

If this is your subject's first interview, he will probably be nervous. Some common signs of nervousness include the following behaviors:

- Tapping one's pencil or fingers on the desk
- Infrequent or nonexistent eye contact
- Pulling away from the microphone
- Excessive stuttering or stammering
- Very short answers to your questions
- Frequent interruptions of your questions

Sometimes you can make your subject feel more comfortable by talking about other things, and therefore, take his mind off the interview. You can do this during a spot break for live interviews or at a logical stopping point for taped interviews. Furthermore, since everyone has a sense of personal space or a "comfort zone," you should select a seating arrangement that your guest finds comfortable. One caveat to this strategy is that you should not compromise the quality of the finished product in favor of comfort. Explaining your technical requirements to the interviewee will help.

BE ATTENTIVE

The most important characteristic of a good interviewer is being a good listener. Your subject will be more cooperative if he perceives that you are interested in what he has to say. Good eye contact and by your making the appropriate responses at the right time will show the interviewee that you are paying attention and want to know more about the subject.

Always listen to what your subject is saying. Some interviewers are more concerned about what they are going to ask, rather than what the subject is saying — **stay clear of this trap**. Interviewees occasionally answer the question you are about to ask, so be alert and adjust your questioning strategy accordingly.

By being an active listener and asking the appropriate questions, you can keep your interview on track and get the information you need in as short a time as possible. However, if you receive obscure, contradictory or confusing answers to your questions, ask follow-up questions to clarify the point. If the interviewee strays in his answer to a question, rephrase or repeat the question to get him back on track.

When you listen attentively, you also may pick up on a fact you did not know about and slip in effective follow-up questions.

Visualize the editing process while you are recording the interview. If your subject tends to ramble when answering questions, pay close attention to the responses to know when the question is answered, and therefore, when you can edit.

APPEARANCE

Your personal appearance is always important, whether in your day-to-day duties or when you conduct interviews for radio and television. Any violation of Navy uniform regulations, grooming standards or body fat guidelines is particularly obvious on camera and will be noticed by hundreds (or possibly thousands) of people. Your appearance can enhance your credibility or detract from it, so check your appearance thoroughly before the interview.

POST PRODUCTION

LEARNING OBJECTIVE: *Identify the procedures used to wrap up radio and television interviews.*

Once you have completed talking to the interviewee and you are back at your studio or office, immediately review the interview tape while it is still fresh in your mind. The following tips will help you put together your program or story with better efficiency:

- Make a run sheet for your radio interview listing questions, answers and good edit locations. Before you preview the footage for your television interview, reset the tape counter to zero, then log each scene on a shot sheet by number in the order it appears on the tape. Check for acceptable audio, video and picture composition.
- Be certain your topic does not violate security or the policies stated in *PA Regs*. Your interview must not be libelous, violate host country sensitivities (if you are assigned overseas) or breach an individual's privacy.
- Make sure audio levels match at edit points.
- Protect the credibility of the interviewee. Since it is possible for you to delete, add or rearrange words, sounds, sentences and entire paragraphs while editing the interview, be especially careful not to change the meaning of what the interviewee has said.
- Make a final check of the finished product before you give it to your supervisor. Examine the content. Does the interview tell the story? Are the questions answered? Is it concise and interesting? Is it factual? Check the technical quality of the final product for clean edits and good audio or video.

CHAPTER 16

PUBLIC AFFAIRS OPERATIONS

The previous 15 chapters of this NRTC covered the three primary functional areas of the Journalist rating — print journalism, photography and electronic journalism (radio and television). The fourth area, public affairs office operations, is considered a separate entity by many in the rating, yet it often incorporates elements commonly found in the other divisions. For instance, when you prepare a command presentation (explained later), you apply the same knowledge used to write a video news release (covered in chapter 14).

As a junior journalist, your first public affairs experience will probably be aboard ship (aircraft carrier, destroyer tender, etc. or at a large shore command). You should be aware that no two public affairs offices are organized the same way, because every command has a different mission, size and public affairs objective. However, most large public affairs offices are divided into the following departments:

internal information, media relations, community relations and administration. Figure 16-1 shows a typical public affairs office organization chart.

As you learned in chapter 1, you may work for a collateral-duty PAO (an officer who has other assignments that are considered primary duties). In this situation, the public affairs office “staff” may consist of you and perhaps a YN3 or civilian secretary. Conversely, a larger public affairs office ashore may have a full-time 1650 PAO (usually a commander or a captain), a JOC or above as LCPO, a JO1 or JO2 as LPO, and a combination of JO3s and JOSNs. At commands ashore, there also may be one or two civilian assistants to the PAO handling everything from secretarial duties to media embarks and community relations.

Regardless of the manning situation in place at your command, you soon will realize that every public

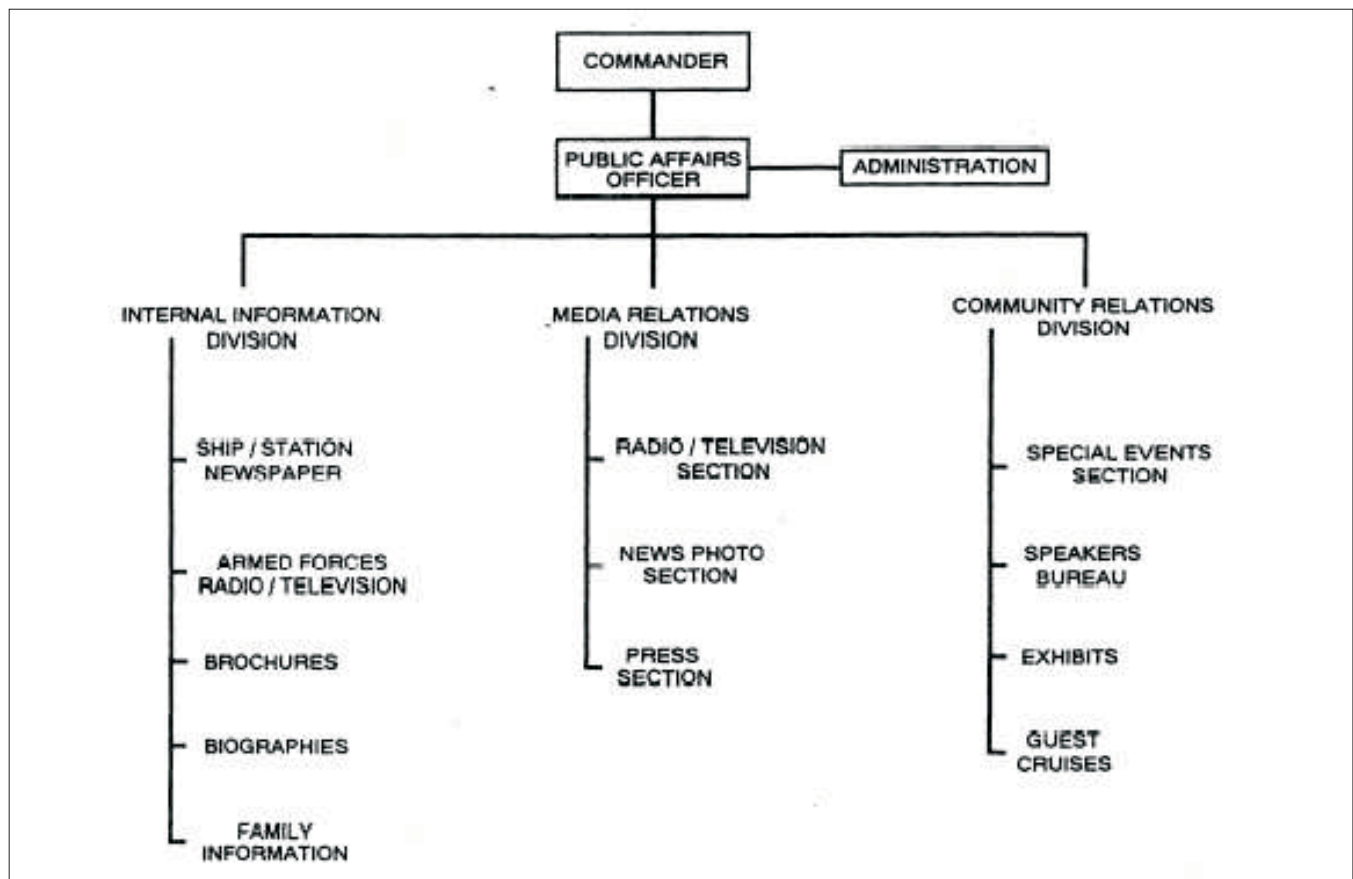


Figure 16-1.—Public affairs office organizational chart (large).

affairs office brims constantly with activity. Your versatility will be stretched to its maximum potential as you handle a myriad of tasks, including (but not limited to) the following:

- Maintaining and updating the command's web site
- Drafting naval letters
- Maintaining office files
- Preparing command welcome aboard information
- Writing the command history
- Writing command presentations
- Writing command/flag officer biographies
- Escorting members of the media
- Conducting tours
- Maintaining and inventorying public affairs office equipment

Do not let this list intimidate you. When you combine the knowledge you have gained from reading this NRTC with plenty of hands-on experience and office training, you will be successful in your public affairs office endeavors.

COMMAND WEB SITES

LEARNING OBJECTIVE: *Identify the requirements for developing and maintaining a command Internet web site.*

With the introduction of the Internet in the 1990's, the method of communicating from command to command, and person to person, changed dramatically. Today, nearly every public affairs office has at least one computer system dedicated full-time to serve as the command's official link to the outside world. Through the Internet, commands are able to send and receive correspondence, conduct research, interact with civilian and government agencies and manage community relations and public affairs programs.

INDIVIDUAL COMMAND WEB SITE

- A command's personal web site, if properly registered with the office of the Chief of Naval Information (CHINFO), serves as an excellent



Figure 16-2—NETPDTC command home page.

tool for promoting your command - and your people - within the civilian sector.

- Command web sites vary in style, content and design, but all are tasked - by instruction - to appear like a command's Welcome Aboard Brochure.
- Links to the Navy's homepage, Navy recruiting and the next senior command are encouraged to be included. Links to civilian sites are prohibited.

PRIVACY AND THE INTERNET

Posting of command information, whether intended for the internal or external audience, takes on special consideration when it is posted on a web site. Since the Internet is accessible by anyone, anywhere in the world at any time, it is important that the information you post on your command web site is cleared for this type of release. The right to privacy for all members of your command remains one of the most stringent requirements to posting information that is accessible to the global electronic community.

WEB SITE DESIGN

As you can see in figure 16-2, a command's homepage, or web site, should be designed so that is pleasing to the eye and not crowded with needless information; when it comes to designing home pages, the simplest design is preferred.

Items that should be included but not limited to are as follows:

- Command historical data

- Background information about your commanding officer
- Lodging and messing information
- Upcoming command special events
- Copies of recent command news stories
- Information about the local community
- Question and answer section

Links to official Navy web sites, such as the next senior command and the official Navy site, are also encouraged.

THE NAVAL LETTER

LEARNING OBJECTIVE: *Identify the components of a standard naval letter.*

One of the most important tasks you will perform in the public affairs office is drafting the naval letter. Whether responding to “fan mail” (a request for a welcome aboard booklet, photographs, etc.) or a media query, your letters must be letter-perfect and grammatically correct.

STANDARD NAVAL LETTER

The format of a standard naval letter is shown in figure 16-3. As you can see, it does not contain a salutation or complimentary close, because it is used to communicate with other naval commands and agencies within the DoD. All margins and space between headings and paragraphs are standardized. Punctuation is used as sparingly as possible.

The body of a naval letter contains the substance or essential facts of the communication in simple, concise, impersonal and tactful language with no repetition. Each paragraph should express **one** complete thought in logical sequence. If tables, diagrams or sketches are needed to add clarity to the letter, you may include them as separate enclosures. When you draft a letter in reply to another letter, make sure you answer **all** questions — whether expressed or implied by the writer.

Use tact when you draft a letter for the superior of the person who will sign it (for example, a letter from your CO to the admiral). In this situation, the skipper will **invite attention** to a special matter; he will not **direct attention** to it.

BUSINESS LETTER

The business letter (fig. 16-4) is used to correspond with agencies or individuals outside the DoN or DoD who are unfamiliar with the standard naval letter. It may be used for correspondence between individuals within the Navy when the occasion calls for a personal approach.

Whether you are preparing a standard naval letter or a business letter, always double-space the rough draft to allow for corrections and other notations.

More detailed information on naval letters and other types of correspondence may be found in the *Yeoman 3 NRTC* and in the *Navy Correspondence Manual*, SECNAVINST 5216.5

ELECTRONIC MAIL

You should treat all mail that you receive electronically, both through the command web site and by FAX, as though you received it in the regular mail. This type of correspondence may seem more unofficial - but it isn't. In fact, many times, correspondence may be sent by FAX or e-mail simply because it is more timely, and therefore, needs a more timely response. It may also be an official naval letter sent as an attachment. In any case, these types of correspondence, and your replies to them, should be printed in hard copy, numbered and filed as if they were routine correspondence received through the mail. This will ensure that you always have an alibi file on hand of correspondence you have received and correspondence you have sent.

ADMINISTRATIVE AREAS

LEARNING OBJECTIVE: *Identify the main administrative areas in a public affairs office.*

Now that you know the basic formats of the two most common naval letters, we will take a look at the main administrative areas of a public affairs office.

FILES

The success of any file system can be measured by your ability to file material correctly so that anyone in the office can locate it promptly. Further, your files must be kept current and not allowed to age in the in-basket on your desk.

The amount and variety of files maintained in your office depend largely on the mission of the command and the tasks handled by your office. Since

1
2
3
4

*DEPARTMENT OF THE NAVY

*Name of Activity

*Address

1
2

SSIC
Code/*Serial
*Date

1

2

From: Title of activity head, name of activity, location when needed

To: Title of activity head, name of activity, location when needed (*Code*)

Via: (1) *Title of activity head, name of activity, location when needed (not numbered if only one)*

(2) *Pattern of (1) repeated for next endorser*

1

2

Subj: NORMAL WORD ORDER, ALL LETTERS CAPITALIZED

1

2

Ref: (a) *Earlier communication that bears directly on subject at hand*

1

2

Encl: (1) *Material enclosed with letter identified in same way as reference, single enclosure numbered*

(2) *Notation added for material sent separately (sep cover)*

1

2

1. This example shows all the elements that might appear on the original of a one-page standard letter.

2. If you omit the date when you type the letter, start the From block on the fourth line below the code/serial to allow for an oversized date stamp.

3. Other examples in this chapter show the spacing to follow for correspondence that variously omits Via, Reference, and Enclosure blocks.

1

2

3

4

*NAME OF SIGNER

*By direction

1

2

Copy to:

Short title of information addressee (see SNDL)

Short title of second information addressee

ITALICS: OPTIONAL ITEMS

ASTERISKS: ITEMS YOU MAY STAMP

UNDERLINED NUMBERS: TYPEWRITER LINES

Figure 16-3.—Standard Naval letter.

1
2
2 5216
Ser DD 985/28
January 5, 2001

- Photographic file
- News release file
- Fleet Home Town News Program file

Command File

The command file contains reference material concerning the command, including the command history and statistics; biographies of the CO, XO, C/MC and other senior people of the command; and records of change of command ceremonies. These materials are used primarily for inclusion in welcome aboard booklets and media information kits. Additionally, you should devote a separate portion of the command file to any appropriate historical documents, such as previous command awards or old newspaper clippings.

Media Relations File

The media relations file contains a listing of all media in the local area, including the names, addresses and telephone/facsimile numbers of military beat reporters and news directors. It also includes information regarding deadlines, broadcast times and special requirements for copy and photographs. Some commands subdivide their media listing to reflect local commercial media and local military media.

Community Relations File

The community relations file exists to help PAOs plan effective community relations programs. It contains the names, addresses and telephone numbers of civic leaders and community groups with which the command maintains contact. The community relations file also should contain a study of the community and pertinent facts.

Project File

The project file contains past, present and future public affairs projects involving the command. It concerns such special events as general public visitations, military parades and ceremonies, holiday observances and dependents' cruises. This file also contains the planning information (letters, memos and miscellaneous notes) that pertains to each project. You can use information in this file as reference material when a similar event is scheduled at a later date.

Speech File

The speech file contains copies of all prepared speeches and other presentations delivered by members of the command in connection with the command speakers' bureau. It also contains background material for future speeches, such as the *Navy Fact File* (NAVSO P-3002) and *Navy Talking Points*, a collection of authoritative information on important Navy issues.

Future File

The future file contains a current listing of all events that have been scheduled or planned for the future, such as a general public visitation, change of command or VIP visit.

Matters Pending File

The matters pending file contains notes and reminders on pending ideas that may be useful for news releases, feature stories, news pegs for special events and other public affairs activities. This file also contains reminders on matters to be discussed at staff meetings, conferences and consultations with the CO or XO.

Correspondence and Memos File

In many commands, all official correspondence is filed centrally in the administration office. However, some commands operate a decentralized filing system with each department or office taking responsibility for correspondence under its cognizance. Regardless of where your public affairs correspondence is filed, you should become familiar with the filing system. If you need a letter or a memo from 5 months ago, you should know where to find it — the actual location of the files is inconsequential.

Keep two copies of all outgoing correspondence originated by your office and signed by the PAO — file one in the master outgoing correspondence file and the other in the related subject or project file. If the correspondence originates at your office, but is signed by the CO or another officer "by direction," maintain one copy in the appropriate file.

Incoming correspondence that directly affects a current or future project should be filed in the public affairs office. Make a copy of all incoming correspondence dealing with public affairs. If your

files are complete, you will encounter fewer problems later on.

In addition to filing correspondence properly, keep in mind that correspondence routing and control also are very important. Incoming correspondence and other paperwork first goes to the PAO, who then routes it to the appropriate staff member. If correspondence is routed to you for action, make sure you follow through on it without being reminded. If it is routed to you for information purposes only, keep it moving. Do not let correspondence gather dust in your incoming basket!

If you pick up incoming correspondence from the administration office or the mail room, attach a routing slip to each individual letter/memo and place it in the PAO's or senior journalist's incoming basket as soon as possible.

Alibi File

The alibi file contains copies of news advisories released to the news media. A news advisory is a shortened form of a news release intended to get the news media to cover an event themselves. This file also contains query sheets that document the oral release of information. News media queries are covered later in this chapter.

If the PAO is questioned about a news advisory or a query sheet, he can use the alibi file to justify the action taken.

Although a separate file, the news release file (covered later in this section) is another type of alibi file.

Clip File

The clip file contains clippings of stories that have been released and have appeared in print. Normally, the public affairs office has subscriptions to all local printed media to which material is frequently released. One of your first tasks each morning might be to screen and clip the daily papers for articles about your command or the Navy. PAOs and senior journalists use these clips to evaluate the effectiveness of public affairs programs and to plan new ones. In addition, they can determine easily how many news releases are being used in a week, month or year.

Make sure each clip is cut from the source as straight as possible, and center mount it on an 8 1/2- by 11-inch sheet of plain bond paper using a paper adhesive, preferably rubber cement. Stapling or taping the clip to the backing sheet will not give you a professional product.

In either the upper left or upper right-hand corner of the clip sheet, type the following information: (1) name of the publication, (2) date of the publication and (3) the page number in which the clip appeared. Make a notation if the clip extended over more than one page.

Photographic File

Good photographs are always in demand. If you are attached to a ship, you should stock 8- by 10-inch photographs or digital images of the ship underway, such as the three-quarter aerial bow photograph shown in figure 16-5. At a shore command, you should have 8- by 10-inch photographs of several points of interest.



Figure 16-5.—Three-quarter aerial bow photograph of bomb-damaged USS *Cole* (DDG 67) being towed into open sea by the USNS *Catawba* (T-ATF-168).
(DOD Photo by Sgt. Don L. Maes, USMC)

Aircraft squadron PAOs usually have on hand photographs of its planes in flight (fig. 16-6) along with general scenes of squadron structures, such as hangars and other points of interest.

In addition to photographs of hardware, you should carry photographs to accompany the biographies in the command file. Usually 4- by 5-inch black-and-white head and shoulders shots will satisfy the needs of most news media. However, you will need 8- by 10-inch black-and-white and color photographs for magazines and media kits.

Make sure the photographs are current. If your CO advances from commander to captain, you must have several copies of the new photograph on file.

Every public affairs office accumulates several miscellaneous photographs. If you think the photographs can be used at some point in the future, create files for them. When you file photographs, file them under general subject headings, such as “Carrier Operations,” “Sports” and “Sea Evolutions.”

You cannot maintain a good photographic file without the support of your command imaging facility. Make sure you build a good working relationship with the Photographer’s Mates or their civilian counterparts.

News Release File

Your news release file should contain the original news releases distributed to the media. As you learned in chapter 7, a release number is normally assigned to all outgoing stories — for example, the first release of

2002 would be 1-02 the second would be 2-02, and so forth. Start a new news release file at the beginning of each year and file the most current release on top.

Fleet Home Town News Program File

You should maintain a 90-day log book or index file of each release form mailed to the Fleet Home Town News Center (FHTNC). In addition, we recommend that you copy and file every release form that is part of a whole file. The Fleet Home Town News Program and the FHTNC will be covered in chapter 17.

Filing Tips

To help maintain your files properly, consider practicing the following tips:

- Label your file drawers neatly so its contents can be identified quickly.
- Give your files room to breath. Do not cram news releases, photographs and so on, into files and risk irreparable damage.
- File material in the proper folders.
- File papers facing forward in chronological order, with the latest date on top.
- Use standard file fasteners, rather than staples, to bind papers.
- File papers so the edges do not protrude beyond the edge of the folder.



Figure 16-6.—Three U.S. Navy F-14B Tomcats patrol the sky over the Persian Gulf.

(Photo by Lt. Bryan L. Fetter; USN)

COMMAND WELCOME INFORMATION

Your command welcome information is normally in the form of a welcome aboard booklet (fig. 16-7). The booklet familiarizes visitors and guests with your ship or station and usually contains the following items:

- A photograph of the ship (for shore stations, a photograph of the main gate or other familiar points of interest)
- A welcome letter from the CO
- A mission statement
- A brief history of the command
- A list of unclassified statistics and facts

The format of a welcome aboard booklet varies from a single-sheet trifold to an eight-page layout. Most editors of welcome aboard booklets use 60-pound cover stock for the front and back covers and either a four- or eight-page layout (saddle-stitched). Your particular design will be determined by the available funding and the amount of information you have.

If your ship is scheduled to deploy, you may have your welcome aboard booklet translated into several different languages. For further information, write to the Commanding Officer, Naval Technical Intelligence Center (NTIC DS32), 4600 Silver Hill Road, Washington, DC 20389.

COMMAND PRESENTATION

The command presentation often makes the first and most lasting impression on your visitors. You can deliver it in a command conference room or at a civilian auditorium or banquet room during a community speaking engagement.

Thanks to modern technology, most command presentations are composed on a personal computer using digital photos or slides, individual graphics and narrated live from a script. Some presentations, depending upon the resources available, are composed and edited to include audio, thus eliminating the need for a narrator. In other cases, presentations may be accompanied by either overhead transparencies, charts or 35mm slides. Some are recorded on videotape and have the same characteristics as a video feature story. Updating a command presentation on videotape takes time and it may not be suitable for viewing by large audiences.

Planning

Before you begin work on a command presentation, ask yourself the following questions:

1. What is the objective of the presentation? (Increase community awareness about the command? Tell how the command contributes to national defense? Familiarize newly reporting personnel?)
2. Who is the target audience? (VIPs? Active-duty military members? Local residents?)
3. What format should I use?
4. What resources are available?

Answering these questions in advance will let you determine how technical you can get, what to emphasize and how to arrange the information.

Organizing

A typical command presentation begins with a description of the unit, its overall mission and brief history. It then progresses quickly to the present tense and describes what the unit does and how it does it (in detail). The way your command is organized provides a logical outline for the order of your command presentation. Start at the top and work down, illustrating your script with visuals. Try to avoid too many images of static objects. People actually doing their jobs will stimulate interest and tell the story most effectively.

Scripting

When you formulate your command presentation, write the words to the script first, then locate or create the images to support it. Keep the narration short — between three and 10 seconds for each visual.

The script for a command presentation is similar in appearance to the video news release shown in chapter 14, save the administrative information, four-unit heading, release line and so forth. Use the left column to identify the visuals and the right column for the narration.

Some other points for you to consider regarding command presentations are as follows:

- Keep charts and graphs simple.
- Limit the number of “word” transparencies/slides.



USS GERMANTOWN (LSD-42)

**WELCOME
ABOARD!**

**United
States
Ship**



GERMANTOWN (LSD-42)

Figure 16-7.—Welcome aboard booklet.

- Keep the format and color of title and “word” slides consistent.
- Make sure the type in “word” slides is large enough to be read easily.
- Keep the sentences in the script short and use the active voice.
- Avoid mixing vertical and horizontal slides in the same command presentation.
- Avoid using Navy acronyms.
- Make sure your presentation is between 15 or 20 minutes in length. The longer the presentation, the more you risk losing your audience.

Further information on staging a presentation can be found in chapter 6 of the *JO 1 & C NRTC*.

COMMAND HISTORIES

Command histories provide the **only** overall account of the activities and achievements of U.S. Navy commands. Housed at the Naval Historical Center in Washington, D.C., command histories serve as the eventual basis for published naval histories.

All command histories are indexed and accessible to authorized users (within security limitations). They are used by staff officers who need information on the recent past, as well as by official study groups, authorities responsible for verifying unit combat and overseas awards and service, and often the command itself when a need arises for background information. Furthermore, numerous queries from other government officials, Congress, former Navy members and the public at large are answered using command histories.

Normally the PAO is tasked by the CO or XO to write a complete annual history of the command. However, this assignment may someday be your responsibility, especially if you work for a collateral-duty PAO.

The typical command history is not intended to be a work of literary art, but you must write it in clear and concise English with a minimal amount of technical jargon and acronyms. It should contain a basic historical narrative written in chronological order or broken down by department or subject. It also should include significant statistical data that should be part of the Navy’s permanent records, such as ammunition expenditure, number of underway replenishments,

ships and aircraft overhauled and repaired and other facts important to fulfill the mission.

Follow the narrative with a brief discussion of any special topics that merit further coverage, such as major events, developments and operations; changes in missions and functions since the submission of the last command history; and changes (if any) in homeport, group, squadron or headquarters. Include any appropriate supporting documents, such as change of command booklets, “personal-for” messages and biographies.

Some references you can use to compile the command history include deck and engineering logs and the ship’s diary. You also may ask each department head to submit a monthly input (if not already ordered by the CO or XO). Another method is for you to maintain an annual file and put notices, memos and ideas in it. Use whatever method works for you, but make sure you gather the material you need well in advance to meet the submission deadline. With few exceptions, the Naval Historical Center must receive all command histories by March 1 of the following year.

For more detailed information, refer to *Command Histories*, OPNAVINST 5750.12.

COMMAND AND FLAG OFFICER BIOGRAPHIES

Biographies of command and flag officers (and C/MCs) are an important part of your public affairs office files. You will use them in media kits, welcome aboard booklets, external releases and other media-related products.

The standard biography has 1-inch margins with either blocked or indented paragraphs. There are two spaces between paragraphs.

The first paragraph of a biography mentions where the subject is from and lists educational achievements beyond high school (do not include the birth date). Also mention when officers received commissions and from what source. For enlisteds, mention when he joined the service and where he attended basic training.

Subsequent paragraphs usually outline (in chronological order) the person’s career, listing significant jobs, accomplishments and educational achievements. Devote separate paragraphs to the person’s current assignment and his medals and awards.

The last paragraph should indicate the subject's marital status, spouse's name (including maiden name, if applicable) and place of birth. Names of children are included, and — if there is enough space — where they are attending college and serving in the military.

Some additional points to remember when you write biographies are as follows:

- Keep the civilian reader in mind. For example, Commander, Operational Test and Evaluation Force, Atlantic (COMOPTEVFORLANT) may be the correct way to phrase a military title, but it is much easier to understand if you write it like this: "Rear Adm. Clauster is the commander of the Operational Test and Evaluation Force, Atlantic."
- Pay special attention to capitalization. If you are not saying "Commanding Officer Lemming," then commanding officer is not capitalized. The same rule applies to any other billet titles listed throughout the biography, such as executive officer, training officer and company commander. The rule of thumb for you to follow is this: if the title directly precedes the person's name, you capitalize it. However, if the title stands alone or follows the person's name, you use lowercase. Warfare specialties also are lowercase, as in this example: "He was designated a naval aviator in 1973. ..."
- Lowercase educational degrees. It is a "master's degree in aeronautical engineering." Also, one receives a degree from or earns a degree at a university.
- Lowercase ranks unless you attach a name to them. One is "commissioned an ensign."
- Use the person's present rank when you refer to him throughout the biography.
- Omit street addresses.
- Keep your biographies to one page. If you can reproduce a photograph of the subject on the biography sheet, place it in the top left or right corner of the page and wrap the text around it.
- Note the month and year of the biography in the lower right-hand corner of the page. By doing this, you can distinguish the latest version of the biography from previous ones.

The biography ultimately belongs to the person about whom it is written. He may have personal reasons for including or excluding certain personal

information, so be accommodating. However, you should advise the subject of the style of the biography in a tactful manner.

A sample flag officer biography is shown in figure 16-8.

THE MEDIA

LEARNING OBJECTIVE: *Identify and recall the various types of media and recognize the media relations responsibilities of the public affairs office staff.*

The Navy is a definite source of news. Some of this news will be good and some bad. Good or bad, the rules established for good media relations dictate that all Navy news be treated objectively.

Media will publish or broadcast, and the public will learn about newsworthy events and other information concerning the Navy, whether or not the Navy cooperates. Furthermore, media will decide the interests and newsworthiness of Navy news — not the naval commander or the PAO.

MEDIA TYPES

Before we examine the elements that help create good media relations, it is beneficial for you to examine and understand all available media. In doing so, you must determine the requirements of each medium and then fulfill these requirements, using the guidelines mentioned later in this section.

At a minimum, your public affairs office should serve the following media and be familiar with their requirements:

- Newspaper
- Radio
- Television
- News services
- Syndicates
- Magazines
- News magazines
- Consumer magazines
- Internal or promotional publications
- Books

**ADMIRAL RODENTIA M. "RODDY" NUTRIA IV
UNITED STATES NAVY
COMMANDER NAVAL SUBMARINE FORCES
LAKE PONTCHARTRAIN**

Admiral Rodentia M. "Roddy" Nutria IV, a native of Natchitoches, La., earned his master of science degree in marine electrical engineering at New Iberia University before entering the Navy in 1962 through the NROTC (Naval Reserve Officers Training Corps) program. His first assignment was to the destroyer USS *PRUDHOMME* (DD 949), where he served as electrical officer. Admiral Nutria attended submarine school at New London, Conn., in 1965 and graduated with honors.

He was assigned to USS *JACK CREVALLE* (SSN 440) as "A" division officer and assistant navigator. He returned to submarine school for nuclear training in December 1968 and then served one year at the school as an instructor in the mathematics department. Subsequent tours included USS *HAGFISH* (SSN 441), USS *PLECTOGNATH* (SSBN 111) and USS *CEPHALOPOD* (SSN 443), where he served as executive officer.

From January 1979 to August 1981, he served as the commanding officer of the U.S. Naval Submarine Research Center, Hialeah Gardens, Fla. Following tours included commanding officer, USS *CRAWFISH* (SSN 444); budget officer on the staff of Commander, Submarine Force, U.S. Gulf of Mexico Fleet; and aide to the commander of the Operational Test and Evaluation Force.

Admiral Nutria next commanded Submarine Squadron Nine until reporting as a division director in the Bureau of Naval Personnel in 1989. He was selected for promotion to flag rank in May 1990 and assumed his current duty at that time.

As commander of Naval Submarine Forces, Lake Pontchartrain, Admiral Nutria controls the operations of 59 submarines in the defense of Louisiana's southeastern lake front.

Admiral Nutria's awards and decorations include the Defense Distinguished Service Medal, the Navy Distinguished Service Medal (three awards), Legion of Merit (four awards), Meritorious Service Medal, Navy Commendation Medal with Combat "V" and the Navy Achievement Medal (four awards).

He is married to the former Lulubelle Bogalusa of Marrero, La. They have three children: Lupé, a medical student attending Pacific Western University; Dominica, a Coast Guard lieutenant; and Edwardo, a professional bodysurfer.

8/94

Figure 16- 8.—Flag officer bibliography.

Newspaper

The newspaper is the oldest medium of mass communication and it remains the backbone of public information. While the number of newspapers published in America has declined with the ascendancy of television, total circulation is increasing.

There are differences between the metropolitan daily, the suburban or neighborhood daily and the weekly newspaper. Whereas, a metropolitan daily focuses on international, national and top-level local news and features, a suburban daily (or weekly) may limit itself to local and regional news with only brief summaries of national and international news. Suburban newspapers have grown in popularity recently, because of their comprehensive coverage of local news.

Radio

Radio became a medium of mass communication in the 1930s. Its advantages are immediacy, variety, mobility and aural appeal. Because of the recent resurrection of the AM news/talk format, the radio listening audience may include nearly every individual in the country.

Radio is conversational, informal, intimate and timely. It has an almost instantaneous reaction time to fast-breaking news, but it is limited to headlines and high points.

Television

Television is the newest and most potent of mass communications media. It combines the impact of sight and sound with the immediacy of radio. Communication satellites and roving news teams can

relay live telecasts from almost anywhere in the world or even outer space.

Television news programs are network (60 Minutes, 20/20, etc.) or local in origin. Most local stations do live coverage and welcome the opportunity to consider videotapes of significant military news or feature events, including sports.

In many areas, television stations are owned by or closely allied with newspapers. Most use The Associated Press as their primary news service.

News Services

News services, often called wire services, exist to provide the mass media with coverage they cannot afford to get by any other means.

The Associated Press is the primary news service used by American print and electronic media. You should be aware that there are also several foreign wire services, such as Reuters (England), Agence France Press (France) and Xin Hua (Peoples Republic of China).

Syndicates

Syndicates are either owned by a large newspaper or chain of papers, or they are the result of cooperative agreements among noncompeting papers. They often provide in-depth stories of what the wire services report as spot news. Examples are as follows: NANA (North American Newspaper Alliance), NEA (Newspaper Enterprises Association), *New York Times*, *Chicago Tribune*, *Los Angeles Times* and the Hearst Headline Service.

Magazines

Magazines may be grouped as news, consumer or internal/promotional publications. Magazines have wide circulation, though they are published less frequently than newspapers.

Requests for help on Navy features made by a national magazine must be approved by CHINFO before information is released or support is given.

News Magazines

News magazines (*Time*, *Newsweek*, *U.S. News and World Report*) are national weekly publications that cover the major news of the week in greater depth than daily newspapers or the electronic media.

Consumer Magazines

Consumer magazines appeal to various special interests of the public. Technology, business, sports, hobbies, theater, gossip and humor are among the major subjects reported. These provide an opportunity to tell a story in greater detail or from a particular point of view. Stories need not be as timely as in a news magazine.

Internal or Promotional Publications

Internal or promotional publications reach the internal and external audiences of companies, agencies, professions or vocations. They are also called trade journals and house organs. *Public Affairs Communicator* is an example of a trade journal.

Books

Many PAOs are asked to assist authors of books dealing with military subjects. More than 30,000 books are published in this country annually. Because of the continuing importance of the Navy and the armed services as a whole to our society, authors of virtually all classes of books (nonfiction, adult, juvenile, general, text and pictorial) rely on the public affairs office for help in gathering material.

A more in-depth study of the media can be found in the *JO 1& C*.

ESTABLISHING GOOD MEDIA RELATIONS

Four key words should govern your relations with representatives of the mass media. They are as follows: **security, honesty, accuracy and promptness.**

Security

Make sure the information you release to the media does not contain security violations. In addition to getting yourself neck-deep in trouble, you may endanger the welfare of your country. You should adopt this slogan: "When in doubt, check it out."

Honesty

Your good name is your most valuable asset. Justify the media's belief and trust in the Navy by playing the news game honestly. Never fake a story or serve a selfish interest. Do an honest, straightforward job of reporting the news. Credit your source. Never

plagiarize or use copyrighted material without permission.

Accuracy

Every news release or statement released to the media must be 100-percent accurate. Make one blunder and the media will lose confidence in you. Be sure to check and double-check all statements, names, addresses, dates and numbers. Be sure your personal opinions do not interfere with your media relations. Your job is to tell the facts.

Promptness

A good Navy Journalist aims for speed without sacrificing accuracy. Reporters want their material quickly, because competition is keen and the public demands fresh news. As long as you can supply this material the way they want it and in time to meet their deadlines, you can expect cooperation.

MEDIA VISITS

Media representatives visiting your ship or station are considered guests of the CO, even when they are covering an assignment. As guests, they are due the utmost courtesy and respect. As working men and women, they rate your full cooperation and assistance.

If you are assigned to escort a reporter on a tour of the ship or station, plan your route ahead of time. Include as many points of interest as possible within security limits. Be relaxed and natural in your actions. Let the reporter know you know your job, but do not try to talk above your level of expertise. Any experienced reporter can sense a “snow job.”

Reporters may be permitted to travel aboard Navy ships and aircraft to cover news events when this travel is in the interest of the DoD or DoN. However, travel must not place the Navy in a position of competing with established commercial transportation facilities along the same route. Transportation furnished is not considered to be in competition with commercial facilities when the travel is necessary for obtaining news material or when correspondents are invited to report on a matter considered of special interest to the Navy.

While aboard, reporters traveling on Navy ships may transmit their stories using shipboard communications facilities. Specific regulations and

procedures for the handling of press traffic are found in chapter 3 of *PA Regs* and the *Navy Communications Manual*, NTP-9.

For more detailed information regarding media visits, consult chapters 3 and 4 of the JO 1 & C.

EXCLUSIVE STORIES

Exclusive stories are in great demand, especially where competition is strong. It is the policy of Navy public affairs not to release regular news stories on an exclusive basis. A Navy release of general interest usually goes to all outlets on your media mailing list simultaneously.

There are some exceptions to this rule. For instance, if you have an idea for a magazine feature story, it must be written or slanted toward a particular market. Since most magazines demand exclusives, the story would naturally be submitted to one magazine outlet.

Another exception is when a commercial writer develops an idea for an exclusive on his own initiative. When a reporter comes to the PAO with an idea for a story, the writer should be given full cooperation. The idea should be kept in confidence and should not be relayed to other media or made the basis of a Navy release.

If another reporter hits on the same idea, the writer should be told that the first person is already working on that angle. Do not reveal who the other writer is, unless the identity is made obvious by circumstances. If the second person wants to continue on the same idea anyway, the reporter should be given the same cooperation as the first person. However, in a case like this, always tell the first reporter what happened.

The same process should be repeated if a third reporter becomes involved. However, when more than three requests are received for the same information, everybody should be informed that the information cannot be provided on an exclusive basis and the information will be disseminated as a general Navy news release.

MEDIA QUERIES

A media query is a request for information by a reporter, usually made by telephone. This indicates that the reporter needs the information **now** — not tomorrow or next week.

As a rule, you should refer all queries to the PAO if they are other than simple, routine questions. The PAO

has the authority to release information and is more likely to know the representative calling.

When your boss is not available, you should answer the query provided the requested information is either releasable or within the limits of security. In most public affairs offices, a set of ground rules is established to cover situations of this type. The first one is to write down the exact question and the name and organization of the caller. Many PAOs use the query sheet shown in figure 16-9.

If the information is not readily available, explain this to the reporter and promise to call back in 5, 10 or 15 minutes, depending on how long it will take you to get the answer. Never brush a reporter off with a vague promise, such as, "I will see what I can find out." Be courteous — remember you are representing your command and the U.S. Navy.

Once you are off the telephone, start digging up the information. Check the files, consult reference material or contact officers who may answer the question with authority. If you run over the time limit, return the call and explain the delay. Always keep in mind that the reporter is probably working against a rapidly approaching deadline.

MEDIA INFORMATION KIT

The media information kit is one way to provide visiting reporters with valuable background information on your ship or station. A typical media information kit contains the following materials:

- Command history
- Pertinent facts about the population of the command
- Welcome aboard booklet
- Biographies of senior officers
- Photographs
- Any other appropriate information that will supplement the subject on which they intend to write

Media information kits can serve many other useful purposes. For example, you may give them to visiting dignitaries or guest observers on fleet exercises and operations. They are used during command public visitations, commissioning ceremonies and other special occasions. Aboard ship they are forwarded with advance news releases to local editors in ports scheduled to be visited. American

officials in foreign countries also need kits for publicity purposes when ships visit them.

Use standard-size double-pocket folders to assemble your media information kits. You can arrange material in several different ways, but we recommend placing the command history, photographs and biographies on the left side, and other amplifying information on the right side.

You should review information kits regularly, because the material in them becomes outdated.

TOURS

LEARNING OBJECTIVE: *Identify the purpose of tours and the characteristics and skills required of the one conducting a tour.*

An important part of your community relations efforts center around public tours of the command. Regardless of its size, your command will generate a great amount of community interest. Therefore, the public affairs office staff conducts tours so visitors can witness the Navy in action first hand. Tours also carry great recruiting potential.

In general, Navy commands honor requests for tours throughout the year, with certain days set aside for general public visitation, such as Navy Day and Armed Forces Day. (Note the use of the term *general public visitation*. **Never** use "open house" when referring to public tours of your command because it implies unlimited public access.)

Additionally, you will receive tour requests from a wide variety of groups, including (but not limited to) the Boy and Girl Scouts, NJROTC units, veterans' alumni organizations, junior high/high school classes and other community groups. Sandwiched between these groups are the occasional VIP and celebrity tours.

The availability of your command to provide public tours is driven primarily by the following three factors:

- The security conditions in force
- The personnel available to conduct the tours
- The operational commitments of the command

Now take a look at some of the areas you must become familiar with before you conduct a tour. They are as follows:

- Appearance

QUERY SHEET

Time _____ Date _____

From: _____

of _____

Telephone _____ Deadline _____

Question: _____

Date and time of response: _____

Response: _____

Query referred to: _____ Date _____ Time _____

Source of information/coordination _____

Approved by: _____

Given to _____ Time _____ Date _____

Method of release: Telephone _____ Orally _____ Printed _____ Other _____

Given by: _____

Figure 16-9.—Query sheet.

- Command knowledge
- Demeanor
- Patience
- Voice projection
- Emergency procedures

APPEARANCE

As you learned in chapter 1, your appearance must be impeccable. Remember, you represent not only the command but the U.S. Navy. Begin evaluating your appearance by first examining your haircut, and working your way down to the edge dressing on your shoes. Replace old, worn-out ribbons and name tags. Prepare for a tour with the same intensity as if you were preparing for a major command personnel inspection.

COMMAND KNOWLEDGE

You cannot give a good tour if you do not have a wealth of command knowledge. For instance, say you are conducting a tour of your aircraft carrier for a local community group while in port. A member of the group asks you to describe the different types of aircraft that operate from the deck of the carrier. After a long pause, you say, “Well, that information is in your welcome aboard booklet — let me see if I can dig it out for you.”

Obviously, this is the response of a lazy tour guide. Your credibility, and that of the command, is at stake during every tour. If you cannot answer simple questions without referring to a “safety net,” your tour group will be disenchanted. Before the tour, you should know the mission and history of the command, its hardware, important statistics and so on. You can do this by giving yourself a mock tour and asking yourself probable questions the day before. Carry a copy of the welcome aboard booklet and refer to it if you run into any rough areas.

DEMEANOR

It is easy to describe the demeanor you must have when you conduct a tour: **act like a public affairs professional!** Be enthusiastic during a tour, but do not become a social gadfly. You are giving a tour to explain the mission and history of your command, not to make lifelong friends or win a popularity contest.

PATIENCE

Another factor that teams with enthusiasm is patience. Patience comes into play when you try to keep a large tour group on the tour route. You cannot treat the group like a herd of cattle; instead, your

instructions must be conveyed in an appropriate tone and accentuated with plenty of “pleases” and “thank-yous.”

Patience also is evident when you are asked a “dumb” question. We all know there is no such thing as a dumb question, but on occasion a tour participant will ask you a question you think is absurd. For example, it is not uncommon for a civilian to inquire about your ribbons and medals or your rating insignia. Sure, you and the 3,500 crew members on your ship know that a crossed quill and scroll represents the journalist rating — but that does not mean Mrs. Earwig, a 45-year-old high school science teacher from Billings, Mont., knows what it is. In this instance, briefly explain the Navy’s occupational fields and rating system with tact and compassion. If you experience an onslaught of similar questions during the tour, handle each one in the same manner, but **never** vent your frustrations in public.

VOICE PROJECTION

A tour guide who cannot be heard is of no use to a tour group. Make sure you project your voice with authority, especially at airports or around noisy equipment in the hangar bays. If there is enough money in your public affairs office budget, purchase a megaphone or some other type of portable voice amplification equipment.

While projecting your voice, you should speak slowly and clearly so as to increase your chances of being understood.

EMERGENCY PROCEDURES

One of your tour participants collapses while you are explaining the functions of the catapults on the flight deck. What happens to the rest of the group while you attend to the ailing person? Who should you call? Where is the nearest telephone?

Answers to these questions are available in the command or public affairs instruction that covers the policies and procedures for public tours. Within this instruction is a section pertaining to emergencies that occur on the tour route. You should become familiar with the entire instruction, but pay particular attention to the section dealing with contingency responses.

If for some reason this instruction is not available at your command, seek the guidance of the senior journalist or the PAO. You will find more detailed information on tours in chapter 4 of *PA Regs* and in chapter 1 of the *JO I & C NRTC*.

CHAPTER 17

FLEET HOME TOWN NEWS

Most of this NRTC covers your responsibilities associated with keeping the public informed about its Navy. This chapter progresses along the same lines but focuses on the methods you use to gather and release hometown news about the men and women of the U.S. Navy.

Navy people, not unlike their civilian counterparts, have a desire to be appreciated—to have their achievements and contributions noticed and praised. The Navy's Fleet Home Town News Program provides the most effective and economical means for you to release information about individual sea service members to their hometown news media (fig. 17-1). Your participation in the program also produces the following ancillary benefits:

- Improved command retention
- Improved recruiting Navywide
- Increased command readiness through the recognition of its people
- Increased public awareness of the sea services through news stories about the services' education, training and operational missions
- Increased individual and unit morale

The Fleet Home Town News Program is administered by the Fleet Home Town News Center (FHTNC). Further information about the FHTNC and the Fleet Home Town News Program is provided in the following text.

THE FLEET HOME TOWN NEWS CENTER

LEARNING OBJECTIVE: *Identify the responsibilities of the Fleet Home Town News Center (FHTNC).*

Since 1945, the responsibility for processing and distributing hometown news releases has rested with the FHTNC. Located at Naval Station Norfolk, Virginia, the Center is a field activity of CHINFO. In effect, it acts as a clearinghouse for the sea services by editing, reproducing and mailing hometowners to the media in communities throughout the United States,

Service Notes



Kyle M. Parker
Navy Seaman Recruit Kyle M. Parker, son of Marine Corps Capt. James M. Cain of Twentynine

McCoy finishes Navy Hospital Corps School

Navy Hospitalization Recruit Le Talia A. McCoy, daughter of Lottie J. McCoy of 523 Sixth St. in Tallulah, recently graduated from the Navy's Hospital Corps School.

During the course at the Naval School of Health Sciences, San Diego, students receive instruction on basic medical procedures used by hospital corpsmen who assist Navy doctors and nurses.

Course studies also include an introduction to all phases of military health service, x-ray technology, laboratory analysis, general practice and surgery.

The 1991 graduate of McCall Senior High School joined the Navy in January 1992.

Palms, recently completed basic training at Recruit Training Command, Great Lakes, Ill.

During the cycle, recruits are taught general military subjects designed to prepare them for further academic and on-the-job training in one of the Navy's 85 occupational fields.

Studies include seamanship, close-order drill, naval history and first aid.

Parker is a 1992 graduate of Twentynine Palms High School.



DANIEL S. GAMMON

Seaman Daniel S. Gammon, son of Air Force Master Sgt. Danny L. Gammon and Janet L. Gammon of San Antonio, Texas, and a grandson of Mr. and Mrs. C.A. Gammon and Mrs. Velma Trosper, all of Bowling Green, was promoted to pay grade E-3 Aug. 1 at Naval Air Station, North Island, Calif. He is stationed aboard the USS Ranger which has been deployed to the Persian Gulf.

He is a 1989 graduate of Lackland High School in San Antonio.

Clifton Barber returns from deployment

Navy Fireman Clifton O. Barber, son of Richmond and Gertrude Barber of Tallulah, recently returned aboard the guided missile cruiser USS England from a six-month deployment to the Western Pacific.

During the deployment, USS England traveled over 33,000 nautical miles and participated in several exercises with the Australian Navy and Japanese Maritime forces plus other U.S. Navy and Marine Corps units. USS England was part of the last Navy battle group to visit Naval Base Subic Bay, Republic of the Philippines, scheduled to close later this year.

USS England sailors provided humanitarian assistance to a local Olongapo City, Republic of the Philippines, elementary school by painting and making numerous repairs to the aging building as well as purchasing recreation equipment during a port visit to Naval Base Subic Bay.

Assisted by the sailors on USS Anietam, the England also hosted a Texas style barbeque for the residents and staff of a local Pattaya Beach, Thailand, boys' home. The language barrier was broken by the smiles of all involved. Barber visited ports in Australia, Brunei, Hawaii, Hong Kong, Japan, Thailand, Singapore and the Republic of the Philippines.

The 1983 graduate of McCall Senior High School and 1989 graduate of Louisiana Tech University in Ruston, joined the Navy in January 1990.

Figure 17-1.—Fleet Home Town News Program news clippings.

American Samoa, Puerto Rico, Guam and the U.S. Virgin Islands. (In 1992, the Center stopped sending releases to the Republic of the Philippines upon the departure of U.S. forces.)

Through a mutual agreement with the Commandants of the Marine Corps and Coast Guard, the instructions and policies of the FHTNC apply to all Marine Corps and Coast Guard commands, organizations and activities participating in the Fleet Home Town News Program.

You should keep in mind that the Fleet Home Town News Program is not optional for your command—it is required by *Instructions and Policy Concerning Fleet Home Town News Program*, SECNAVINST 5724.3. Make sure you examine this instruction in its entirety.

CLIENTS

Hometown media are the “clients” of the FHTNC, including newspapers, radio and television stations and special interest publications. They neither pay for stories, nor are they obligated to use the material. However, since they must request the material to receive it, most of the clients do use it.

NOTE: You may not mail hometown news material directly to the media, unless interested media have specifically requested it. SECNAVINST 5724.3 emphasizes that all hometown news, other than specifically authorized exceptions, must be forwarded via the FHTNC.

The authorized exceptions are as follows:

- Material prepared by recruit training commands concerning special recruit units may be forwarded directly to the activity for placement in local media, when requested by the recruiting activity that enlisted the unit.

- Hometown news material concerning a member of a command whose hometown is in the immediate geographic area (generally within 50 miles) of the command may be placed directly with local media. This provision also may include media in communities where the command maintains direct contact, such as USS *Los Angeles* (SSN 688), with Los Angeles, California. In the case of a namesake ship program, commands should receive guidance from the appropriate PA Center or NAVINFO Office.

Hometown news feature material may be provided directly to any news media making requests for information on specific individuals, subject to the instructions of appropriate operational or other higher echelon commanders governing media relations. Normally, such requests will be coordinated with the appropriate service headquarters, PA Center or NAVINFO before release.

SURVEYS

It is the policy of the FHTNC not to send unsolicited releases to the media. Therefore, the Center periodically surveys all potential media clients in the United States and its territories. Those news media editors who want to receive hometown news releases must indicate this on the FHTNC survey form.

A recent media survey revealed the following statistics:

- 96 percent always or sometimes use award releases; 84 percent always use them.
- 96 percent always or sometimes use promotion releases; 77 percent always use them.
- 93 percent always or sometimes use school graduation releases; 78 percent always use them.
- 72 percent get feedback from their readers/audience about releases; 98 percent describe the feedback as positive.

STORY CATEGORIES

LEARNING OBJECTIVE: *Identify the most common hometown news story categories and the appropriate and inappropriate hometown ties.*

Hometown news stories usually fall into one of three categories—military achievement, personal achievement or participation stories. These categories are explained in the following text.

MILITARY ACHIEVEMENT

Military achievements are those personal newsworthy accomplishments that are job related. Consider the following examples:

- School graduation (**NOTE:** To avoid embarrassment in case of early dismissal, the FHTNC does not process stories about individuals reporting to schools. Additionally, this category applies only to formal training four weeks in length or longer, such as “A” and “C” schools.)
- Personal award (**NOTE:** Since some recommended award recommendations are downgraded before being presented, **DO NOT** submit *recommended* awards. Submit only awards that have already been presented.)
- Advancement or promotion (**NOTE:** Keep in mind that an individual who is “frocked” to a specific paygrade is **NOT** officially advanced to that paygrade until a later date. Therefore, submit advancement/promotion stories *only* when individuals are officially advanced.)
- Qualification (JOOD, OOD, EAWS, ESWS, etc.)

- Honors earned in school or in training
- Reenlistment
- Lifesaving effort or rescue
- Retirement

PERSONAL ACHIEVEMENT

Personal achievements are those personal newsworthy accomplishments realized during off-duty hours. Consider the following examples:

- College degree or high school diploma earned
- Award received from the Navy League of the United States or other civic organization, but not commercial firms

PARTICIPATION STORIES

Participation stories result from an individual's being a part of his command's activities. Consider the following examples:

- Reporting aboard
- Deployment or a change in the location of the unit
- Port visit
- Participation in an exercise or operation
- Participation in evacuation operations
- Active duty for training (ACDUTRA)

NOTE: The FHTNC does not process feature stories.

APPROPRIATE HOMETOWN TIES

For purposes of this section, the term *hometown* refers to the place of residence of the sea service member's immediate next of kin, a spouse's immediate next of kin, and when appropriate, college alumni publication. Other suitable hometown ties include another blood relative, or an in-law or legal guardian living in a community in the United States or its possessions.

INAPPROPRIATE HOMETOWN TIES

You must not use spouses, dependent children or friends as hometown ties. This will eliminate the possibility of harassment if official duties require the

servicemember to be away from his residence on a regular basis.

PROMOTING THE FLEET HOME TOWN NEWS PROGRAM

LEARNING OBJECTIVE: *Identify the methods used to promote the Fleet Home Town News Program.*

Participation in the Fleet Home Town News Program by individual service members is strictly voluntary. Nonetheless, you should present the program in a positive manner to encourage involvement. While some people may not be interested in the "publicity," their relatives and friends back home probably are interested.

Soft sell the program, but **do** attempt to sell it. If an individual still chooses not to participate, honor the person's decision and do not forward the release form to the FHTNC.

You can sell the program in the following ways:

- Run Plan of the Day/Week notes.
- Make SITE-TV spot announcements.
- Make promotional spot announcements on ship's radio.
- Ask the CO, XO or C/MC to make promotional announcements during Captain's Call.
- Promote the program during command indoctrination classes ("I" Division).

PROCESSING FHTNC MATERIALS

LEARNING OBJECTIVE: *Recognize the correct method of processing FHTNC materials.*

The success of the Fleet Home Town News Program depends on your continuous, active support. Therefore, you should give the people at your command ample opportunities to participate in the program and you should encourage future involvement. A good starting point for you to solicit participation is when military members first report to your command; so make sure the public affairs office is on the command's check-in sheet.

FLEET HOME TOWN NEWS RELEASE FORM

At first glance, conducting a hometown news program appears to be a monumental task. However, closer observation reveals it is a relatively simple process in terms of meeting public affairs objectives. The FHTNC has simplified the procedures for submitting hometown news material by designing a standard release form, the Fleet Home Town News Release Form, NAVSO 5724/1 (Rev. 1-95). You should use this release form for all hometown news releases.

NOTE: Contact the Center or check SECNAVINST 5724.3 for the most current release form revision date.

When properly completed (mostly by the individual about whom the release is being made), the release form contains all the information necessary for writers at the FHTNC to prepare the hometown. Figure 17-2 and 17-3 are examples of a NAVSO 5724/1; this form was revised in 1995. The reverse side of the release form (fig. 17-3) carries block-by-block instructions. This new form also includes a third (blank) page for specific information such as news releases, roster stories, etc. For this reason, we will not provide a block-by-block breakdown of the release form.

The NAVSO 5724/1 was designed to give uniformity to the Fleet Home Town News Program and to accelerate the processing of hometown news releases. They are available through the Navy supply system, so maintaining an adequate number of them should be easy. However, if you run out of release forms, you may use locally produced copies until your stock is replenished. The information may be typed or printed.

NOTE: The FHTNC should receive completed release forms no later than 30 days after the event occurs (allowances are made for submarines). After the release forms are processed and the subsequent news releases are mailed, the forms are maintained for 90 days in an alibi file and then destroyed.

On occasion, a few release forms do not get processed and are returned to the activities that submitted them. Along with the returned release forms is a short explanation listing the reason(s) they were not accepted. There are several reasons a particular release form may not be processed. It could be that there are no media in a particular community or area that desires the stories. The release form might be

received without the required signatures, or there might not be enough information with the release form to develop a meaningful release.

You can reduce the number of nonreleased forms by following all of the directions on the back of the NAVSO 5724/1. Check all blocks on the front of the release form for completeness, accuracy and legibility **before** the release form is mailed to the FHTNC. Currently, forms are not accepted by electronic mail.

The Fleet Home Town News Center will annually review your command's FHTN program by Unit Identification Number (UIC) and provide written feedback on how well you are using the program to benefit your command.

Log Book/Index File

You should maintain a 90-day log book or index file of each release form mailed to the FHTNC. The record should include the following information:

- Name and social security number of the individual
- News event
- Date mailed

By tracking your release forms in this manner, you can work with the Center in purging release forms that belong to an injured or deceased crewmember. It is embarrassing when a release is made on an individual's participation in an exercise when he was discharged months earlier. More important, the release of a story about an individual who "recently visited Sasebo, Japan," when in fact he was hospitalized or deceased, will cause confusion and additional grief to family members.

The FHTNC is an addressee on all death or serious injury messages. Upon receiving a casualty message, the Center immediately inputs the social security number of the casualty into the computer system. The computer indicates whether a news release is currently being processed or has been mailed out on that individual, as well as the names of the hometown media that received it. If the release has left the Center, the appropriate media outlets are called immediately and requested not to run the story.

Command Releasing Authority

Each submission to the FHTNC must be authorized for release and verified for accuracy by the submitting command. The command's "releasing

FLEET HOME TOWN NEWS RELEASE

1. Instructions on reverse.
2. Print in ink or type.
3. For additional remarks use Block 17.

PRIVACY ACT STATEMENT - AUTHORITY: 5 U.S.C. 301, and 14 U.S.C. 93f and 10 U.S.C. 8012 and 8034, and EO 9397. PRINCIPAL PURPOSE: To prepare news stories and news releases for distribution and publication by civilian news media to recognize the achievements of sea service members. SSN is used for casualty identification and will not be released. ROUTINE USES: Information may be disclosed to civilian news media representatives. Once published, information is considered "Public Domain." DISCLOSURE IS VOLUNTARY: Failure to provide the information may mean little or no public news release material can be produced, thus denying the individual public recognition for personal achievement.

1. I certify this information is correct. I have no objection to its publication. Forms not signed will not be processed and will be returned.
Print your First Name, MI, Last Name, and SSN. You must sign and date your form.

First Name: _____ MI: _____, Last Name: _____, SSN:

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Signature: _____, Date Signed:

(DD)	(MM)	(YYYY)
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5. Command Mailing Address:

6. Command Releasing Authority (Normally Completed By Command PAO)

Print Name: _____

Signature: _____

Duty Phone: _____ Hold File: Yes ___ No ___

Homeport/Command Location: _____

If Unit Is Embarked Tell Where: _____

TYPE YOUR COMMAND'S MAILING ADDRESS OR PLACE
COMMAND'S MAILING LABEL IN THE BLOCK ABOVE

7. Unit Code

USN - UIC	USMC - RUC - MCC	USCG - OPFAC
-----------	------------------	--------------

 8. Branch of Service (Check One)

USN	USMC	USCG
USA	USAF	CIV.

 9. Duty Status (Check One)

ACTIVE	RESERVE
--------	---------

10. Date Entered Service (MM/YYYY)

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 11. Sex (Check One) MALE ___ FEMALE ___ 12. Are You Currently Married? (Check One) YES ___ NO ___ 13. Spouse's First Name (If Married) _____

14. Name and Address of College or University If Degree Was Received; Must Include City and State. Type of Degree _____ Year Graduated

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 FHTNC Use Only

15. Name and Address of College or University If Degree Was Received; Must Include City and State. Type of Degree _____ Year Graduated

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 FHTNC Use Only

16. Duty You Are Assigned/Job Title. (If Designated a Plane Captain, Crew Chief, etc., List Type of Aircraft.)

17. Event: Check the Appropriate Box or List Complete Details. If You Received a Medal or Award, Attach Copy of Citation.

Date of Event: (MM/DD/YYYY)

--	--	--	--	--	--

Reported for duty	Promoted to the Above Rank	Meritoriously Promoted
Medal/Award...Attach Copy	Retired: _____ # of Years	Reenlisted: _____ # of Years
Military School Graduation (List School and Course Name)	Deployment -- Explain Below	Other -- Explain Below

Explanation: (Attach Extra Page If Necessary.)

YOUR LIVING PARENTS OR GUARDIANS, OR OTHER RELATIVES: SHOW RELATIONSHIP. IF MILITARY INCLUDE RANK/SERVICE.

18. Your Father's First, MI, and Last Name	Address (Number and Street)								
	City	State	ZIP Code						
19. Your Mother's First, MI, and Last Name	Address (Number and Street) (If Same as Above, Please Mark Box on Right)								
	City	State	ZIP Code						
20. Your Grandfather's, Father-in-Law's, or Other Relative's First Name, MI, and Last Name (Write Relationship)	Address (Number and Street)								
Relationship	City	State	ZIP Code						
21. Your Grandmother's, Mother-in-Law's, or Other Relative's First Name, MI, and Last Name (Write Relationship)	Address (Number and Street) (If Same as Above, Please Mark Box on Right)								
Relationship	City	State	ZIP Code						
22. Name of High School You Graduated From	Year Graduated <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>							City	State ZIP Code

RESERVISTS - SEE INSTRUCTIONS ON REVERSE OF FORM. (ADDITIONAL INFORMATION IS REQUIRED.)

NAVSO 5724/1 (Rev. JAN 1995)

This Form Supersedes All Previous Editions Which May Not Be Used.

Page 1 of 3 Pages

Figure 17-2.—An example of a NAVSO 5724/1 (front).

FOR RESERVIST'S USE ONLY - FILL OUT COMPLETELY - READ INSTRUCTIONS BELOW			
23. Your Home Address (Number and Street)	City	State	ZIP Code
24. Name of Your Place of Employment		Address (Number and Street)	
25. Your Position or Job Title With Company	Years Employed	City	State
			ZIP Code

INSTRUCTIONS	FHTNC USE ONLY																																																																														
<p><i>The Fleet Home Town News Center can help your family, neighbors, and friends back home recognize your achievements. Fill out this form so FHTNC can send news releases about your accomplishments to participating hometown newspapers, college alumni publications, radio and TV stations.</i></p> <ol style="list-style-type: none"> 1. Print or type your complete name (first, MI, and last). Your social security number and signature is required. Please date the form when you sign. 2. Indicate your rank (i.e., YN3, CPL, LT). 3. Indicate the month and year you reported to your current command. 4. Indicate your projected rotation date. 5. Indicate your complete command mailing address. Include FPO address as appropriate. If this form needs to be returned to your command, this block will be the mailing label. Check with your supervisor if you don't know your command's address. 6. This block is to be completed by your unit public affairs officer or unit information officer. Include the command's homeport and a complete duty phone number where we might be able to contact you if necessary. If your unit is forward deployed, deployed, or commencing deployment, then your releases will be designated as a "Hold File," therefore, indicate "yes" beside "Hold File". If your unit is embarked, indicate what platform (i.e., HSL-41 Det B, embarked aboard USS Deyo; VF-143 embarked aboard USS George Washington). 7. Indicate your unit code as appropriate. (UIC for Navy, RUC-MCC for USMC, and OPFAC for USCG units.) 8. Check your branch of service. 9. Check for active duty status or reserve duty status. 10. Indicate the month and year you entered active duty. 11. Check appropriately. 12. Check current marital status. 13. If you are currently married, include spouse's first name and complete blocks 20 and 21 with in-law's names and addresses. 14. - 15. If you graduated from a college or university, please indicate the name of the college or university you graduated from; the type of degree received, such as BA or MA, and the year in which you graduated. If you have an additional degree or graduate degree, complete block 15 also. 16. Briefly describe your job (i.e., command master chief; ship's navigator; or platoon sergeant). 17. Indicate the date of event and then check the appropriate box. If you check the "promoted" box, the story will indicate you have been promoted to the rank in block 2. If you check "MEDAL/AWARD", please include a copy of the citation (not required for Good Conduct Medals). If "retired" or "reenlisted", state number of years. 18. - 21. List names and addresses of living parents, grandparents, in-laws or other relatives in appropriate boxes. If you are listing relative other than in-laws, in blocks 20 and 21; write the relationship in the appropriate box (i.e., grandmother, brother, uncle, foster- or step-parent). Please include full street address, city, state, and ZIP Code. (ZIP Codes are necessary for release to hometown media). If the address in block 19 is the same as block 18, mark the box in the address line in box 19. The same applies to boxes 20 and 21. 22. Indicate the name of the high school you graduated from, the year you graduated, and the city, state, and Zip Code where the high school is located. 23. - 25. FOR RESERVISTS USE ONLY. If you are a reservist please indicate your home address, city, state, and Zip Code in block 23. In block 24 indicate the name and address of your employer. In block 25 indicate your position or job title within the company, and the number of years you have been employed there. Indicate the city, state, and Zip Code of your employer. 	<p>Numbers below correspond with the number of blocks on this form. If a box is marked below, something is wrong with the corresponding block on the form. Please verify the information, make necessary changes, and return to FHTNC for processing. Our address is:</p> <p style="text-align: center;">FHTNC 1877 DILLINGHAM BLVD NORFOLK VA 23511-3097.</p> <p>Phone: Comm. (804) 444-2221; DSN 564-2221. FAX: Comm. (804) 445-1092.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr><td style="width: 5%; text-align: center;">1</td><td style="width: 85%;">Name and signature not legible; no SSN; no signature. (SSN and signature required for processing.)</td><td style="width: 10%;"></td></tr> <tr><td style="text-align: center;">2</td><td>Rank not indicated.</td><td></td></tr> <tr><td style="text-align: center;">3</td><td>Month and year reported not indicated.</td><td></td></tr> <tr><td style="text-align: center;">4</td><td>Projected rotation date not indicated.</td><td></td></tr> <tr><td style="text-align: center;">5</td><td>Command and address not fully indicated.</td><td></td></tr> <tr><td style="text-align: center;">6</td><td>Not signed. Duty phone number not indicated; homeport or command location not indicated.</td><td></td></tr> <tr><td style="text-align: center;">7</td><td>Unit code incorrect; not valid for branch of service; unit code not fully indicated.</td><td></td></tr> <tr><td style="text-align: center;">8</td><td>Branch of service not checked.</td><td></td></tr> <tr><td style="text-align: center;">9</td><td>Duty status not checked.</td><td></td></tr> <tr><td style="text-align: center;">10</td><td>Date entered service not indicated.</td><td></td></tr> <tr><td style="text-align: center;">11</td><td>Sex of submitter not indicated.</td><td></td></tr> <tr><td style="text-align: center;">12</td><td>Marital status not indicated.</td><td></td></tr> <tr><td style="text-align: center;">13</td><td>Spouse's name not indicated.</td><td></td></tr> <tr><td style="text-align: center;">14</td><td>Name and location of college or university not indicated; type of degree not indicated; graduation date not indicated.</td><td></td></tr> <tr><td style="text-align: center;">15</td><td>Name and location of college or university not indicated; type of degree not indicated; graduation date not indicated.</td><td></td></tr> <tr><td style="text-align: center;">16</td><td>Job title/duty assigned not indicated.</td><td></td></tr> <tr><td style="text-align: center;">17</td><td>No story indicated; not enough information; no course description, for school; copy of citation not attached.</td><td></td></tr> <tr><td style="text-align: center;">18</td><td>Missing or confusing parental information; no home tie specified; no street address indicated. Zip Code mandatory.</td><td></td></tr> <tr><td style="text-align: center;">19</td><td>Same address box checked with different address shown; missing or confusing parental information. Zip Code mandatory.</td><td></td></tr> <tr><td style="text-align: center;">20</td><td>Relationship not indicated; missing or confusing information; address not complete. Zip Code mandatory.</td><td></td></tr> <tr><td style="text-align: center;">21</td><td>Same address box checked with different address shown. Relationship not indicated. Zip Code mandatory.</td><td></td></tr> <tr><td style="text-align: center;">22</td><td>No high school name indicated; year graduated not indicated; city not indicated; state not indicated. Zip Code mandatory.</td><td></td></tr> <tr><td style="text-align: center;">23</td><td>No home address indicated; city not indicated; state not indicated. Zip Code mandatory.</td><td></td></tr> <tr><td style="text-align: center;">24</td><td>No employment indicated; employer's address not indicated.</td><td></td></tr> <tr><td style="text-align: center;">25</td><td>Position or job title not indicated; years employed not indicated; city not indicated; state not indicated. Zip Code mandatory.</td><td></td></tr> <tr><td style="text-align: center;">26</td><td>Other - see attached sheet.</td><td></td></tr> </tbody> </table>	1	Name and signature not legible; no SSN; no signature. (SSN and signature required for processing.)		2	Rank not indicated.		3	Month and year reported not indicated.		4	Projected rotation date not indicated.		5	Command and address not fully indicated.		6	Not signed. 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Zip Code mandatory.		20	Relationship not indicated; missing or confusing information; address not complete. Zip Code mandatory.		21	Same address box checked with different address shown. Relationship not indicated. Zip Code mandatory.		22	No high school name indicated; year graduated not indicated; city not indicated; state not indicated. Zip Code mandatory.		23	No home address indicated; city not indicated; state not indicated. Zip Code mandatory.		24	No employment indicated; employer's address not indicated.		25	Position or job title not indicated; years employed not indicated; city not indicated; state not indicated. Zip Code mandatory.		26	Other - see attached sheet.	
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26	Other - see attached sheet.																																																																														

Figure 17-3.—An example of a NAVSO 5724/1 (back).

authority” may be whomever the commander has designated to conduct the fleet hometown news program within his unit (usually the PAO, but it can be also a JO). The command releasing authority prints and signs his name in block six of the release form and indicates his duty telephone number.

Social Security Number

Make sure the servicemember understands that the social security number listed in block 1 will not appear on the actual news release. It is required solely to track casualties.

PHOTOGRAPHS

Good photographs enhance the potential use of hometown news releases. Either formal or informal, portraits are useful hometown news photographs. These photographs range from the basic head and shoulders picture (mug shot) to a shot of the individual in a working environment. The individual’s face should be clearly identifiable in the photograph.

The FHTNC prefers at least five black-and-white wallet-sized prints for each submission. The wallet-sized prints will fit easily in standard business-sized envelopes. However, if you must mail larger prints, the FHTNC will accommodate you.

Digital images saved to disk are acceptable as supplemental information, but photographs are preferred. The Center will scan photos and make them available in digital image format for media outlets that request them. Do not send photo negatives to the FHTNC, as it does not have the capability to work with them.

Most of the print media editors on-line at the FHTNC enthusiastically request more photographs. The Center sends out **all** photographs it receives, informal or formal, as long as amplifying information (identification of people, description of the event taking place, etc.) is included on the back of each photograph. Type this information on a separate piece of paper or on a label and attach it to the photograph. Your doing this prevents “bleed-through,” a common occurrence when you write on the back of a photograph with a ballpoint pen. Put the photograph in an envelope and attach it to the completed NAVSO 5724/1.

LETTER OF TRANSMITTAL

If you send nine or fewer release forms to the FHTNC at one time, the command releasing authority must complete block two of the release form. However, if a single mailing consists of 10 or more release forms, you must include a cover document called a letter of transmittal (fig. 17-4).

A letter of transmittal serves several purposes. It makes the transaction official and gives the FHTNC authority to process the story. In addition, it aids the Center in processing the material faster by indicating the type of material submitted, the general subject matter and the number of stories involved.

The CO or an officially designated representative (such as the PAO) should sign letters of transmittal. Send only the original of the letter to the FHTNC.

HOLD FILE

LEARNING OBJECTIVE: *Interpret the policies regarding the submission of a hold file to the FHTNC.*

A hold file is a roster package of NAVSO 5724/1 release forms submitted by a unit when it deploys. The hold file provides a rapid means of generating timely and newsworthy releases about the accomplishments, achievements and travels of your crew, either individually or as a group.

Hold files are maintained by the FHTNC for the length of the deployment and are normally returned to the command once the deployment is completed. If your unit is not deployed, you should maintain an updated roster package in your office anyway. In the event that your unit must deploy on short notice, you can submit a hold file with little effort.

Any unit departing on an extended deployment (usually two months or longer) should forward a hold file to the Center. If your unit will be involved in exercises or special operations of shorter duration, seek the guidance of the FHTNC.

MAILING THE HOLD FILE

You should update and verify all the release forms in your hold file 30 days before your unit deploys. Mail the hold file to the FHTNC when you are 20 days from the deployment date. Make sure it is in alphabetical order by last name and accompanied by a letter of

**USS MOLLUSK (FFG 1370)
FPO AE 09989-5724**

5724
Code
Date

From: Commanding Officer, USS MOLLUSK (FFG 1370)
To: Director, Fleet Home Town News Center, Building X-18, Naval Station, Norfolk, VA
23511-6698

Subj: FORWARDING OF HOME TOWN NEWS MATERIAL

Ref: (a) SECNAVINST 5724.3

Encl: (1) NAVSO 5724/1 release forms (reporting aboard) (12)
(2) Deletions to Hold File (9)

1. Enclosure (1), which is forwarded per reference (a), has been verified for accuracy and is authorized for release.

2. Add enclosure (1) to Hold File after processing.

3. Delete names in enclosure (2) from Hold File.

P. J. MUREX
By direction

Figure 17-4.—Letter of transmittal.

transmittal. We recommend including the deployment information or story in the letter of transmittal.

NOTE: When you submit stories for release, the Center does not require strict adherence to journalistic style. Since the FHTNC is ultimately responsible for editorial action, all you need to include is a brief synopsis of the facts that answer the five Ws.

Before the hold file is sealed and on its way to the FHTNC, you should make a copy of each release form and store each one of them in an appropriately marked office file. Your hold file should be an exact duplicate of the one received by the Center. This is extremely critical, especially when you must change data or pull a release form in the event of a death or injury.

PROCESSING THE DEPLOYMENT STORY

When a unit deploys, the PAO or his representative normally sends a message to the FHTNC that contains the following information:

- The authority for the FHTNC to process the deployment story.

- The date the story should be processed (usually without delay).
- Verification that the hold file is accurate and up-to-date.

Once the message is sent, the Center can work on writing the deployment story, which will result in a release for all of the release forms in the hold file.

An example of a hold file message to the FHTNC is shown in figure 17-5.

SENDING STORIES BY MESSAGE

Once the hold file is at the Center, you may send several different types of stories by naval message. The mid-deployment story (fig. 17-6) and end-of-deployment story (fig. 17-7) are good ways to get multiple releases for each release form submitted.

Further, you should pursue the types of stories mentioned earlier — those dealing with the military or personal achievements of individuals. Doing this in connection with your hold file is easy. For instance, say

FM USS MOLLUSK

TO FHTNC NORFOLK VA

UNCLAS //NO5720//

SUBJ: DEPLOYMENT STORY

A. MY LTR 00:JPJ:DJ 5724 OF 20 SEP 1994

1. HOLD FILE (HF) SUBMITTED WITH REF A
VERIFIED ACCURATE.

2. REQ IMMEDIATE PROCESSING OF
DEPLOYMENT STORY CONTAINED IN REF A
FOR MY HF.

BT

Figure 17-5. Hold file message.

Lt. Cmdr. Nunez is awarded the Meritorious Service Medal. When you advise the Center of the award (and include amplifying information from the medal citation), Lt. Cmdr. Nunez's release form will be pulled from the hold file and the story will be processed. The release form will then be returned to the file.

UPDATING THE HOLD FILE

Hold files have a 60-day life cycle. When you send a hold file to the FHTNC, the cycle begins on the day the Center receives it.

At day 50, your unit will be sent a message advising that the file will be returned in 10 days unless it is updated. Each time you update your hold file, another 60-day cycle begins.

The FHTNC considers an update as any communication regarding the hold file. It may be a list of names to be deleted, a list of release forms for

persons who have reported to the command or simply a declaration that the hold file is current and accurate. A hold file update message is shown in figure 17-8.

HOLD FILE DISPOSITION

After the end-of-deployment story is processed, the FHTNC retains the hold file for 30 days in an alibi file before it is returned to the originating command. You also may request that the Center destroy the hold file.

RUN AND RETURN STORIES

Consider the following scenario: Yesterday, 25 members of your command received awards for their participation in the base "Adopt-A-School" Program. A check of your files reveals that all of the awardees have release forms on file in your office. Your unit is not deployed and it is not scheduled to deploy for about a year. How should you submit the release forms

FM	USS MOLLUSK
TO	FHTNC NORFOLK VA
UNCLAS //NO5720//	
SUBJ: PROPOSED MID-DEPLOYMENT STORY	
A. SECNAVINST 5724.3	
B. MY HOLD FILE	
1. IAW REF A, FOL PROPOSED MID-DEPLOYMENT STORY SUBMITTED FOR APPROVAL AND RELEASE BY FHTNC WITH REF B:	
<p>QUOTE. THE GUIDED MISSILE FRIGATE USS MOLLUSK, HOMEPORTED AT NORFOLK, VA, IS MIDWAY THROUGH A SIX-MONTH DEPLOYMENT TO THE MEDITERRANEAN SEA AS PART OF THE TEN-SHIP USS LIMPET AIRCRAFT CARRIER BATTLE GROUP. USS MOLLUSK HAS PARTICIPATED IN THE NATO EXERCISE DISPLAY DETERMINATION AND HAS OPERATED WITH ALLIED NAVIES FROM ITALY, UNITED KINGDOM, FRANCE, SPAIN, GREECE AND TURKEY. THE SHIP HAS MADE PORT VISITS AT ROTA, SPAIN; NAPLES, ITALY; AUGUSTA BAY, SICILY; AND TOULON, FRANCE. AT AUGUSTA BAY, CREWMEMBERS FROM THE MOLLUSK DELIVERED PROJECT HANDCLASP MATERIALS TO AN ORPHANAGE AND REPAINTED THE EXTERIOR OF A SCHOOL FOR HANDICAPPED CHILDREN AT SIRACUSA, SICILY. END QUOTE.</p>	
BT	

Figure 17-6. Mid-deployment story.

without breaking the integrity of your “inactive” hold file?

The answer is simple — at the top of each release form, mark “**RUN AND RETURN**” before you mail them to the FHTNC. After processing the release forms and holding them for 30 days, the Center will return them to you so you may keep your hold file intact.

NOTE: Make sure the information on “run and return” stories is current before they are mailed to the FHTNC.

HINTS AND REMINDERS

LEARNING OBJECTIVE: *List the hints and reminders used in connection with processing hometown news stories.*

The following hints and reminders are offered as a checklist to help you get the most out of the Fleet Home Town News Program:

- Use only the latest edition of the Fleet Home Town News Release Form (NAVSO 5724/1) (see SECNAVINST 5324.1).

FM USS MOLLUSK

TO FHTNC NORFOLK VA

UNCLAS //NO5720//

SUBJ: END OF DEPLOYMENT STORY

A. MY HOLD FILE (HF)

B. MY 010101Z DEC 94

C. MY 010202Z JAN 95

1. RETURNED TO NORFOLK AFTER A SIX-MONTH DEPLOYMENT TO THE MEDITERRANEAN SEA AS PART OF THE TEN-SHIP USS LIMPET AIRCRAFT CARRIER BATTLE GROUP. DURING THE DEPLOYMENT, THE SHIP STEAMED 15,000 MILES AND EARNED ITS SECOND CONSECUTIVE BATTLE EFFICIENCY "E" AWARD. THIS DEPLOYMENT MARKED THE SEVENTH TIME USS MOLLUSK DEPLOYED TO THE MEDITERRANEAN SEA.

2. HOLD FILE VERIFIED ACCURATE EXCEPT DELETE ENS CARABOK, A. K.

3. REQ END OF DEPLOYMENT STORY FOR REF A. REFS B AND C PROVIDE ADDITIONAL DETAILS ABOUT THE DEPLOYMENT.

4. REQ RETURN REF A AFTER PROCESSING.

BT

Figure 17-7.—End-of-deployment story.

- Follow the block-by-block instructions on the back of the NAVSO 5724/1.
- Make sure the person to whom the release pertains fills in his social security number in block 1 of the release form.
- Make sure the person to whom the release pertains reads and understands the Privacy Act statement on page 1.
- Submit release forms on individuals with hometown ties **only** in the United States, American Samoa, Guam and the U.S. Virgin Islands.
- Screen the release forms for legibility, accuracy and completeness before submission.
- Keep file copies of the messages or letters you send to the FHTNC to use as a ready reference.
- Make sure the letter of transmittal or block six (command releasing authority) of the release form is signed before mailing.
- Submit only current news items.
- Check your hold file frequently. Make sure you update your release forms when people are promoted, qualify or reenlist.
- Do not submit release forms marked "Do Not Release."
- Do not request the stories be sent to specific media.

FM USS MOLLUSK

TO FHTNC NORFOLK VA

UNCLAS //NO5720//

SUBJ: HOLD FILE (HF) UPDATE

1. REQ FOL DELETIONS TO HF:

JO1 PRONOUN, A. L.
MMCS WRENCH, C. P.
DTC FLUORIDE, B. R.
HM3 PLASMA, R. K.
MS2 BUFFET, F. Y.

2. FOL PERS HAVE BEEN PROMOTED TO PRESENT RANK:

PC1 DRAM (CAPPED)
LCDR GUI
YN2 DEFRAG
TM2 BERNOULLI
BT1 QWERTY

3. FOURTEEN ADDITIONAL RELEASE FORMS MAILED TO YOU THIS DATE FOR INCLUSION IN HF.

4. WITH PARA 1 AND 2 CHANGES, HF VERIFIED UP-TO-DATE.

BT

Figure 17-8.—Hold file update message.

COMMUNICATING WITH THE FLEET HOME TOWN NEWS CENTER

LEARNING OBJECTIVE: *Recognize the various methods used to communicate with the Fleet Home Town News Program.*

The following information is provided to assist you in communicating with the Fleet Home Town News Center.

INTERNET ACCESS:

Questions or comments about the Fleet Home Town News Program can be directed to the

command's official Navy web site, at:
www.chinfo.navy.mil/navpalib/chinfo/fhntc.html

TELEPHONE:

(C) (757) 444-4149
DSN: 564-4199

MAILING ADDRESS:

DIRECTOR
Fleet Home Town News Center
9420 3 Ave, Suite 100
Norfolk, VA 23511-2125

APPENDIX 1

GLOSSARY

ACTION—In still photography, movement within a scene being photographed.

ADVANCE STORY—A story written to promote scheduled special event.

AFRTS—American Forces Radio and Television Service. Provides its outlets (including NBS detachments) with broadcasting materials.

AFRTS-BC—American Forces Radio and Television Service Broadcast Center. Provides radio and television program materials through the AFRTS Satellite Network (SATNET), on the Armed Forces Satellite-Transmitted Radio Service (AFSTRS) and AFRTS-BC Affiliate Information Network(AIN) teletype service.

AGIATION—The process of moving a photographic film, plate or paper in a processing bath or moving the bath relative to the photographic material during processing.

AMPLITUDE—The range or strength of an electrical signal.

APERTURE—In an optical system, an opening through which light can pass.

ART—A general term for all newspaper and magazine illustrations, including the flag.

ASPECT RATIO—In television, the proportional relationship of the width of the screen to the height of the screen. The aspect ratio of any television screen, regardless of its physical size, is 3:4—three units high and four units wide.

ASSEMBLE EDITING—In television, an editing mode where the editing control unit (ECU) adds control track and program footage (both audio tracks and the video track) to the edit/record videocassette recorder (VCR) at a predetermined in-edited point.

ATTRIBUTION—The act of referring to the name of a person in a news story who makes a statement that may be challenged.

AUDIO CONSOLE—In radio and television, the main board to which microphones, cartridge machines, reel-to-reel tape recorders/reproducers,

remote lines, CD players and other audio equipment are connected.

AUDITION—In radio, the nonprogram channel on an audio console.

BACKGROUND BRIEFING—A briefing usually delivered by the PAO to give reporters background information about a particular subject. The content or source of a story written from a background briefing is usually attributed to a “Navy spokesperson,” “informed military sources” or some other truthful, but not specifically identified, individual imparting the information.

BACKLIGHTING—In still photography and television, the type of lighting effect created when the light source is in front of the photographer and behind the subject. Backlighting is used to separate the subject from the background by casting a rim of light across the head and shoulders of the subject.

BALANCE—(1) In still photography, the process of placing elements of balance, such as objects, shapes or tones, in opposing sections of a photographic composition so that each section appears to have an equal amount of weight or value. (2) In radio and television, the process of adjusting the levels of two or more sound sources in a program so each is heard at the proper comparative volume.

BARN DOORS—In television and still photography, metal flaps connected to the body of a lighting instrument used to control light dispersion.

BIOGRAPHY—A sketch of a person’s naval career, normally written for command and flag officers (and C/MCs).

BLUELINE—A replica of a newspaper in reverse; compatible to a blueprint.

BLUEPRINT—The layout sheets of a newspaper on which a detailed plan or sketch shows the arrangement of art, heads and copy. The blueprint guides the compositor in making up the actual pages.

BODY—The main part of a story that supports the lead and the bridge (if applicable) by telling the full story in detail.

BORDER—An ornamental or finishing rule used around the edge of printed matter.

BORDER AREA—In television, the portion of a graphic that helps prevent damage, eases handling, compensates for improperly framed shots and serves as a bleed-off area for over scanned television sets.

BOX—An enclosure of rules or border used around a headline or story to give a more prominent display.

BRIDGE—In news writing, a connecting sentence or paragraph between the lead and the body of a story.

CABLE RELEASE—A device consisting of a stiff wire encased in an outer flexible covering designed to trip a camera shutter without touching the camera itself. One end is threaded to fit the shutter, and the other has a thumb-operated plunger.

CAMCORDER—An electronic news gathering (ENG) camera that combines a camera, videocassette recorder and microphone in one unit.

CAMEL HAIR BRUSH—A term used to define any brush with superfine, soil bristles used for dusting lenses and front surface mirrors.

CAMERA—A light tight chamber, usually fitted with a lens, through which the image of an object is recorded on a light-sensitive material.

CAMERA, CONVERTIBLE—An electronic newsgathering (ENG) camera that maybe converted for use in a television studio.

CAMERA, ENG—A television camera powered by batteries and used for electronic news gathering (ENG) news assignments.

CAMERA, STUDIO—A television camera mounted on a pedestal that allows the camera operator to wheel it to different locations easily during shot changes.

CAMERA OPERATOR—In television, a member of the studio production team who operates the studio camera according to the instructions of the director.

CAPTION—A small headline or display line sometimes used with a cutline. (**NOTE:** The word

caption also is used as a synonym for the word *cutline*.)

CARD, CHROMA KEY—In television, a visual created when the image from one video source is inserted into the picture of another video source.

CARD, PLAIN TITLE—In television, a visual consisting of printed lettering (without any pictorial background), such as the title of the show and the name of the performers and producer.

CARD, SUPER/KEY—In television, a visual created when the lettering of a card is superimposed electronically over another background (or over another picture) from another camera.

CARET—A character (^) used to denote where corrections are to be inserted in copy.

CART—*See* CARTRIDGE.

CARTRIDGE—A continuous loop of tape encased in plastic and used to play music and sound effects. It is played in a cartridge machine and recues itself automatically after each use. Commonly referred to as a “cart” in the broadcast industry.

CCU—Camera Control Unit. In television, a device consisting of a waveform monitor, television monitor and shading control used by technicians to monitor and adjust the video levels of a studio camera. The CCU is normally located in the television control room.

CD—*See* COMPACT DISC.

CHANGE TRANSMITTAL—The medium used to transmit changes to an instruction, and under special circumstances, a notice.

CHARACTER GENERATOR—In television, a computer graphics system used to create letters and numbers in a variety of sizes and fonts.

CHINFO—Chief of Information. Normally a rear admiral who is responsible for the development of Navy public affairs guidance.

CHROMA KEY—In television, an electronic special effect that combines two video sources into a composite picture, creating the illusion that the two sources are physically together.

CIRCUIT—In radio and television, a group of Navy Broadcasting Service (NBS) detachments or Shipboard Information, Training and Entertainment (SITE) equipped ships that receive the same weekly package of program material

units on a sequential basis from the American Forces Radio and Television Service Broadcast Center (AFRTS-BC). All circuits within a specific geographical area are overseen by a circuit manager.

CLOSE-UP (CU)—In television and still photography, a shot in which the talent or subject is of primary interest and only a small segment of the background is discernible.

COLOR BARS—In television, a color standard used to test and align color television equipment.

COLOR TEMPERATURE—The apparent color of a light source in terms of its relative blue or red content. Color temperature is measured in degrees Kelvin (K).

COLORS, PRIMARY—In still photography and television, blue, green and red.

COLORS, SECONDARY—In still photography and television, cyan, yellow and magenta.

COLUMN INCH—An area that's one column wide and one inch deep and is used in measuring the contents of a newspaper page.

COLUMN RULE—A thin, vertical line used to separate columns of type and to separate unrelated items, such as photographs and stories, from the rest of the page.

COMMAND HISTORY—(1) The only overall account of the activities and achievements of a U.S. Navy command. Annual command histories are housed at the Naval Historical Center in Washington, D.C., and serve as the eventual basis for published naval histories. (2) The portion of a welcome aboard booklet or media information kit that briefly summarizes the history of a command.

COMMAND PRESENTATION—A visual presentation that covers the mission and history of a command. It is usually narrated live from a script and accompanied by either overhead transparencies or 35mm slides. The command presentation also may be recorded on videotape.

COMMAND RELEASING AUTHORITY—The individual designated by the commander to release home town news in block two of the Fleet Home Town News Release Form (NAVSO 5724/1).

COMMAND WELCOME INFORMATION—See WELCOME ABOARD BOOKLET.

COMPACT DISC—A 4 3/4-inch plastic platter with digitally encoded audio. When inserted in a compact disc player, the disc is seamed by a laser beam positioned above it, thus producing superior audio.

COMPILATION CUTTING—In television, a videotape editing technique whereby segments are tied together through narration.

COMPUTER GRAPHIC—In television, an electronic picture stored digitally in a computer that may be recalled for airing or altering by a graphic artist.

CONTINUITY CUTTING—In television, a commonly used videotape editing technique for news or feature releases when the storytelling is dependent on matching consecutive scenes. Continuity cutting includes the cutaway and cut-in.

CONTRAST—In still photography and television, a general term referring to differences among extremes of tone values in negatives, prints and subject or lighting. When the difference is great, the contrast is called high, hard or contrasty; when the difference is slight, the contrast is soft, flat or low.

COPY—A term used to describe all news manuscripts and text or artwork to be printed in a publication.

COPY EDITING—The process of locating and correcting inaccuracies in a news manuscript before they can be printed and distributed.

COPY EDITING SYMBOLS—A special set of symbols used by a copy editor to make corrections, additions or deletions in copy.

COPYRIGHT—The exclusive right of possession given an individual by law to protect his literary works; musical works (including any accompanying words); dramatic works (including any accompanying music); pantomimes and choreographic works; pictorial, graphic and sculptural works; motion pictures and other audiovisual works; and sound recordings.

COUNTDOWN LEADER—In television, the numbers that appear on videotape before the actual program begins. Countdown leader is used to facilitate precise cuing.

CREATED NEWS—News that is generally concerned with something the Navy, or some

person or organization has done or plans to do and wants the public to know about.

CREDIT LINE—The final portion of a cutline used to acknowledge the originator of a photograph.

CROP—The act of blocking out unwanted portions of a photograph, either by cutting the print or by enlarging or contact printing.

CROSSCUTTING—In television, the use of shots from two different actions or events that will finally be related.

CUE—(1) In radio and television, the act of presetting programming materials so that they are available for immediate airing. (2) The signal given to the talent by the floor manager, meaning “begin action” or “start talking.”

CUE DOTS—In television, the small, white squares that appear in the upper right-hand corner of the television screen when certain American Forces Radio and Television Service (AFRTS) videocassettes are played. Programs on multiple videocassettes are recue-dotted at 10, seven and two seconds from the end of each tape, except the last tape of the program.

CUTAWAY—In television, a secondary action shot used to change positions, movements or characters or to denote a lapse of time.

CUT-IN—In television, a primary action shot from the main scene that is relevant to the mood or action.

CUTLINE—The explanatory matter that accompanies a photograph. A cutline supplements a photograph by explaining action, naming people and giving background information.

CUTOFF LINE SYSTEM—In television, natural dividing lines that assist the director in producing aesthetically pleasing shots.

CUTOFF RULE—A rule or line placed horizontally across one or more columns to separate units, such as boxes and multicolumn heads, from the rest of the page.

CYLINDER—*See* PLATEN.

DAISY WHEEL—In typewriters and printers, the mechanism used to print keyboard characters. The individual characters of a daisy wheel are mounted in a circular pattern and connected to a hub with spokes; the whole unit resembles a daisy. When a character on the keyboard is depressed, the

daisywheel rotates until the correct character is in place.

DATELINE—The lead-in line of a cutline or story that gives the point of origin.

dB (DECIBEL) GAIN SWITCH—In television, a switch used to increase the video output of a camera. The dB gain switch normally has two positions —6dB and 12dB.

DEPTH—In still photography, an illusion of three dimensional space that is sometimes created by a combination of favorable lighting and coloring of the set and favorable viewing conditions for the reproduction.

DEPTH OF FIELD—The distance between the points nearest and farthest from the camera that are acceptably sharp at a given lens setting.

DESIGN—The function of planning for the total structure of a newspaper page before any layout work is done.

DESIGN, BRACE—*See* DESIGN, FOCUS.

DESIGN, CIRCUS—A traditional front-page newspaper design pattern in which each individual element competes for the reader’s immediate attention, resulting in no clear focus of interest on the page.

DESIGN, FOCUS—A traditional front page newspaper design pattern in which the headlines and pictures are positioned on the page to form a diagonal line from the upper left-hand corner to the lower right-hand corner.

DESIGN, FUNCTIONAL—A contemporary front page newspaper design pattern in which the page is made up in a reamer that will be most appealing and convenient to the reader.

DESIGN, GRID—A contemporary front-page newspaper design consisting of modules of varying sizes with the grid lines formed by the spaces between columns and the spaces separating stories.

DESIGN, HORIZONTAL—A contemporary front page newspaper design pattern where elements are placed on the page. The page is made up with the elements being placed on the page so the majority of the elements present a horizontal display.

DESIGN, MODULAR—A contemporary front page newspaper design pattern where pleasing

blocks(modules) of vertical and horizontal rectangles are combined.

DESIGN, RAZZLE-DAZZLE—*See* DESIGN, CIRCUS.

DESIGN, SINGLE THEME—A contemporary front page newspaper design that emphasizes a single, Important story or issue without the use of stories or reefers.

DESIGN, TOTAL THEME—A contemporary frontpage newspaper design that emphasizes a single, important story or issue with a large photograph (or line art) covering the entire area, a single story and photograph, or a billboard (dominant photograph with page reefers to major stories).

DESKTOP PUBLISHING—The use of a microcomputer, page layout software and a laser printer to generate typeset-quality graphics and text.

DIRECTIVE—A type of correspondence that prescribes or establishes policy, organization, conduct, methods or procedures; requires action or sets forth information essential to the effective administration or operation of activities concerned; or contains authority or information that must be issued formally.

DIRECTOR—In television, the individual in charge of the studio production team. The director gives instructions to every member of the team, either directly, or in the case of the talent, indirectly.

DISPLAY SCREEN—Another name for a computer monitor.

DMI—Defense Media Institute. Provides specialized instruction for all military service personnel in the public affairs field.

DOLLY—In television, a secondary camera movement where the camera and pedestal are moved toward or away from the subject.

DOMINANT ELEMENTS—*See* NEWS PEG.

DUMMY—The process of indicating where each element will be placed on a layout sheet (sometimes called dummying or roughing in).

ECHO—In radio, the repetition of sound usually achieved by using a reel-to-reel tape recorder.

ECU—Editing control unit. In television, a piece of electronic equipment used to control the playback

and edit/record videocassette recorders during videotape editing.

EDITING CELL—An area of a television studio devoted to videotape editing. Most editing cells in NBS detachments include a playback video cassette recorder (VCR), edit/record VCR, two television monitors, audio mixer and an editing control unit (ECU).

EDITORIALIZING—A violation in news writing that occurs when the writer consciously or unconsciously expresses doubt, censure or praise in a news story or headline.

ELECTRONIC FLASH—In still photography, a high voltage light source for illumination, producing a momentary flash of light of high intensity.

ENG—Electronic News Gathering. In television, the use of a portable video camera and portable video cassette recorder to cover news.

ENLARGER—In still photography, a photographic projection printer.

EQUALIZER—In radio and television, a piece of equipment that alters the frequency response of an audio signal, allowing modification of specific portions of the overall signal. Equalization does not eliminate frequencies totally, but it will vary their playback levels.

ESSENTIAL AREA—In television, the portion of a visual that must include all the important information to ensure its reception by the viewer.

EXPOSURE—In still photography, a predetermined combination of shutter speed and lens aperture that allows light to pass through the lens and strike the film .

EXTREME CLOSE-UP (ECU)—In television and still photography, a shot where the talent or subject practically fills the screen or frame.

EXTREME LONG SHOT (ELS)—In television and still photography, a shot that produces a very wide field of view.

FADE—In radio and television, the gradual decrease or increase of the audio or video signal.

FEATURE NEWS—News that centers on an event or situation that stirs the emotions or imagination of an individual.

FEATURE STORY—A story that not only entertains, but is informative because it contains all the elements of a news story.

FHTNC—Fleet Home Town News Center. Administers the Fleet Home Town News Program.

FILE, ALIBI—A public affairs office file that contains query sheets and copies of news advisories released to the news media. Although a separate file, the news release file is also called an alibi file.

FILE, CLIP—A public affairs office file that contains clippings of stories that have been released and have appeared in print.

FILE, COMMAND—A public affairs office file that contains reference material pertaining to the command, such as the command history and biographies of the CO, XO and C/MC.

FILE, COMMUNITY RELATIONS—A public affairs office file that contains the names, addresses and telephone numbers of civic leaders and community groups with which the command maintains contact.

FILE, CORRESPONDENCE AND MEMOS—A public affairs office file that contains all outgoing and incoming official correspondence and memos.

FILE, FLEET HOME TOWN NEWS—A public affairs office file that contains a 90-day logbook or index file of each release form mailed to the Fleet Home Town News Center (FHTNC). For deployed units, this file contains copies of every release form that is part of a hold file.

FILE, FUTURE—A public affairs office file that contains a current listing of all events that have been scheduled or planned for the future.

FILE, MATTERS PENDING—A public affairs office file that maintains notes and reminders on pending ideas that may be useful for news releases, feature stories, news pegs for special events and other public affairs activities.

FILE, MEDIA RELATIONS—A public affairs office file that contains a listing of all media in the local area and any pertinent amplifying information.

FILE, NEWS RELEASE—A public affairs office file that contains the original news releases distributed to the media. The news release file is also called an alibi file.

FILE, PHOTOGRAPHIC—A public affairs office file that contains photographs of the ship underway or points of interest within a shore command. The photographic file also contains photographs to accompany biographies of the CO, XO and C/MC.

FILE, PROJECT—A public affairs office file that contains past, present and future public affairs projects involving the command.

FILE, SPEECH—A public affairs office file that contains copies of all prepared speeches and other presentations delivered by members of the command in connection with the speakers bureau. It also contains background material for future speeches.

FILM—A light-sensitive emulsion of silver halides suspended in gelatin and coated on a transparent and chemically neutral base, usually cellulose or polymer plastic.

FILM SPEED—*See* ISO.

FILTER—(1) In photography, a layer of colored glass, gelatin or other material used to alter the characteristics of light before it reaches the film. (2) In radio and television, an electronic circuit designed to pass only selected audio frequencies while eliminating all others.

FILTER, COLOR COMPENSATING—A filter used to change the overall color balance of photographic results obtained with color film and to compensate for deficiencies in the quality of the light when printing color films.

FILTERS, KODAK WRATTEN™—A line of filters used in black-and-white photography.

FIVE Ws, THE—The who, what, when, where, why (and sometimes how) that a journalist attempts to answer in writing a summary lead.

FLAG—A newspaper device used to indicate section pages or special pages, such as editorial, sports and family pages.

FLASH—*See* ELECTRONIC FLASH.

FLOOR MANAGER—In television, a member of the studio production team who is in charge of all activities on the studio floor. The floor manager's main responsibility is to communicate instructions from the director to the talent using hand signals.

FLOPPY DISK DRIVE—A secondary storage device that uses a removable magnetic disk (floppy disk).

FLUSH—To place copy even with the column margin on either the left or right. Usually designated “flush left” or “flush right.”

FOCAL LENGTH—The distance from the optical center of the lens to the focal plane (film plane) when the camera is focused upon an object at infinity.

FOCAL PLANE—The surface (plane) on which an axial image transmitted by a lens is brought to its sharpest focus.

FOCAL POINT—A point on a newspaper page where the reader normally looks for the most important story.

FOCUS—To adjust the position of either the lens or focusing screen in a camera or projector to secure the sharpest possible image of the object.

FOLIO LINE—A newspaper’s identification line on each page.

FOLLOW-UP STORY—A story written to update the developments of a previous story.

FOOTCANDLE—A basic measurement used to gauge the intensity of light.

FORMAL BALANCE DESIGN—A traditional front page newspaper design pattern in which the page is divided in half vertically and each element on one side of the vertical centerline is duplicated by the same treatment of elements at the same point on the opposite side.

FREEDOM OF INFORMATION ACT, THE—A law established to give the public the right to access records of the executive branch of the federal government.

f/STOP—A numbered diaphragm opening through which light enters the camera; f/stops are usually calibrated to change the amount of light by a factor of two times with each succeeding number.

GAIN—The level of amplification for video or audio signals.

GAIN CONTROL—*See* POT.

GALLEY PROOF—The initial copy of a typeset story used for proofreading and annotating typesetter errors.

GROUND GLASS—A sheet of glass with a grained or matte (translucent) surface, such as a focusing screen or a diffusing screen.

HALFTONE—The technique used to reproduce photographs or drawings with tonal qualities through the process of creating a pattern of dots or lines; the lighter the tone, the smaller and farther apart the dots.

HANDOUT—A term used by civilian editors to describe a standard news release.

HARD NEWS—A type of news story designed primarily to inform the reader, listener or viewer.

HEAD, BANNER—A headline that is set the full-page width at the top of a news page to draw attention to the lead story or the page in which it appears.

HEAD, CROSSLINE—A headline similar in appearance to a banner head, except it does not always span the full width of the page. However, the crossline head covers all the columns of the story to which it pertains.

HEAD, FLUSH LEFT—A two- or three-line headline with each line set flush left.

HEAD, HAMMER—A headline variant that is set twice the size of the main head, set flush left and is no wider than half the width of the headline area. Also known as a reverse kicker.

HEAD, JUMP—A headline variant designed to help the reader find a portion of a story continued from another page.

HEAD, NOVELTY—A headline variant that features typographical tricks, such as setting part of the head upside down, using an ornate typeface or substituting artwork as characters.

HEAD, SIDE—A headline that runs alongside a story.

HEAD, SKYLINE—A banner headline set above the flag or nameplate.

HEAD, STANDING—A headline variant used for regular or recurring content, such as sports and chaplains’ columns. The standing head does not change from issue to issue.

HEAD, STREAMER—The widest and biggest multicolumn headline on a page, regardless of whether it is set the full width of the page.

HEAD, TRIPOD—A headline variant characterized by a single, short line of larger type set to the left of

two lines of smaller type. The tripod portion (larger wording) should be twice the size of the definition or main headline.

HEAD, WICKET—A headline variant characterized by a short line of larger type set to the right of two lines of smaller type. The wicket is essentially a tripod head in reverse, sans colon.

HEADLINE—A newspaper device that attracts the reader to a story, usually by summarizing the contents of the story (also referred to as a “head”).

HEADLINE SCHEDULE—A keyed record of all the headlines used in a particular newspaper and usually specifying the unit count for each.

HOLD FILE—A collection of Fleet Home Town News Release Forms (NAVSO 5724/1) submitted to the Fleet Home Town News Center (FHTNC) by a deploying unit. The hold file is used to process master (roster) stories, such as the deployment, mid-deployment and end-of-deployment stories.

HOUSE ORGAN—A publication printed by a business or organization that is intended primarily for internal readership.

HUE—In television, the actual color of light.

INITIAL LETTER—A large, ornate capital letter used at the beginning of a paragraph.

INSERT EDITING—In television, an editing mode whereby the editor may add or change video or audio separately or together without affecting the control track.

INSTRUCTION—A directive that contains authority or information having continuing reference value or requiring continuing action. It remains in effect for 7 years or until it is superseded or otherwise canceled by the originator or higher authority, whichever occurs first.

INTERVIEW—A conversation between two people, one of whom seeks information from the other.

INTERVIEW, AD-LIB—In radio and television, an interview method that is totally unrehearsed or “off the cuff.”

INTERVIEW, INFORMATION—In radio and television, a type of interview designed to inform the audience.

INTERVIEW, MAN ON THE STREET. *See* INTERVIEW, OPINION.

INTERVIEW, OPINION—In radio and television, an interview whereby the thoughts or opinions of the interviewee are highlighted, such as the “man on the street” interview.

INTERVIEW, PERSONALITY—In radio and television, an interview that highlights the accomplishments of an individual or the position you hold.

INTERVIEW, SCRIPTED—In radio and television, an interview method in which all the questions and answers are prepared in advance and the interviewee(s) read from a prepared text.

INTERVIEW, SEMI-SCRIPTED—In radio and television, an interview method in which the interviewer researches the interviewee and subject matter, reviews possible questions with the interviewee in advance, and in some instances, rehearses the interview.

INVERSE SQUARE LAW—The intensity of light received at a point varies inversely as the square of the distance from the source. The law holds for relatively small sources only and is useful in calculating photographic exposures.

INVERTED PYRAMID—The standard straight news story form in which the writer arranges the facts in descending order of importance.

IRIS DIAPHRAGM—A term applied to the adjustable aperture fitted into the barrel of a photographic lens and so-called because the contraction of the aperture resembles that of the iris (pupil) in the human eye.

ISO—In still photography, the standard that indicates the sensitivity (film speed) of black-and-white and color film. ISO is an acronym for International Standards Organization, a federation of all national standards bodies of the world.

JUMP CUT—In television, an awkward or jarring transition between two camera shots.

KELVIN—The measurement of the color of light in degrees. Numerically, the Kelvin temperature is equal to the Centigrade temperature plus 273 degrees.

KEYBOARD—An input device used with computers that includes alphabetic, numeric, punctuation, symbol and control keys.

KICKER—An underscored line of display type placed above the main headline and to the left

margin of the copy block. The kicker is one-half the size of the main headline and it is usually one-third to one-half the length of the main headline.

LATENT IMAGE—The image recorded by light on the light-sensitive emulsion that remains invisible until developed.

LATITUDE—In still photography, the amount by which a negative may be overexposed or underexposed without an appreciable loss of image quality.

LAYOUT—The overall pattern of the elements on a page, showing the arrangement of pictures, text and headlines.

LEAD—Pronounced “leed.” The first and most important paragraph of any news story. It attracts the reader and states the important facts first.

LEAD, SUMMARY—A news story lead that briefly summarizes the most important facts in the story.

LEADING LINES—A photographic technique used to direct attention toward the point of interest.

LENS—In still photography and television, the optical instrument or arrangement of light-refracting elements in a group; the lens is designed to collect and distribute rays of light in the formation of an image.

LENS, WIDE ANGLE—A lens of a shorter, final-length than the standard lens, used to get more area into the picture.

LENS, ZOOM—A variable final-length lens.

LETTER, BUSINESS—A form of correspondence generally used when writing agencies or individuals outside the Department of the Navy (DON) or Department of Defense (DoD).

LETTER OF TRANSMITTAL—A cover document used to submit 10 or more Fleet Home Town News Release Forms (NAVSO 5724/1).

LETTER, STANDARD NAVAL—Official correspondence used when writing to other naval commands or organizations within the Department of Defense (DoD).

LIBEL—A published (written, printed or pictured) defamation that unjustly holds a person up to ridicule, contempt, hatred or financial injury.

LIBEL PER SE—The more obvious and serious of the two forms of libel. Libel per se means “by itself” or “on the face of it.”

LIBEL PER QUOD—The least obvious of the two forms of libel. Libel per quod means “because of circumstance” or “by means of circumstance” and is committed by inference.

LIGHT, AVAILABLE—*See* LIGHT, EXISTING.

LIGHT, BOUNCE—In still photography, an electronic flash lighting technique in which the light source is directed at the ceiling or wall and bounced back to the subject as indirect light.

LIGHT, EXISTING—In still photography, the light that happens to be on the scene, such as light from table, floor and ceiling lights, neon signs, windows, skylights and candles.

LIGHT, FILL—In television, light used to fill in and soften harsh shadows created by the key light.

LIGHT, KEY—In television, the main light source providing sufficient light to operate the camera. The key light serves as the reference point for all other lighting.

LIGHT, NATURAL—*See* LIGHT, EXISTING.

LINE ART—Any piece of solid color art (illustrations, rules, headlines, borders, cartoons, crossword puzzles, etc.) suitable for photographing without the use of a halftone screen.

LIVE—(1) In radio and television, a program that is aired in realtime (as it happens). (2) A term used to describe a piece of equipment that is turned on, such as a “live microphone.”

LONG SHOT (LS)—In television and still photography, a shot that produces a full view of the scene, including details of background as well as foreground. When the director calls for a long shot, it normally will include five or six people.

MAKE-UP—The process of arranging pictures, headlines and news stories in a page layout to obtain maximum effectiveness.

MASTHEAD—A statement in a newspaper that gives the reader information about the publication, such as the name of the publisher, frequency of publication, names of staff members and the addresses or telephone numbers of either the editorial office or publisher (or both).

MEDIA—Plural form of the word medium; a term used to identify all ways and means of communicating news, information and entertainment to a relatively large audience.

MEDIA INFORMATION KIT—A folder that contains useful background information on a ship or station or a particular news event.

MEDIUM CLOSE-UP (MCU)—In television and still photography, a shot that normally includes the head and shoulders of the talent or subject.

MEDIUM LONG SHOT (MLS)—In television and still photography, a shot between the long shot (LS) and extreme long shot (ELM).

MICROPHONE, BIDIRECTIONAL—A microphone with a bidirectional polar pattern, allowing it to pick up sound in two directions.

MICROPHONE, BOOM—A unidirectional microphone attached to a hand-held pole, allowing the microphone to remain outside of camera range.

MICROPHONE, CONTACT—*See* MICROPHONE, HIDDEN.

MICROPHONE, DESK—A stationary microphone used primarily when the talent is working from behind a desk or lectern.

MICROPHONE, HAND—A unidirectional microphone normally used during ENG shooting assignments and audience participation programs.

MICROPHONE, HANGING—A stationary microphone used when a boom microphone is impractical because of lack of space or when a large set will not permit rapid boom movement. The hanging microphone is hung from the ceiling or overhead by its cable, placing it out of normal camera range.

MICROPHONE, HIDDEN—A stationary microphone often used to record the sound of an object to which it is in direct contact.

MICROPHONE, LAVALIERE—A small unidirectional microphone used by the talent and normally clipped or taped to an article of clothing.

MICROPHONE, LAVALIERE (DUAL REDUNDANCY)—Two lavalier microphones attached to the same clip. One microphone is live; the other serves as an emergency backup in case the primary microphone fails.

MICROPHONE, OMNIDIRECTIONAL—A microphone with an omnidirectional polar pattern, allowing it to pick-up sound in a 360-degree radius.

MICROPHONE, STAND—A stationary microphone used when the sound source is immobile and the microphone may be seen on camera.

MICROPHONE, UNIDIRECTIONAL—A microphone with a unidirectional polar pattern, allowing it to pick-up sound from only one direction

MICROPHONE, WIRELESS—A standard lavalier microphone connected to a battery-powered radio transmitter that relays a radio signal to a receiver in the audio control room. Used in productions where cable-free operations are desired.

MORE—A direction typed at the end of a page of copy to indicate that the story does not end there —more is coming.

MOTOR DRIVE—A mechanical device used with a 35mm single-lens reflex (SLR) camera that fires the shutter and advances the film for a preset number of exposures.

MUSIC BACKGROUND—In radio, music that helps set the mood of a radio program and increases audience appeal.

MUSIC, BRIDGE—In radio, music that connects or “bridges” together two ideas or thoughts in a radio program.

MUSIC, FILL—In radio, music used to fill time at the end of a radio program.

MUSIC, THEME—In radio, music that helps identify the subject or character of a radio program.

MWR—Morale, Welfare and Recreation. Unimportant source for information regarding recreation, intramural and youth programs.

NAMEPLATE—The name of a newspaper in large type at the top of the front page.

NAVSO 5724/1—The Fleet Home Town News Release Form (Rev. 8-88). The only authorized form for all home town news releases.

NBS—Navy Broadcasting Service. Manages AFRTS outlets within the DON.

NEC—Navy Enlisted Classification. A four-digit number that indicates a special qualification earned by an individual.

NEGATIVE—A photographic image on film or paper in which light tones are rendered dark and dark tones appear light.

NEWS, SOCIAL—News that most often deals with the activities of officers and enlisted wives' clubs, the happenings of the teenage set, weddings and local charity events.

NEWS, SPORTS—News that chronicles the activities of athletic teams, discusses upcoming games and details the accomplishments of sports figures.

NEWS, SPOT—News obtained on the scene of the event, hence fresh, live news. Usually used to refer to unexpected events.

NEWS ADVISORY—An abbreviated form of a standard Navy news release intended to get the news media to cover an event themselves.

NEWS CONFERENCE—A meeting between an official spokesperson and news correspondents conducted primarily to provide the correspondents with information necessary to report a news event accurately, particularly a fleet exercise, special event or VIP visit. Normally, a news conference is arranged only when the news is of such magnitude that it cannot adequately be disseminated through an official Navy news release.

NEWS PEG—The most significant or interesting fact in a story, usually featured in the first paragraph.

NEWS RELEASE—*See* RELEASE and RELEASE, STANDARD NAVY NEWS.

NEWSPAPER BROADSHEET—*See* NEWSPAPER, FULL-FORMAT.

NEWSPAPER, COMPACT—*See* NEWSPAPER, MAGAZINE-FORMAT.

NEWSPAPER, FULL-FORMAT—A newspaper that measures 16 or 17 inches wide and 21 to 22 inches deep (a full metropolitan daily-sized newspaper).

NEWSPAPER, MAGAZINE-FORMAT—A newspaper about half the size of a tabloid newspaper. It measures 7 to 8 inches wide and 10 to 11 inches deep.

NEWSPAPER, TABLOID—A newspaper that measures 10 to 12 inches wide and 14 to 18 inches deep. It is about half the size of a full-format newspaper.

NMPS—Navy Motion Picture Service. Provides most Navy ships with first-run movies on 1/2-inch Beta videocassettes.

NOTICE—A directive of a one-time nature or one that contains information or action for a brief time only. A notice usually remains in effect for less than six months, but is not permitted to remain in effect for longer than 1 year.

OCCSTD—Occupational standard. A task statement that describes a minimal professional requirement in a particular rate.

ON CUE—An instruction in a video news release that tells the talent to look at the television monitor in the studio and wait for the scene described in the video column to appear before continuing.

ONE-SHOT—In television, a shot that includes one talent.

ORAL PUNCTUATION MARKS—In radio, a series of diagonal lines added to copy to tell the announcer when to breathe, without disrupting the natural flow, phrasing and importance of a sentence.

ORNAMENTS—Any of several printer's devices, such as stars (dingbats) and dots (bullets), used to add interest and beauty to a printing job.

OSCILLOSCOPE—In television, a device used to display electronic signals visually and to setup and test television equipment.

PAN—In television, a secondary camera movement in which the camera is moved horizontally on a stationary pedestal (derived from "panorama").

PAO—Public affairs officer. A commissioned officer (1650 designator) trained to interpret and implement the theories and practices of Navy public affairs policy at the command level. At some smaller installations, the PAO may be an enlisted journalist or an enlisted person from another rating.

PAO, COLLATERAL-DUTY—A public affairs officer without the 1650 designator who has other assignments that are considered primary duties. In most cases, a collateral-duty PAO can devote only a minimal amount of time to public affairs work.

PA REGS—Short title for *U.S. Navy Public Affairs Policy and Regulations*, SECNAVINST 5720.44A. PA Regs provides the PAO and his staff with basic policy and regulations to carry out the public affairs and internal relations programs of the DON.

PEDESTAL—(1) In television, a device on which a camera is mounted. (2) A secondary camera movement where the camera is either raised or lowered on its pedestal.

PHASING—In radio, an effect usually used to enhance a person's voice and which is achieved when two identical audio sources are played back at slightly different start times.

PHOTO CAPTION—*See* CUTLINE.

PHOTOELECTRIC TRANSDUCER—*See* PICKUP TUBE.

PHOTOJOURNALISM—A means of communication where the main emphasis is predominantly achieved through photographs.

PICA—Printer's unit of measure; one-sixth of an inch or 12 points.

PICKUP TUBE—In television, a vacuum tube housed within a television camera that changes light into electrical energy. Also known as a photoelectric transducer.

PICTURE STORY—A planned, organized series of related pictures that tell a story.

PLATE—In offset lithography, the grained zinc or aluminum sheet that carries the image to be printed.

PLATEN—In typewriters and printers, the hard-rubber roller against which the individual letters or printer pins strike.

POINT—The unit of measurement in which type sizes are designated. One point is approximately one seventy-second of an inch; 12 points equal one pica.

POLAR PATTERN—In radio and television, the shape of the area around a microphone where it picks up sounds with maximum fidelity and volume.

POSTPRODUCTION—In radio and television, the last stage of the production process that largely involves quality control checks and final adjustments to the finished program.

POT—Potentiometer. In radio and television, a knob or slider used to vary the sound volume of an input to the audio console.

PREPRODUCTION—In radio and television, the primary production stage in which a live or taped program is planned and coordinated.

PRIMARY MOVEMENT—In television, movement in front of the camera, usually by the talent.

PRIVACY ACT, THE—A law that safeguards military and civilian government employees against the invasion of personal privacy and allows them to gain access to information about themselves.

PRODUCTION—In radio and television, the actual execution of a live or taped program.

PROJECTOR, CAROUSEL SLIDE—A visual communication medium used to project 35mm slides.

PROJECTOR, OPAQUE—A visual communication medium primarily used to project graphs, photographs and other visual aids that are too small to be seen but should be shown in their actual form.

PROJECTOR OVERHEAD TRANSPARENCY—A visual communication medium used to project the contents of a transparent overlay (text, illustrations or both).

PUBLIC AFFAIRS OFFICE—The office responsible for managing all command public affairs functions, such as public information, internal information and community relations.

QUADRANT DESIGN—A traditional front page newspaper design pattern where the page is divided into four quarters, and a dominant, eye-stopping element (picture or headline) is placed in each quarter so that diagonal quarters balance each other.

QUERY—A request for specific information by a reporter, usually made by telephone.

QUERY SHEET—A specially designed sheet used to document a query made by a reporter.

QUOTE—A portion of a story that contains the exact words of a speaker or writer.

RACK FOCUS—In television, the process of setting the focus on an object in the field of view. With rack focus, only the object focused upon and other

objects at the same distance will remain in focus—as long as the distance between them and the camera does not change.

RED EYE—In still photography, an effect that occurs in pictures of people and animals when the flash is used close to the optical axis of the lens and the subject is looking at the camera.

REEFER—A headline that refers the reader to an article inside the newspaper.

REEL-TO-REEL TAPE RECORDER/REPRODUCER—A type of tape recorder/reproducer that uses 1/4-inch magnetic tape supplied on spools. The tape, available in several reel sizes and tape lengths, must be threaded onto the machine, where it passes the tape heads at either 7.5, 15 or 30 inches per second (ips).

RELEASE—Information previously limited to a controlled number of persons that is made available to the general public. The release may be any material (written, printed, oral or photographic) that has been properly cleared and authorized for dissemination to the public by the Navy through any media.

RELEASE, ADVANCE NEWS—A type of release written to promote a scheduled special event.

RELEASE LINE—The portion of a news release that describes the urgency of the material, normally one of the following designations: For Immediate Release, For General Release, Do Not Use After (time and date) and Hold For Release Until (time and date).

RELEASE NUMBER—An identifying number assigned to a standard Navy news release.

RELEASE, RADIO NEWS—A type of news release designed for dissemination to radio stations and written in broadcast style.

RELEASE, STANDARD NAVY NEWS—A formal document, written in news style, concerning Navy activities approved for public dissemination by an authorized person. The enlisted journalist normally prepares and edits it, then the PAO, through the authority of the officer-in-command, approves the release.

RELEASE, VIDEO NEWS—A type of news release that accompanies a videotape. The release is actually a script divided into two columns; the left column is devoted completely to the video, or

visual, section and the right column to the audio, or sound, section of the release.

REMOTE—In radio and television, a broadcast that originates outside the studio of a station.

REVERB—In radio, the persistence of sound until it fades away, usually achieved when a cartridge machine is used.

REVERSE KICKER—*See* **HEAD HAMMER**.

RHETORICAL QUESTION—A question that cannot be answered with a straight yes or no answer; it is asked mainly for effect with no answer expected.

ROUGH—The initial manuscript of a story, normally typed double-spaced on one side of the paper only.

RULE OF THIRDS—A photographic concept where the photographer mentally divides the frame into thirds (both vertically and horizontally) and places the point of interest at one of the four intersections of these lines.

RUN AND RETURN STORY—A type of story processed by the Fleet Home Town News Center (FHTNC) in which the appropriate Fleet Home Town News Release Form(s) (NAVSO 5724/1) is/are returned to the submitting command after processing.

SATURATION—In television, the actual strength of a particular color.

SCALE—The process of either enlarging or reducing a cropped photograph or artwork to fit in a hole on a newspaper page.

SCALE FOCUSING—In still photography, a calibrated scale that permits focusing a camera without the use of a rangefinder or ground glass.

SCANNING—In television, the process of registering all the elements of a video picture in sequence. During the scanning process, the television camera “encodes” the elements, then the television receiver is used to “decode” them in the proper order to recreate the original image.

SCANNING AREA—In television, the total area seen by the camera and reproduced on the studio monitor.

SCREEN—In television and still photography, a small metal screen placed in front of a lighting instrument to reduce its intensity.

SCRIM—In television and still photography, a piece of clear, spun glass or gauze used to diffuse and soften a light.

SECONDARY MOVEMENTS—In television, camera movements used to follow the primary movement of the talent or to change or adjust picture composition.

SHOOTING SCRIPT—A written plan for a picture story.

SHOT—(1) In still photography, a single exposure or photograph. (2) In television, a single scene; the continuous action occurring from the time the camera is turned on to the time it is turned off.

SHUTTER RELEASE—A device used to actuate a camera shutter.

SHUTTER SPEED—In still photography, the length of time that light is permitted to act upon film or paper as a result of the shutter having opened and closed.

SIC—A term used to show the reader that quoted matter contains an error, but is reproduced precisely. It is normally used within brackets: [sic].

SIDE LIGHTING—In still photography, the type of lighting effect used to bring out the texture of a subject.

SILHOUETTING—A photographic technique in which the subject is backlighted and then underexposed.

SILVER HALIDE—A light-sensitive silver salt, especially silver chloride or silver bromide, suspended in gelatin and used for coating photographic film, plates or papers.

SITE—Shipboard Information, Training and Entertainment system. Any of several closed-circuit television systems aboard authorized U.S. Navy ships and submarines.

SLIDER—*See* POT.

SOUND EFFECT—In radio and television, any noise used to enhance the spoken word.

SPEAKERS BUREAU—A list of speakers from within the command who talk on a variety of subjects. Administered by the command's public affairs office.

SPLICE—The process of joining two pieces of audiotape at a predetermined location.

SPOT ANNOUNCEMENT—In radio, a message designed to inform the listener or make him take some action. Most spot announcements are 60 seconds or less.

STET—A Latin term meaning “let it stand,” used on copy or galley proofs to indicate that a marked correction is in error and the copy should run as originally written or set.

STILL DIGITAL PHOTOGRAPHY—A photographic technique that allows a photographer to take pictures and store them electronically (digitally) in a specially manufactured camera. The pictures may then be processed using digital photographic software installed on a microcomputer.

STOP DOWN—In still photography and television, the use of a smaller aperture.

STRINGER—A person not assigned to a newspaper staff who contributes articles or provides information about an event.

STYLE—The spelling, punctuation, capitalization, abbreviation and similar mechanical aspects of grammar used in preparing copy.

STYLEBOOK—A compilation of rules that apply to a particular publication, including locally written policy on spelling, abbreviations, capitalization and several other areas.

SWITCHER, AUDIO—In television, a member of the studio production team who is responsible for operating the television audio-mixing console.

SWITCHER, VIDEO—In television, a member of the studio production team who is responsible for operating the video-mixing console and special effects bank.

T/W SWITCH—In television, the zoom servo lever that regulates the operation of a zoom lens (T for telephoto and W for wide angle).

TALENT—In television, the performer being photographed, such as the newscaster.

TALLY LIGHT—In television, the light atop the camera and inside the viewfinder that is illuminated when the shot produced by the camera is on the air.

TERTIARY MOVEMENT—In television, an effect produced from a sequence of shots involving two or more cameras.

THE ASSOCIATED PRESS—A not-for-profit, cooperative news service that services newspapers, magazines and radio and television stations.

THE ASSOCIATED PRESS STYLEBOOK AND LIBEL MANUAL—The recommended guide for preparing military news.

THIRTY (30)—A direction typed on the last page of copy to indicate the end of the story.

THREE-SHOT—In television, a shot that includes three talents.

TIE-BACK—A news writing device that allows the writer to refresh the reader's memory about past events related to the story being written.

TIE-IN—A news writing device that provides supplementary information to the story being written.

TILT—In television, a secondary camera movement wherein the camera is moved vertically on a stationary pedestal.

TONE—In a photographic negative or print, the degree of lightness or darkness of the various parts of the image.

TOUR—A planned program conducted for an individual or group designed to increase public awareness and understanding of a command and its mission.

TRACK, AUDIO—In television, the portion of the videotape that contains the audio information. Virtually all videotape formats provide enough space for the recording of two audio tracks.

TRACK, CONTROL—In television, the portion of the videotape that provides the necessary foundation to control and synchronize videotape editing and playback functions

TIME CODE ADDRESS—In television, the portion of the videotape used to record cuing information for editing, such as audio or visual time/frame identification.

TRACK, VIDEO—The portion of the videotape that contains the video information. The video track takes up about three-quarters of the available space on a videotape.

TRUCK—In television, a secondary camera movement wherein the camera is moved horizontally on its pedestal.

TWO-SHOT—In television, a shot that includes two talents.

TYPEFACE—The characteristic design of type. The following are the six main classes of type: Roman, Gothic, Text, Italics, Script and Contemporary.

TYPE FAMILIES—Typefaces that are similar, though not exactly alike in design.

TYPE FONT—A complete assortment of type of one size and style.

TYPE SERIES—The weight, width and angle of type. When a series carries only the family name, with no adjectives indicating variations in width, weight or angle, it may be assumed that the type is normal.

TYPOGRAPHY—The art of printing with type, involving the style, arrangement and appearance of the printed page.

UNIT COUNT SYSTEM (flit-j)—A method used to calculate the lengths of headlines by assigning numeric values to letters, numeric characters and punctuation characters.

VCR—Videocassette recorder.

VIDEO NOISE—An effect that occurs when the video signals produced by the pick-up tube of a camera are not strong enough to override the electronic interference the system usually generates.

VIDEOCASSETTE—A plastic container in which a videotape moves from a supply reel to a take-up reel.

VIDEOTAPE—A form of magnetic tape for recording pictures and sound that can be played back immediately without processing.

VIDEOTAPE, 8mm (Hi8)—A videotape format that is 8mm (approximately 1/3-inch) wide and housed in a plastic cassette.

VIDEOTAPE, 1/2-INCH BETA—A videotape format that is 1/2-inch wide and housed in a plastic cassette. The Beta format is not compatible with VHS (the other 1/2-inch videotape format).

VIDEOTAPE, 1/2-INCH VHS—A videotape format that is 1/2-inch wide and housed in a plastic cassette. The VHS format is not compatible with Beta (the other 1/2-inch videotape format).

VIDEOTAPE, 3/4-INCH U-MATIC—A videotape format that is 3/4-inch wide and housed in a plastic cassette.

VIEWFINDER—A miniature black-and-white television screen through which the camera operator views the scene being photographed.

VISUAL—In television, a device, such as a graphic or photographic technique, used to enhance a television production.

VU METER—Volume units meter. In radio and television, a device used on playback units and recorders to gauge soft and loud graduations of amplitude. Correct VU meter readings are achieved when average music and voice peaks fall between 80 and 100 percent.

WAVEFORM MONITOR—In television, a type of oscilloscope used to display a video signal graphically. Television technicians use the waveform monitor to set up and test studio television cameras.

WEBSTER'S NEW WORLD DICTIONARY, THIRD COLLEGE EDITION—The dictionary of first reference when spelling, style and usage questions are not covered in *The Associated Press Stylebook and Libel Manual*.

WELCOME ABOARD BOOKLET—A public affairs office publication that familiarizes visitors and guests with a ship or station. It normally contains a photograph of the ship (or the main gate of a shore command), CO's welcome letter, mission statement, brief history of the command and unclassified statistics and facts.

WIDE SHOT—*See* LONG SHOT.

WIDOW—A line of type at the top of a column that is less than one-half the width of the line measure of the article.

ZOOM—In television, a secondary camera movement similar to a dolly, but the camera does not move. It is done by zooming in or out with a zoom lens.

ZOOM FOCUS—In television, the process of zooming all the way in on the subject and setting the focus, then zooming out to the focal length desired. With zoom focus, everything in the depth of field will remain in focus, including the object focused on, provided the distance between it and the camera does not change.

ZOOM SERVO—In television, an electronically controlled motor that regulates the operation of a zoom lens.

APPENDIX II

REFERENCES USED TO DEVELOP THE NRTC

Chapter 1

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ASSIGNMENT 1

Textbook Assignment: “The Navy Journalist,” chapter 1, pages 1-1 through 1-4; and “Basic Newswriting,” chapter 2, pages 2-1 through 2-19.

- | | |
|--|--|
| <p>1-1. In the civilian world, a Navy Journalist’s duties most closely resemble that of what career?</p> <ol style="list-style-type: none">1. Investigative reporter2. Free press journalist3. Public information specialist4. Advertising copy writer | <p>1-5. Which of the following personal traits will most likely result in a positive impression on visitors to your command?</p> <ol style="list-style-type: none">1. Military bearing2. Appearance3. Personality4. Knowledge |
| <p>1-2. Which of the following groups of people were the first specialists to work full-time in the field of Navy Journalism during World War II?</p> <ol style="list-style-type: none">1. Nondesignated strikers2. Junior officers3. Navy Reserve personnel4. Senior officers in command | <p>1-6. Four-digit numbers assigned to special qualifications earned by Navy personnel are known by which of the following terms?</p> <ol style="list-style-type: none">1. NECs2. Specialities3. PQS4. Billets |
| <p>1-3. Which of the following individuals is responsible for informing the Navy’s publics?</p> <ol style="list-style-type: none">1. Command PAO2. PAO staff3. Type Commander4. Commanding Officer | <p>1-7. The main reason that hometown newspapers print personal items about Navy personnel is that the items contain which of the following news elements?</p> <ol style="list-style-type: none">1. Progress2. Consequence3. Proximity4. Prominence |
| <p>1-4. Which of the following traits will help you as a Navy Journalist to tell the Navy story?</p> <ol style="list-style-type: none">1. Practicing to become a better speaker2. Learning more about the Journalist rating3. Being up-to-date on current events in and out of the Navy4. Being an established typist | <p>1-8. What two basic elements of news are best illustrated by the sentence, “The Navy Department today announced that it has developed a new long-range weapon”?</p> <ol style="list-style-type: none">1. Immediacy and proximity2. Drama and immediacy3. Progress and immediacy4. Progress and proximity |

- 1-9. The story that a first class petty officer has made chief, if reported in the person's hometown newspaper, contains which of the following basic elements?
1. Consequence and immediacy
 2. Proximity and progress
 3. Immediacy and oddity
 4. Emotion and consequence
- 1-10. Today, if six men from your base were to volunteer for a dangerous diving mission, a story written about them would likely contain which of the following basic elements?
1. Immediacy, proximity and suspense
 2. Prominence, consequence and conflict
 3. Consequence, immediacy and prominence
 4. Prominence, suspense and progress
- 1-11. Elements of conflict and suspense would most likely be present in a story containing which of the following facts?
1. The rescue of a treed cat
 2. An increase in pay for all personnel
 3. A victory for a basketball team
 4. Three men who fought off sharks for four hours
- 1-12. The elements of sex and emotion would be present to the greatest degree in which of the following stories?
1. An English war bride finally reunited with her Sailor husband
 2. A basketball game with a close finish
 3. A woman who wins awards for rifle marksmanship
 4. An announcement of a single's picnic at a local military installation
- 1-13. The element of oddity is present in which of the following stories?
1. Twins who make chief on the same day
 2. Field day aboard a deployed ship
 3. The forced landing of a bomber
 4. The rescue of six men at sea
- 1-14. "The newly designated Under Secretary of the Navy, John T. McNaughton, was injured today in an airplane crash near Henderson, N.C. He was flying to Washington, where, in just three days, he would have been sworn into office." A story with the preceding lead features which of the following elements?
1. Oddity and immediacy
 2. Prominence and consequence
 3. Suspense and proximity
 4. Emotion and suspense
- 1-15. Which of the following elements must be present in every good news story?
1. Sex
 2. Human interest
 3. Immediacy
 4. Prominence of suspense
- 1-16. The term "news peg" refers to what factor(s)?
1. Who, what, when, where, why and how facts
 2. The dominant news elements of the story
 3. The length of the story
 4. The situation that the story concerns

- 1-17. Which of the following subjects is NOT spot news?
1. A collision of a bus in which several members of the Navy football team were injured
 2. A transcontinental record set by a Navy jet aircraft
 3. An explosion that caused serious damage and loss of life aboard an aircraft carrier at sea
 4. A christening and launching of a new nuclear submarine
- 1-18. A story about a ball to be held to raise money for the Navy Relief Society is considered what type of story?
1. Hard news
 2. Feature
 3. Sports
 4. Social
- 1-19. Off-duty military personnel volunteer to treat wounded Lebanese children. This subject is what type of story?
1. Hard news
 2. Feature
 3. Sports
 4. Social
- 1-20. A story about the new football coach at the Naval Academy in which his background and qualifications are detailed is what type of news story?
1. Hard news
 2. Feature
 3. Sports
 4. Social
- 1-21. A story about new regulations affecting military pay is what type of news story?
1. Hard news
 2. Feature
 3. Sports
 4. Social
- 1-22. A metropolitan newspaper article analyzing the consequences of a primary election is what type of news story?
1. Interpretive
 2. Financial
 3. Scientific
 4. Consumer
- 1-23. One of the major differences between the literary writing style and newspaper style is that newspaper journalists try to avoid using which of the following style elements?
1. Difficult or unfamiliar words
 2. Simple language and sentences
 3. Short sentences and paragraphs
 4. Complicated ideas as subjects
- 1-24. The writer should **NEVER** violate which of the following principles of newswriting?
1. Clarity
 2. Accuracy
 3. Emphasis
 4. Unity
- 1-25. Attribution is often necessary to assure which principle of newswriting?
1. Clarity
 2. Brevity
 3. Accuracy
 4. Unity

- 1-26. When writing a news release, what rule should you observe with regard to completeness and brevity?
1. Be brief although you may lack completeness
 2. Assure completeness, even though the article may be lengthy
 3. Be brief without sacrificing completeness
 4. Assure that the article is short, even though it may be incomplete
- 1-27. Writing a story so that facts are presented in some specific order is necessary for which of the following principles?
1. Coherence
 2. Emphasis
 3. Objectivity
 4. Unity
- 1-28. By injecting personal feelings or opinions in a straight news story, you violate which of the following rules?
1. Accuracy
 2. Objectivity
 3. Clarity
 4. Unity
- 1-29. You realize that the news story you are writing is developing into two basic topics. In this case, you should follow what recommendation?
1. Continue to combine all the facts into one story
 2. Select one of the topics and discard the facts on the other topic
 3. Eliminate the story and select another unrelated topic
 4. Write the topics as two separate news stories
- 1-30. Which of the following is NOT an axiom of newswriting?
1. Avoid gobbledygook
 2. Use well-known, often-used phrases
 3. Don't use unnecessary words
 4. Use specific words
- 1-31. Which of the following sentences contains a strong, active verb?
1. The tank slowly rolled to a stop
 2. The car wash was manned by the chiefs of the air station
 3. The ship's crew ate dinner with the admiral
 4. The men in the life raft were rescued by the destroyer
- 1-32. All **EXCEPT** which of the following are guidelines you should avoid when writing sentences?
1. Use a simple, declarative sentences
 2. Keep the word count consistent in sentences within the same paragraph
 3. Use compound sentences sparingly
 4. Use sentences that mirror normal informal conversation
- 1-33. To construct a good news or feature story, a JO must take good notes. Taking good notes includes which of the following techniques?
1. Taking notes in the same sequence as they appear in the final story
 2. Taking notes that are meaningful
 3. Writing legibly
 4. Both 2 and 3 above

- 1-34. The climax is always presented in the first paragraph in which of the following style(s)?
1. Pyramid
 2. Inverted pyramid only
 3. Literary only
 4. Inverted pyramid and literary
- 1-35. Which of the following is NOT an advantage of the inverted pyramid style?
1. Maintains reader interest by saving the climax until the end
 2. Presents facts rapidly and simply
 3. Makes page layout easier
 4. Makes writing headlines easier
- 1-36. The most important aspect of a news story is based on what news element?
1. The who
 2. The when
 3. The where
 4. The news peg
- 1-37. What is the purpose of a summary lead?
1. To present the essential facts quickly
 2. To give details to satisfy reader interest
 3. To make it possible for an editor to cut the story at any point
 4. To give the story coherence
- 1-38. The rule for including the five W's and H in the lead of a news story is correctly stated in which of the following principles?
1. Only the most important of these questions should be answered in a summary lead
 2. Only when and where questions are always answered in the lead
 3. Either four or five elements of the story should be included in the lead
 4. All six questions should be answered in the lead
- 1-39. To write a good lead, you should be limited to which of the following guidelines?
1. Only one paragraph
 2. Fewer than 30 words
 3. Not more than two sentences
 4. The fewest possible words, sentences, and paragraphs required to accomplish the objective
- 1-40. Which of the following leads answers all of the five W's?
1. Thirty minutes before he was to retire from the Navy, Clifford W. Royer, 45, a chief yeoman, was killed in an automobile accident today
 2. The Navy's highest award for bravery in action—the Navy Cross—was pinned on Seaman Emil James at a ceremony aboard the USS Greene
 3. A Navy jet pilot was killed today when his fighter crashed while on a training flight over a heavily wooded area near Glens Falls, N.Y.
 4. A veteran Navy diver, Clifford A. Patterson, 35, a Chief Machinist's Mate, lost his life yesterday in experiments to make underwater work safer

**IN ANSWERING QUESTIONS 1-41
THROUGH 1-45, SELECT FROM THE
FOLLOWING LIST THE TYPE OF NOVELTY
LEAD THAT FITS THE DESCRIPTION USED
AS THE QUESTION.**

- A. Contrast
- B. Picture
- C. Freak
- D. Punch
- E. Question
- F. Background
- G. Quotation
- H. Direct Address

1-41. Uses a play on words or comparisons.

- 1. A
- 2. B
- 3. C
- 4. D

1-42. Attempts to arouse the reader's curiosity.

- 1. A
- 2. C
- 3. D
- 4. E

1-43. Tries to make the reader part of the story.

- 1. B
- 2. F
- 3. G
- 4. H

1-44. Uses colorful phrases to create an image of the surroundings or setting of a news event.

- 1. A
- 2. B
- 3. C
- 4. F

1-45. Describes the person(s) involved in a story.

- 1. A
- 2. B
- 3. E
- 4. F

1-46. Which of the following types of leads is NOT a novelty lead?

- 1. Picture
- 2. Contrast
- 3. Summary
- 4. Direct address

1-47. Which of the following is a contrast lead?

- 1. From debutante to grease monkey is the goal of Navy woman Doris Barnes
- 2. Dazed but gratefully alive, EM3 Donald Clark struggled to his feet, rubbed his arms, and admitted that 440 volts are a lot of volts
- 3. Killer Cain strikes again
- 4. Who would have ever thought that FT2 George Regan was timid

1-48. Feature leads are sometimes used for which of the following purposes?

- 1. To attempt to answer all the five W's and the H
- 2. To add variety to a newspaper story
- 3. To give a strong narrative element

1-49. When should you identify the subject of a news story by more than just a name?

- 1. When the person is not well known to the readers
- 2. When the person is a familiar public official
- 3. When the action of the story is more important than the person involved
- 4. When the person is one of a group of persons involved in the action

- 1-50. Under what circumstances should the authority for information be given in the lead?
1. Whenever the authority is widely known
 2. When the source of information is clearly implied
 3. When it is necessary to credit the Navy with a story that deals with Navy ships and personnel
 4. When it is needed to overcome skepticism or to give support or emphasis to the information
- 1-51. When writing a lead, you should abide by all **EXCEPT** which of the following guidelines?
1. Answer all of the five W's and H
 2. Present a summary of the story
 3. Stress the news peg
 4. Get the reader interested in reading the rest of the story
- 1-52. The bridge can be used for which of the following purpose(s)?
1. To update the reader on events related to the story
 2. To elaborate, explain or provide authority to facts in the lead
 3. To provide a smooth transition from the lead to the body by bringing in secondary facts or filling in identification for the lead
 4. All of the above
- 1-53. When writing a second, or follow-up story about a news event, you may wish to remind the reader of the previously reported facts. You should do this with which of the following devices?
1. A background lead
 2. A tie-in
 3. A tie-back
 4. A bridge
- 1-54. To inform a reader about other events taking place that supplement the story you are writing, you should use which of the following devices?
1. A background lead
 2. A tie-in
 3. A tie-back
 4. A bridge
- 1-55. You should present the facts and details of a news story in what sequence?
1. In chronological order
 2. Ranging from greater to lesser importance
 3. With the most interesting details presented last
 4. With the story built to a climax

ASSIGNMENT 2

Textbook Assignment: “Writing the Feature, Speech, Sports and Accident Stories,” pages 3-1 through 3-23.

- 2-1. What type of story especially requires creative writing skills?
1. A straight news story
 2. An accident story
 3. A feature story
 4. A speech story
- 2-2. A feature story may be effectively substituted for a straight news release under which of the following circumstances?
1. When the time factor makes a straight news story non-competitive
 2. When the human interest of the story exceeds its value as straight news
 3. When the facts of a story depend on the prominence of an event or a personality profile
 4. Each of the above
- 2-3. All **EXCEPT** which of the following elements can turn a commonplace hobby into good material for a feature story?
1. The prominence of the individual
 2. A new development in the hobby
 3. An unusual or odd angle about the hobby
 4. A related story appeared in print
- 2-4. What is the **MOST** critical consideration for the feature story writer?
1. Word choice
 2. Consideration of the target audience
 3. Whether to write a straight news or feature story
 4. Permission to write the article
- 2-5. Navy Journalists often place feature stories in civilian newspapers to emphasize which of the following topics?
1. The importance of the event
 2. New equipment
 3. Individual Navy members
 4. The background of the event
- 2-6. A fact taken from the newspaper may be developed into a good feature article if it is written to reflect what interest?
1. Local
 2. National
 3. International
 4. Internal
- 2-7. Feature stories normally highlight what type of leads?
1. Summary only
 2. Novelty only
 3. Summary or novelty
 4. Any standard news or magazine style
- 2-8. What are the basic parts of a feature story?
1. Body, bridge and summary
 2. Lead, body and ending
 3. Lead, bridge and body
 4. Bridge, body and ending

2-9. Which of the following characteristics applies to a well-written lead for a feature story?

1. It contains either a question or a quotation
2. It always consists of more than one paragraph
3. It always corresponds to the prominence and proximity of the subject
4. It is appropriate for the subject and immediately arouses the reader's interest

2-10. To develop a good feature story on equipment, the journalist should use what technique?

1. Stress the ease of maintenance of the equipment
2. Emphasize the complexity of the equipment
3. Create human interest by stressing the people involved with the equipment
4. Stress the man-hours saved by the use of the equipment

2-11. In a feature story, quotations should be used for what reason?

1. To provide variety and add authenticity
2. To add color
3. To assist writing about controversial subjects

2-12. Which of the following suggestions for writing the body of feature stories will NOT increase reader interest?

1. Using a variety of sentence lengths
2. Comparing scientific concepts and technology to objects with which the reader is familiar
3. Translating technical terms into lay language
4. Avoiding figures of speech, such as comparisons and analogies

2-13. For writing feature stories, you should use which of the following literary techniques when dealing with numbers?

1. Avoid numbers if possible
2. Use comparisons to make the numbers meaningful
3. Use generalizations instead of exact numbers
4. Include exact numbers whenever possible

2-14. Which of the following training materials is best for aspiring feature writers?

1. Books and training manuals
2. Published feature material from other writers
3. Their own stories and experiences

2-15. The conclusion plays what part in the structure of a good feature story?

1. It can be readily cut from the story
2. It sums up or highlights the story
3. It restates the material in the lead
4. It includes the bridge

2-16. The personality feature differs from other feature stories in what respect?

1. It usually pertains to only one person
2. It arouses the reader's interest
3. It usually requires keen, inquisitive faculty for observation
4. It requires the imagination and curiosity of the writer

2-17. To write a personality feature, you may use all **EXCEPT** which of the following techniques?

1. Including the opinions of others about the subject
2. Telling of mannerisms and actions that are characteristic of the subject
3. Describing the subject's personal appearance, facial expressions and dress
4. Including personal descriptions that might be unflattering

2-18. To conduct research on a person for a personality feature, you may use which of the following sources?

1. The person themselves
2. Printed background material
3. Others who know the subject intimately
4. All of the above

2-19. In structure, a story written about a speech most closely resembles what other story?

1. A personality feature
2. An accident story
3. A straight news story
4. A feature story

2-20. Which of the five W's and H are usually included in the lead of the speech story?

1. Why and how
2. When and why
3. Who and what
4. How and what

2-21. When writing a speech story, you should use all **EXCEPT** which of the following techniques?

1. Always include a direct quote in the lead
2. Use brief, direct quotes and scatter them throughout the story
3. When paraphrasing, be careful not to distort the speaker's meaning
4. Include "when" and "where" in the lead

2-22. Which of the following sentences is NOT correctly punctuated with quotation marks?

1. The rescued man simply said, "wow"!
2. "Before the Vietnam Campaign," the speaker declared, "a longer training period was allowed."
3. He inquired, "Where is the action?"
4. "Enclose quoted material in quotation marks," the teacher stated.

2-23. What is an ellipsis?

1. A method of indicating that words have been deleted from a direct quotation
2. A quotation within a quotation
3. A paraphrase of a quotation
4. A substitute for a parenthesis

- 2-24. When a writer ends a quote in the middle of a speaker's sentence, what end punctuation should be used?
1. A period and quotation marks
 2. Three dots only
 3. Three dots and quotation marks
 4. Four dots and quotation marks
- 2-25. At what point in the speech story should the writer identify the speaker?
1. In the title
 2. In the first paragraph only
 3. In either the first or second paragraph
 4. In the summary
- 2-26. Which of the following elements of a speaker's identity need NOT be included in a speech story?
1. Full name
 2. Full title
 3. Hometown
 4. Job title
- 2-27. What is the purpose of the quote-summary method of reporting speeches?
1. To give the reader the feeling of the speech
 2. To make sure all pertinent information is included
 3. To standardize reporting throughout the industry
 4. To minimize the number of times attribution is necessary
- 2-28. Where is the natural placement for attribution of a direct quote?
1. At the beginning of the quote
 2. In the middle of the quote
 3. At the end of the sentence
 4. Anywhere within the same paragraph as the quote
- 2-29. What is the best way to express attribution in a speech story?
1. By using the verb "said" alone in most quotes
 2. By using a variety of vivid verbs
 3. By adding colorful details about the speaker's gestures and tone of voice
 4. By using "said" plus appropriate descriptive verbs
- 2-30. How may the journalist add more color to a speech story?
1. By using vivid words to describe how the speaker talked
 2. By occasionally describing the speaker's gestures or hand movements
 3. By using vivid verbs to describe the speaker's emotions
 4. By using a variety of adjectives and adverbs to paraphrase the quotes
- 2-31. Which of the following is NOT a key idea for speech writing?
1. Use ellipses to handle long quotes
 2. Place the most important fact in the lead
 3. Use vivid words freely to add color
 4. Attribute all information and opinions
- 2-32. What is the usual method of reporting a sports event?
1. A feature story approach
 2. A straight news story written in the inverted pyramid style
 3. In the quote-summary style
 4. With a roundup story approach

- 2-33. What is the main difference between a sports story lead and a straight news lead?
1. The sports lead emphasizes the who and how
 2. The sports lead does not necessarily include a news peg
 3. The sports lead will not be followed by a bridge
 4. The sports lead makes no attempt to answer the five W's and H
- 2-34. Where should the game's score be included in a sports story with a summary lead?
1. In the lead only
 2. In the lead and bridge only
 3. Throughout the story, as needed
 4. In the lead, only if not used in the headline
- 2-35. What type of lead should you use to maintain reader interest when the reader already knows the outcome of a sports event?
1. Background information
 2. Summary
 3. Novelty
 4. Punch
- 2-36. What information should be included in the bridge of a sports story?
1. Who won and the effect of the win on the standings
 2. When and where the event took place
 3. Who won the event and under what circumstances
 4. Where and how the win was accomplished
- 2-37. In the body of a sports story, events should be presented in what order?
1. Chronologically, skipping quiet periods
 2. By starting with the most important play
 3. From finish to start
 4. Chronologically, covering every period
- 2-38. When the key play is an error, the journalist should take what action?
1. Cover the play and fully identify the player
 2. Cover the play without identifying the player
 3. Cover the play and identify the player only if the play was critical to the outcome
 4. Don't mention the play
- 2-39. To a journalist who wants to write colorful sports feature stories, which of the following tips will be helpful?
1. Feature statistical comparisons
 2. Develop a set writing style
 3. Use good sports terms and colorful verbs
 4. Acquire personal information about sports stars
- 2-40. Which of the following terminology should be considered editorializing in sports writing?
1. Outstanding play
 2. Sloppy defense
 3. Referee's bad call
 4. Lucky break

2-41. Which of the following phrases is proper sports terminology?

1. He slammed a free throw
2. The game was won by Boston
3. She lobbed a grounder past the shortstop
4. The women's soccer team clawed their way to victory last night.

2-42. Which of the following phrases is written correctly?

1. The Mole Chickens swept their division
2. NAS Pensacola lost their last game
3. The Battlin' Lemmings have two games left on its schedule
4. The Miami Dolphins signed its new head coach today

2-43. Which of the following story subjects should be written in sports style and normally appear on the sports page?

1. Hunting and fishing
2. Darts
3. Aerobics
4. All of the above

2-44. What journalistic device should you use to help cover a wider variety of sports?

1. Write a sidebar for each main story
2. Employ stringers
3. Spend a lot of time at the gym
4. Attend the games yourself

IN ANSWERING QUESTIONS 2-45 THROUGH 2-50, SELECT FROM THE LIST BELOW THE SOURCE OF INFORMATION A JO SHOULD CONSULT FOR THE PURPOSE IN THE QUESTION. RESPONSES MAY BE USED MORE THAN ONCE.

- A. MWR
- B. Team members
- C. Official scorebooks
- D. Coaches or managers
- E. Officials and scorekeepers

2-45. To get a player's reaction to a disputed decision or call.

1. A
2. B
3. C
4. D

2-46. To learn when a canceled game will be rescheduled.

1. A
2. B
3. C
4. D

2-47. To find out what the scoring record was for any single game in a season.

1. A
2. B
3. D
4. E

2-48. To get a team captain's opinion on the opposition's defense.

1. A
2. B
3. D
4. E

- 2-49. To learn whether a star softball player will be able to play in the next game.
1. B
 2. C
 3. D
 4. E
- 2-50. To get an explanation of a game's rules.
1. A
 2. B
 3. D
 4. E
- 2-51. Accident stories must especially be written in which of the following ways?
1. Accurately
 2. With colorful detail
 3. In a sympathetic manner
 4. In chronological order
- 2-52. Which of the following sequences forms the structure of an accident story?
1. Lead, body and ending
 2. Casualty list, body and ending
 3. Lead, bridge and body
 4. Lead, casualty list and body
- 2-53. Which of the following elements is usually most important to the reader in an accident story?
1. What
 2. Who
 3. How
 4. When
- 2-54. The standard accident story structure calls for listing the names of casualties, if there are less than five, in what location?
1. The bridge
 2. The lead
 3. The body
 4. At the end of the story
- 2-55. The standard accident story structure calls for listing the names of casualties, if there are more than ten, in what location?
1. The bridge
 2. The lead
 3. The body
 4. At the end of the story
- 2-56. The casualty structure of an accident story serves all **EXCEPT** which of the following purposes?
1. Aids the reader in rapidly identifying the dead and injured
 2. Aids in composing the newspaper page
 3. Aids the copy editing
 4. Aids the reader in finding the facts of the accident
- 2-57. When an accident story is released before the victims have been identified or before the next of kin have been notified, how should the writer handle this situation?
1. By stating in the space ordinarily used for names, "Names of casualties are being withheld pending notification of next of kin."
 2. By stating in the lead that names will be released later
 3. By directing the news media to hold the story until names are supplied
 4. By writing in the lead, "Names of casualties are being withheld pending notification of next of kin."
- 2-58. For the sake of clarity, what word should a writer substitute for the word "trauma"?
1. Abrasions
 2. Contusions
 3. Shock
 4. Bruises

2-59. When you write an account of a death, which of the following expressions is acceptable?

1. Went to his final reward
2. Golden years
3. Funeral services
4. Interred

2-60. You can usually get the basic information about an accident involving a Navy member from which of the following sources?

1. The witnesses of the accident
2. The casualty's division officer
3. The personnel office "casualty report"
4. The casualty's commanding officer

ASSIGNMENT 3

Textbook Assignment: “Writing for Magazines,” pages 4-1 through 4-16.

3-1. Which of the following news media tends to be overlooked by Navy Journalists?

1. Newspapers
2. Magazines
3. Radio
4. Television

3-2. Magazines are especially valuable for telling the Navy’s story because they have which of the following characteristics?

1. Magazines offer a ready market for any subject considered
2. Magazines are published specifically for any audience segmentation one might wish to reach
3. Magazines provide a market for stories of too narrow an interest to be published by newspapers
4. All of the above

3-3. Which of the four classes of magazines is the largest?

1. Consumer magazines
2. Business journals
3. Company publications
4. Service-oriented periodicals

3-4. What are the two types of consumer magazines?

1. Employee and sales
2. Internal and commercial enterprise
3. General interest and special interest
4. Trade and technical journals

3-5. Which of the following characteristics serve to distinguish one magazine from another?

1. Style and primary subject matter
2. Competence of the writers and lengths of articles
3. Number of subjects covered and the amount of information presented

IN ANSWERING QUESTIONS 3-6 THROUGH 3-15, SELECT FROM THE LIST BELOW THE CATEGORY WHICH BEST DESCRIBES THE TYPE OF MAGAZINE GIVEN AS THE QUESTION. RESPONSES MAY BE USED MORE THAN ONCE.

- A. General
- B. Special
- C. Professional or trade
- D. Commercial enterprise

3-6. *Cashflow.*

1. A
2. B
3. C
4. D

3-7. *Military Living.*

1. A
2. B
3. C
4. D

3-8. *Time.*

1. A
2. B
3. C
4. D

3-9. *Sports Illustrated.*

1. A
2. B
3. C
4. D

3-10. *Golf Digest.*

1. A
2. B
3. C
4. D

3-11. *Reader's Digest.*

1. A
2. B
3. C
4. D

3-12. *Denver Living.*

1. A
2. B
3. C
4. D

3-13. *Motor Magazine.*

1. A
2. B
3. C
4. D

3-14. *Editor and Publisher.*

1. A
2. B
3. C
4. D

3-15. *Life.*

1. A
2. B
3. C
4. D

3-16. Magazines directed at a specific group of readers are in which of the following categories?

1. General interest publications
2. Special interest publications
3. Customer magazines
4. Professional journals

3-17. Magazines aimed at skilled laborers in a particular field and addressing the work performed in that field is listed with which of the following publications?

1. Technical journals
2. Trade journals
3. Professional journals
4. Special interest publications

3-18. Publications produced by a particular business for its employees, its customers or its stockholders are known as what category of publication?

1. Business journals
2. Trade journals
3. House organs
4. Service-oriented magazines

3-19. A company publication designed to inspire and motivate the workers of a business is known as what category of publication?

1. Trade journal
2. Business journal
3. Employee magazine
4. Sales magazine

- 3-20. What type of house organ is designed to maintain an open channel of communication between a manufacturer and an independent dealer?
1. Sales magazine
 2. Dealer magazine
 3. Stockholder magazine
 4. Technical service magazine
- 3-21. Service-oriented magazines may be compared with publications in which of the following categories?
1. General interest
 2. Special interest
 3. Sales magazines
 4. House organs
- 3-22. Service-oriented magazines include which of the following categories?
1. Internal magazines
 2. Trade journals
 3. Technical service magazines
 4. Business journals
- 3-23. Internal magazines include which of the following publications?
1. Magazines produced by individual naval commands
 2. Magazines produced by the Department of Defense
 3. Magazines produced by the Department of the Navy
 4. All of the above
- 3-24. *All Hands* differs from *Sea Power* in which of the following ways?
1. Its primary audience is Navy personnel
 2. Its method of financing
 3. Its availability to civilians
 4. It carries articles by Navy Journalists
- 3-25. Commercial enterprise magazines are categorized with which of the following types of publications?
1. Trade journals
 2. General interest publications
 3. Special interest publications
 4. Employee magazines
- 3-26. Which of the following terms identifies a story before it is published by a magazine?
1. An article
 2. A feature
 3. A creation
 4. A manuscript
- 3-27. What factor contributes the most to creative writing?
1. Deadline pressure
 2. Ample time
 3. Subject matter
 4. Market variety
- 3-28. What major difference exists between a magazine article and a newspaper article?
1. Length
 2. Subject matter
 3. Style
 4. Punctuation rules
- 3-29. The adoption of magazine traits by newspapers was influenced most by what factor?
1. Magazine competition
 2. Television competition
 3. Educational advances of the public
 4. Increased creative writing ability of newspaper journalists

3-30. Which of the following magazine style elements are now used by commercial newspapers?

1. Feature stories
2. Glossy paper stock
3. Looser deadlines
4. Color pages

3-31. Most major newspapers deal with the challenge from the electronic media in reporting timely news events in which of the following ways?

1. They ignore, for the most part, those events reported live by radio and television
2. They offer in-depth coverage (background information and lengthy analysis) of those events
3. They report those news events using the upright pyramid style

3-32. When you write a magazine article, you should use which of the following formats?

1. Inverted pyramid
2. Upright pyramid
3. The one that best suits the story

IN ANSWERING QUESTIONS 3-33 THROUGH 3-38, SELECT FROM THE LIST BELOW THE TYPE OF MAGAZINE ARTICLE DESCRIBED IN THE QUESTIONS. RESPONSES MAY BE USED MORE THAN ONCE.

- A. Personality sketch
- B. Personal experience
- C. Confession
- D. Narrative

3-33. It presents an inside story of conditions or problems normally unfamiliar to the average reader.

1. A
2. B
3. C
4. D

3-34. Articles of this type often carry an “as told to...”.

1. A
2. B
3. C
4. D

3-35. Its most noticeable characteristic is its intimate, confidential tone in which the writer seems to be personally revealing a secret to the reader.

1. A
2. B
3. C
4. D

3-36. It contains sharp characterizations, vivid descriptions, dialogue, action and suspense to dramatize the facts.

1. A
2. B
3. C
4. D

3-37. It is a short biography that includes an individual’s achievements.

1. A
2. B
3. C
4. D

- 3-38. The purpose of this type of article is to portray the intimate details of the character and personality of an individual.
1. A
 2. B
 3. C
 4. D
- 3-39. Which of the following statements characterize(s) a utility article?
1. The writing is colorful and fast-paced
 2. It is short and simple and contains the element of humor or oddity
 3. It often involves handicaps or disadvantages that a person overcomes by determination and common sense
 4. It is sometimes called the “how-to-do-it” article and it usually features expository or explanatory material
- 3-40. The interview article is NOT characterized by which of the following statements?
1. It requires little advance planning
 2. It presents questions and answers that offer a subject’s views on a given topic
 3. Quite often it requires very little background information on the person being interviewed
 4. It requires thorough research on the person being interviewed
- 3-41. What is probably the most popular and best-selling type of short article for magazines?
1. The utility article
 2. The featurette
 3. The narrative
 4. The interview article
- 3-42. Which of the following types of magazine articles is intended solely to entertain the reader?
1. The utility article
 2. The narrative
 3. The featurette
 4. The personality sketch
- 3-43. Story ideas for magazine are available from which of the following sources?
1. Books and magazine articles
 2. The writer’s observation of people and events
 3. The writer’s memory of past experiences
 4. All of the above
- 3-44. You should begin all magazine articles with which of the following steps?
1. Outline the proposed article
 2. Secure a market for the story to be developed
 3. Bring the idea into sharp focus with a statement of its purpose
 4. Thoroughly research the idea to determine its feasibility
- 3-45. A writer can expect to find in the *Reader’s Guide to Periodical Literature* which of the following items of information?
1. A listing of recently published material, indexed according to subject, title and author
 2. A list of subjects not written about within a two-week period
 3. A list of subjects reserved by individual authors for future works
 4. A listing of authors, subjects and titles of works currently being written

- 3-46. What basic knowledge can a writer obtain from the *Reader's Guide to Periodical Literature*?
1. The market for a particular manuscript
 2. The freshness of an idea
 3. The market value of a particular story
 4. The names and addresses of agents whose clients are being published
- 3-47. Which of the following classes of magazines is addressed by the *Air University Library Index to Military Periodicals*?
1. Consumer magazines
 2. Business journals
 3. Company publications
 4. Service-oriented magazines
- 3-48. Most magazine articles have which of the following elements in common?
1. Style similarities
 2. Identical formats
 3. Research requirements
 4. Inverted pyramid form
- 3-49. A writer should study magazines for which of the following reasons?
1. To find out the names of authors routinely published in a magazine
 2. To learn the style in which a particular magazine's publishers want articles to be written
 3. To learn the standard punctuation rules for magazines
 4. To learn what format in which a particular article should be presented
- 3-50. Preliminary Navy research to determine consumer magazine interest in a journalist's article is conducted by which of the following parties?
1. The JO's public affairs officer
 2. The writer of the article
 3. A regional Navy Office of Information (NAVINFO)
 4. The Magazine Writer Service in CHINFO
- 3-51. Manuscripts intended for internal magazines should be submitted to which of the following offices?
1. The NAVINFO in your region
 2. The Public Affairs Center
 3. The editor of the internal magazine in question
 4. CHINFO
- 3-52. An outline serves which of the following functions for a magazine writer?
1. It helps in the evaluation of information
 2. It aids in the organization of information
 3. It makes writing an article easier and faster
 4. All of the above
- 3-53. Which of the following listings shows the correct order of the basic magazine article outline?
1. Purpose, plan of development, sources, market analysis and markets
 2. Market analysis, markets, sources, purpose and plan of development
 3. Purpose, market analysis, markets, sources and plan of development
 4. Purpose, market analysis, plan of development, sources and markets

3-54. For a Navy Journalist's official work, steps 2 and 3 of the basic magazine article outline are performed by which of the following parties?

1. CHINFO
2. District NAVINFO
3. Area Public Affairs Center
4. Local public affairs office

3-55. What part of the basic magazine article outline contains the list of pertinent facts, subtitles and anecdotes intended for the article?

1. Purpose
2. Markets
3. Sources
4. Plan of development

3-56. What determines the newsworthiness of magazine articles?

1. Style
2. Format
3. The presence and intensity of the news elements
4. The application of the ABCs of journalism

3-57. Which of the following literary devices are used to give "flesh and blood" to most magazine articles?

1. Bromides
2. Allegories
3. Anecdotes
4. Alliterations

ASSIGNMENT 4

Textbook Assignment: “Writing for Magazines” (continued), pages 4-12 to 4-16, “Advanced Stories, Follow-ups and Rewrites,” chapter 5, pages 5-1 through 5-7; and “Copy Editing,” chapter 6, pages 6-1 to 6-9.

IN ANSWERING QUESTIONS 4-1 THROUGH 4-11, SELECT FROM THE LIST BELOW THE MAGAZINE ARTICLE\COMPONENT IDENTIFIED IN THE QUESTION. RESPONSES MAY BE USED MORE THAN ONCE.

- A. Title
- B. Lead
- C. Body
- D. Conclusion

4-1. A short, terse statement, designed to attract the attention or arouse the curiosity of readers.

- 1. A
- 2. B
- 3. C
- 4. D

4-2. A series of sentences or paragraphs intended to entice the reader.

- 1. A
- 2. B
- 3. C
- 4. D

4-3. The component that neatly and succinctly ties together all the threads of the article.

- 1. A
- 2. B
- 3. C
- 4. D

4-4. Contains anecdotes, specific examples and hypothetical situations to illustrate important facts.

- 1. A
- 2. B
- 3. C
- 4. D

4-5. The most important part of a magazine article.

- 1. A
- 2. B
- 3. C
- 4. D

4-6. Intended to generate enough interest to cause the reader to read the entire article.

- 1. A
- 2. B
- 3. C
- 4. D

4-7. Conveys the tone and spirit of the material featured in the article.

- 1. A
- 2. B
- 3. C
- 4. D

- 4-8. May consist of as little as one paragraph in length, or may run as much as 10 percent of the entire article.
1. A
 2. B
 3. C
 4. D
- 4-9. Contains a hint of the spirit and movement of the article.
1. A
 2. B
 3. C
 4. D
- 4-10. Sometimes employs an anecdote that typifies the main points presented in another component of the article.
1. A
 2. B
 3. C
 4. D
- 4-11. Indicates the central idea to be conveyed in the article.
1. A
 2. B
 3. C
 4. D
- 4-12. A Navy Journalist writing magazine articles should be concerned with the possibility of violating laws in which of the following areas?
1. Copyright
 2. Libel
 3. Privacy invasion
 4. All of the above
- 4-13. Permission for Navy Journalists to write for non-Navy magazines is contained in which of the following publications?
1. *DON Public Affairs Policy and Regulations*
 2. *The Associated Press Stylebook and Libel Manual*
 3. *Navy Publications and Printing Regulations*
 4. *Availability to the Public of Department of the Navy Records*
- 4-14. Official and personal manuscripts written by Navy Journalists for non-Navy publications must be reviewed and cleared when they deal with which of the following subjects?
1. Families of naval personnel
 2. Military policy
 3. Navy history
 4. Any subject, since all manuscripts must be reviewed and cleared by CHINFO
- 4-15. Manuscripts requiring review and clearance must be forwarded to which of the following offices?
1. CNO
 2. SECNAV
 3. CHINFO
 4. District NAVINFO
- 4-16. Published copies of magazine articles should be sent to which of the following offices for inclusion in Navy Department files?
1. CNO
 2. SECNAV
 3. CHINFO
 4. ASD(PA)

- 4-17. When a manuscript requires review and clearance, how many copies of the typewritten, double-spaced material should be forwarded to the reviewer?
1. One
 2. Two
 3. Three
 4. Four
- 4-18. When may a Navy Journalist write for commercial publications for pay?
1. When the subject of the Journalist's article is in no way related to the Navy
 2. When the writing of the article is officially assigned by the Journalist's supervisor
 3. When the research and writing is done on the Journalist's off-duty time, without the use of Navy facilities, equipment or personnel
- 4-19. Navy policy usually prevents which of the following desires of commercial magazine publishers from being served by Navy Journalists?
1. Timely copy
 2. Preferred style
 3. Exclusive material
 4. All of the above
- 4-20. What type of story is normally written for created news only?
1. Advance
 2. Spot news
 3. Follow-up
 4. Feature
- 4-21. The first release in a series of advance news stories should contain which of the following elements?
1. All of the known facts concerning a scheduled event
 2. A few publicity puffs to whet the public's appetite
 3. An announcement that information on an upcoming event will be provided in the near future
 4. Legitimate news pertaining to the event
- 4-22. The second and subsequent releases in a series of advance news stories should contain which of the following elements?
1. All of the known facts concerning a scheduled event
 2. A restatement of the same information in the first release
 3. Updated information and additional facts
 4. Only the basic nature of the event and a telephone number to call for detailed information

4-23. In reporting new developments or updates of a previously released spot news story, you should use what method?

1. Exclusives
2. Follow-ups
3. News pegs
4. Rewrites

4-24. When writing a follow-up story, you need only consider those readers who have read the original story.

1. True
2. False

4-25. A follow-up story is written for which of the following stories?

1. Spot news
2. Advance release
3. Feature
4. All of the above

4-26. The elements of the follow-up story should be written in what order?

1. Lead, body and tie-back
2. Tie-back, body and lead
3. Tie-back, lead and body
4. Lead, tie-back and body

4-27. What element of the follow-up satisfies the requirements of readers who may or may not have read the original story?

1. The body
2. The lead
3. The tie-back
4. Conclusion

4-28. The body of a follow-up story need not be written in inverted pyramid style.

1. True
2. False

IN ANSWERING QUESTIONS 4-29 THROUGH 4-34, SELECT FROM THE LIST BELOW THE REASON WHY A JOURNALIST WOULD REWRITE THE MODIFICATION GIVEN AS THE QUESTION. RESPONSES MAY BE USED MORE THAN ONCE.

- A. Improving copy
- B. Shifting emphasis
- C. Updating
- D. Transforming informal reports

4-29. To suit the needs of different media.

1. A
2. B
3. C
4. D

4-30. To include a fresh angle.

1. A
2. B
3. C
4. D

4-31. Finding the proper lead and placing it where it belongs.

1. A
2. B
3. C
4. D

4-32. Converting a feature story to hard news.

1. A
2. B
3. C
4. D

- 4-33. Adding background information from the files to information phoned in by journalists in the field to complete a story.
1. A
 2. B
 3. C
 4. D
- 4-34. To report sports scores phoned in by MWR.
1. A
 2. B
 3. C
 4. D
- 4-35. Providing a fresh angle to a story that has been released previously is known as slanting the copy.
1. True
 2. False
- 4-36. For use by the media in your area, you should refine and rewrite a news release from the Navy Department for what reason?
1. To update the material
 2. To convert the feature story into a news story
 3. To localize the general release
 4. To change the emphasis
- 4-37. What type of lead should be used when two stories are rewritten as one?
1. Novelty
 2. Hard news
 3. Summary
 4. Combination
- 4-38. What is the best way for you to obtain a high percentage of coverage for one special story?
1. Distribute copies to all the media you service
 2. Contact various news media directly
 3. Revamp the structure of the story several ways
 4. Rewrite the same story, stressing different points to meet the needs of the media you service
- 4-39. What is the meaning of the term “copy editing”?
1. Composing and publishing the writer’s copy
 2. Writing editorials from copy
 3. Catching and correcting errors before they are printed and distributed
 4. Catching errors in a printed publication for the purpose of correcting them in a revision
- 4-40. Choose from the following responses the one that best indicates the copy editor’s duty.
1. To be on the alert for violations of style
 2. To assign reporters to their areas
 3. To number all galleys
 4. To make sure that the editor okays all copy
- 4-41. Choose from the following responses the one that best indicates the copy editor’s duty.
1. To make sure that reporters write their own headlines
 2. To indicate the kind and size of type to be used
 3. To review all copy for legibility
 4. To make sure that all material conforms to the style sheet of the paper

4-42. Choose from the following responses the one that best indicates the copy editor's duty.

1. To make all reporters revise their copy
2. To indicate the style of type to be used
3. To see that all facts are presented accurately
4. To make all reporters meet their deadlines

4-43. What function of copy editing is of prime importance to the Navy copy editor?

1. Checking for grammar and punctuation
2. Reviewing for style and accuracy
3. Restoring objectivity
4. Checking for possible security violations

4-44. The procedures of a good copy editor include reading a story to (a) correct errors and make additions or deletions, (b) grasp its meaning and note the arrangement and (c) make sure the story reads smoothly. The copy editor should follow these procedures in what sequence?

1. b, a, c
2. c, b, a
3. b, c, a
4. a, b, c

4-45. A copy editor who finds an omission of essential details or too many mistakes in a story should take what action?

1. Give the story to a second editor for revision
2. Return the story to the originating JO for rewriting
3. Read the story three times to make sure all errors are noticed and corrected
4. Rewrite the story

4-46. What is a "rough story"?

1. A new story that has been corrected by a copy editor
2. The original draft of a story
3. A story submitted by a reporter in the field over a telephone
4. A story returned from the editor to the originator for rewriting

4-47. Before submitting a story to the editor in a large office, you should type (at the top of the story) a slug line and what other information?

1. A headline
2. The date
3. Your name
4. Draft number

4-48. Which of the following practices is NOT a firm rule of copy editing?

1. Using a soft, black lead pencil
2. Writing legibly and clearly
3. Adding a paragraph in longhand in the margin
4. Placing copy editing symbols above or within the lines containing the errors

4-49. Editorializing means including within a news story which of the following elements?

1. Opinions
2. Contradictions
3. Personalities
4. Quotations

- 4-50. When, if ever, should writers refer to themselves in a news story?
1. When the writer is praising the subject of the story
 2. When the writer is censuring the actions of a person in the story
 3. When the writer is considered to be an authority on the subject being reported
 4. Never

IN ANSWERING QUESTIONS 4-51 THROUGH 4-55, ASSUME THAT THE STATEMENTS ARE PORTIONS OF NEWS COPY. SELECT THE RESPONSE THAT INDICATES THE COPY EDITING GUIDELINE THAT IS BEING VIOLATED IN EACH STATEMENT USED AS A QUESTION.

- 4-51. Harrison's exemplary behavior, dedication to the Navy and performance of duties were recognized during his recent retirement ceremony. Harrison retired as a Personnelman Third Class after 20 years of service.

1. Style
2. Editorializing
3. Contradiction
4. Incompleteness

- 4-52. An outstanding performance is planned at the sports arena tonight.

1. Style
2. Editorializing
3. Contradiction
4. Incompleteness

- 4-53. Eight beautiful young ladies from the Navy community participated in the city's annual pageant.

1. Style
2. Opinion
3. Contradiction
4. Incompleteness

- 4-54. Navy pilot, James Cramer of Seattle, Wash., was killed in an air crash near Mobile, Ala. (Note: no further identification).

1. Style
2. Editorializing
3. Contradiction
4. Incompleteness

- 4-55. The cafeteria is located at 3849 Pennsylvania Avenue, which is a block east of the intersection of Penn. Ave. and Alabama Ave.

1. Style
2. Editorializing
3. Contradiction
4. Incompleteness

- 4-56. How should the writer indicate the proper spelling of an unusual name in the rough?

1. Draw a box around it
2. Put it in parentheses
3. Put quote marks around it
4. Underline it

- 4-57. When editing a story containing numbers, which of the following procedures should you follow?

1. Always apply logic to the statistics of the story
2. Have questionable numbers verified by the writer
3. Both 1 and 2 above
4. Eliminate numbers as much as possible

- 4-58. Which of the following numbers is NOT acceptable in news releases?

1. Jones, 27,
2. 1/2 inch
3. The team lost ten games this season
4. There are five men on the team

4-59. What is the most common reason every copy editor needs a printed dictionary?

1. To check the writer's style
2. To check syllabication used by the writer
3. To check the spelling of troublesome words
4. To check grammatical usage

ASSIGNMENT 5

Textbook Assignment: “Copy Editing” (continued), chapter 6, pages 6-9 through 6-20; and “Gathering and Disseminating Navy News,” chapter 7, pages 7-1 through 7-4.

5-1. Which of the following words is misspelled?

1. Controler
2. Planner
3. Occurrence
4. Clannish

5-2. Which of the following words is incorrectly spelled as a result of adding a suffix?

1. Changeable
2. Approveal
3. Easement
4. Traceable

5-3. Which of the following words is incorrectly spelled?

1. Lateness
2. Shapely
3. Courageous
4. Noticable

5-4. Which of the following words is incorrectly spelled as a result of adding a suffix?

1. Modification
2. Disobeying
3. Buoiancy
4. Opportunities

5-5. Which of the following words is misspelled?

1. Activities
2. Auxiliaries
3. Ceremonies
4. Phonies

5-6. How should you indicate voice inflection in writing?

1. By the proper use of spelling rules
2. By the proper use of punctuation
3. By the proper use of abbreviation rules
4. By the proper use of capitalization

5-7. Punctuation is used incorrectly in which of the following instances?

1. Frank Stallings, Sr.
2. Open the gate.
3. 6.35 miles
4. Jim is tall, but his brother is taller.

5-8. What punctuation mark separates statements of contrasts and phrases containing commas?

1. Comma
2. Colon
3. Semicolon
4. Parentheses

5-9. Which of the following sentences is improperly punctuated?

1. The envelope was addressed to Brown, Wilson & Co.
2. Among the group the question arose; Where is the building?
3. The departure time of 5:30 was too late for us.
4. The revolt occurred during the reign of Henry VIII.

5-10. Which of the following sentences contains an incorrect use of the apostrophe?

1. Isn't this the right room?
2. These are the boys' showers.
3. During the early '30s the country experienced a depression.
4. He returned the car to it's owner.

5-11. When a nickname is set apart from the name, what punctuation is used?

1. Quotation marks
2. Hyphens
3. Commas
4. Parentheses

IN ANSWERING QUESTIONS 5-12 THROUGH 5-14, SELECT FROM THE LIST BELOW THE PUNCTUATION MARK THAT SERVES THE PURPOSE GIVEN IN THE QUESTION. NOT ALL RESPONSES IN COLUMN B ARE USED.

- | | |
|----|-----|
| A. | — |
| B. | () |
| C. | - |
| D. | “ “ |

5-12. To set off letters or figures in a series.

1. A
2. B
3. C
4. D

5-13. To separate figures, compound words and abbreviations and figures.

1. A
2. B
3. C
4. D

5-14. To identify slang expressions and titles of books, plays, TV programs and poems.

1. A
2. B
3. C
4. D

5-15. Select the sentence that contains an error in capitalization.

1. The coastal area was devastated by Hurricane Cindy.
2. "The devil made me do it!"
3. The Fourth of July is on Tuesday this year.
4. Famine is prevalent in the far east.

5-16. Select the sentence that contains an error in capitalization.

1. The purple Heart is among the medals he wears.
2. Texas is the Lone Star State.
3. They are employed by the government.
4. The Cub Scouts are going to Disney World.

5-17. You are writing a story that will contain the term "Underwater Demolition Team" several times. The term is uncommon to the general public and you plan to abbreviate it. How should you show the abbreviation when you introduce the term?

1. Underwater (U) Demolition (D) Team (T)
2. UDT (Underwater Demolition Team)
3. Underwater Demolition Team (UDT)
4. Either 2 or 3 above

- 5-18. Select the phrase or sentence that contains the incorrect use of abbreviations in newswriting.
1. 10:00 o'clock CST
 2. The Washington Redskins vs. Dallas Cowboys
 3. Jones & Son
 4. 1621 Grover Rd.
- 5-19. Select the phrase or sentence that contains the incorrect use of abbreviations in newswriting.
1. Zion National Park, Utah
 2. Yellowstone National Park, Ida.
 3. We visited the U. N. Building.
 4. Clark Field is near Manila, Luzon, R.P.
- 5-20. Select the phrase or sentence that contains the incorrect use of abbreviations in newswriting.
1. Frank R. Philips, the Prof., presented the lecture.
 2. Aubrey Crossland, B.S., M.S., is the head of the department.
 3. He enlisted Sept. 18, 1940, and was discharged in September 1945.
 4. His home is in Mount Clemens, Mich.
- 5-21. Select the phrase or sentence that contains the incorrect use of abbreviations in newswriting.
1. Ft. Worth, Texas
 2. Fort Bliss, Texas
 3. 155 mm howitzer
 4. St. Louis, Mo.
- 5-22. Of the following examples, which abbreviation is NOT correct in newswriting?
1. Johnson & Johnson
 2. 513 Clemson Dr.
 3. 201 Baker St. NW
 4. St. Paul, Minn.
- 5-23. What is the civilian editor's major complaint against military journalism?
1. The incorrect use of punctuation
 2. Excessive title and organization abbreviation
 3. Articles that lack completeness
 4. Excessive contradictions in the articles
- 5-24. Which of the following professional identifications are properly written?
1. Dr. (Army Captain) Henry Philips
 2. Navy Chaplain John Murphy, Lt.
 3. Navy Nurse Lt. Helen Brown
 4. Navy Commander (Dr.) Alice Robinson
- 5-25. Which of the following references to members of the clergy is NOT a correctly written title?
1. The Rev. Betty Jones, D.D.
 2. The Rev. Smith
 3. The Rev. Dr. John A. Parker
 4. The Rev. Mr. Thomas
- IN ANSWERING QUESTIONS 5-26 THROUGH 5-29, SELECT THE CLERGYMAN TITLE LISTED BELOW THAT CORRESPONDS TO THE FAITH GIVEN IN THE QUESTION.**

- A. The Most Rev. Frank Porter
- B. Reader Harvey
- C. Pastor Floyd
- D. President Claude Jones

5-26. Latter-Day Saints.

1. A
2. B
3. C
4. D

5-27. Christian Science.

1. A
2. B
3. C
4. D

5-28. Methodist.

1. A
2. B
3. C
4. D

5-29. Mormon.

1. A
2. B
3. C
4. D

5-30. Unlike regular Navy messages, press release messages are usually transmitted in news style.

1. True
2. False

5-31. Which of the following headings properly identifies a message news release?

1. PRESS RELEASE 0945Z 15 AUG 93
2. PRESREL 0945Z 15 AUG 93
3. PRESREL 150945Z AUG 93
4. 150945Z AUG 93 PRESS RELEASE

5-32. Which of the following date times does NOT indicate local time in an area outside of Greenwich Mean Time?

1. 111300Z
2. 171545U
3. 080730R
4. 231423K

5-33. When may a news message with no special instructions to the contrary be printed?

1. Immediately
2. After an interval of 24 hours
3. When security clearance is received
4. Simultaneously with other press releases

5-34. What must you do to a message press release before releasing it to the news media?

1. Add color to the story by inserting adjectives and adverbs
2. Type the information in the proper format
3. Copy edit and duplicate it
4. Grammatically complete many of the sentences

5-35. When you copy edit a message press release, what assumption must you make?

1. That the release needs no correction in punctuation
2. That all letters are lowercase and you must indicate capital letters
3. That paragraphs have been properly indented
4. That no capitalization is necessary since the whole release is in capital letters

5-36. A run-on sentence may be defined in what way?

1. As a sentence that contains too many verbs
2. As a sentence that is too long or drawn out
3. As two or more sentences that are punctuated to appear as one sentence
4. As a single thought evolved into two or more sentences by improper punctuation

The submarine is a far more serious threat today than it was in the past, it is larger and more powerful.

Walking back to the barracks, the rain drenched him.

Morelli found it impossible to more rapidly perform his work.

Captain Watkins not only is a line officer but also a qualified jet fighter pilot.

The main purpose of these instructions are to implement Bureau policy.

5-37. How should the run-on sentence be reworded?

1. Being larger and more powerful, the submarine is a far more serious threat today than it was in the past.
2. The rain was drenching him while walking back to the barracks.
3. It was found impossible for Morelli to more rapidly perform his work.
4. Captain Watkins is a line officer not only but also a qualified jet fighter pilot.

5-38. How should the sentence that contains the dangling participle be reworded?

1. Today's submarine is a far more serious threat, it is larger and more powerful than it was in the past.
2. Walking back to the barracks, he was drenched by the rain.
3. It was impossible, Morelli found, to more rapidly perform his work.
4. Captain Watkins not only is a line officer but a qualified jet fighter pilot.

5-39. How should you reword the sentence that contains a misplaced correlative conjunction?

1. The submarine today is a far more serious threat than it was in the past, it is larger and more powerful than before.
2. In walking back to the barracks the rain drenched him.
3. The work was impossible to more rapidly perform, Morelli found.
4. Captain Watkins is not only a line officer but also a qualified jet fighter pilot.

Figure 5-A

**IN ANSWERING QUESTIONS 5-37
THROUGH 5-41, REFER TO FIGURE 5-A.**

5-40. How should you revise the sentence that contains a split infinitive?

1. Submarines are far more serious threats today, they are larger and more powerful than in the past.
2. The rain drenched him in walking back to the barracks.
3. Morelli found it impossible to perform his work more rapidly.
4. Implementation of Bureau policy is the main purpose of these instructions.

5-41. Which of the following revisions corrects the grammatical error in the last sentence?

1. The main purpose of these instructions are the implementation of Bureau policy.
2. The main purpose of these instructions is to implement Bureau policy.
3. The main purpose of these instructions are to implement Bureau policies.
4. To implement Bureau policy are the main purpose of these instructions.

5-42. Where should correlative conjunctions be positioned in a sentence?

1. Immediately following the words they connect
2. Immediately ahead of the words they connect
3. As far as possible from the words they connect
4. Between the words they connect

IN ANSWERING QUESTIONS 5-43 THROUGH 5-47, SELECT FROM THE LIST BELOW THE RESPONSE OF THE TYPE OF GRAMMATICAL ERROR DEMONSTRATED IN THE INFORMATION USED AS THE QUESTION.

- A. Misplaced correlative conjunction
- B. Misplaced prepositional phrase
- C. Misplaced relative clause
- D. Dangling participle phrase

5-43. Either complete the form in this room or in your office and return it to me.

1. A
2. B
3. C
4. D

5-44. Judge Harter asked for the submission of briefs before handing down a decision on the alleged criminal actions that were prepared by the opposing officers.

1. A
2. B
3. C
4. D

5-45. He was not only courteous to rich customers but also to poor ones.

1. A
2. B
3. C
4. D

5-46. Skidding off the road, he was hit by a truck.

1. A
2. B
3. C
4. D

5-47. With large, sharp teeth, he fought a shark.

1. A
2. B
3. C
4. D

5-48. Which of the following sentences contains a split infinitive?

1. Their main objective was to completely destroy the target
2. The purpose of the maneuver was to destroy the target completely
3. To understand thoroughly his book you must refer to the dictionary constantly
4. Either we will go to the races or to the ballgame

5-49. What is the definition of a gerund?

1. A noun or pronoun used as a verb
2. A verb or adverb used as a noun clause
3. A participle used as a verb
4. A verb used as a noun

5-50. Which of the following sentences illustrates the proper case for the subject of a gerund?

1. The captain knew of him securing the life boat.
2. The officer did not approve of you firing the pistol.
3. The division officer approved his taking special liberty.
4. They were not aware of him meeting the selection board today.

5-51. Which of the following sentences does NOT illustrate the case of pronouns introducing noun clauses?

1. Whoever wins the preliminary heat will represent us in the final race.
2. The student who makes the best poster will be honored in the assembly.
3. The commanding officer will give special recognition to whomever wins the race.
4. The duty officer wishes to know who has the watch.

IN ANSWERING QUESTIONS 5-52 THROUGH 5-58, SELECT FROM THE LIST BELOW THE PRIMARY SOURCE OF NAVY NEWS THAT WILL PROVIDE THE INFORMATION LISTED IN THE QUESTION. RESPONSES MAY BE USED MORE THAN ONCE.

- A. Future file
- B. Special contacts
- C. Messages, directives and official correspondence

5-52. Search and rescue operations.

1. A
2. B
3. C

5-53. Armed Forces Day parade.

1. A
2. B
3. C

5-54. Adoption of a beneficial suggestion and official correspondence submitted by a seaman at your command.

1. A
2. B
3. C

- 5-55. Publicity material on new ship construction.
1. A
 2. B
 3. C
- 5-56. New equipment being tested at your base.
1. A
 2. B
 3. C
- 5-57. A former child TV star, now in the Navy, reports for duty at your base.
1. A
 2. B
 3. C
- 5-58. Changes in Navy retirement benefits.
1. A
 2. B
 3. C
- 5-59. What factor should you consider when using information in naval messages, directives and official correspondence as news stories?
1. Length of the article
 2. Reader appeal
 3. Security
 4. Authenticity
- 5-60. You may obtain a good flow of news tips by which of the following ways?
1. Trying to develop as many contacts as possible
 2. Talking about your job with your friends
 3. Cultivating good relationships with the senior officers in your command
 4. All of the above
- 5-61. Public affairs office personnel will find it useful to keep track of future events and to schedule publicity releases by use of which of the following methods?
1. Assigning one person in the office to write created news stories
 2. Using a tickler system
 3. Scheduling the publicity story for each event on a certain date
 4. Each of the above
- 5-62. What source of Navy news is usually collected as created news?
1. The future file
 2. Official contacts
 3. Unofficial contacts
 4. Messages, directives and official correspondence
- 5-63. In what method of gathering news should you attempt to get more information than is actually needed?
1. Research
 2. Interview
 3. Telephone conversation
 4. Observation
- 5-64. You should avoid using the telephone to request information under what circumstance?
1. When a third person can overhear the conversation
 2. When your information source is a very busy person
 3. When the person called can be easily reached in other ways
 4. When the subject of your conversation may touch upon classified matters

5-65. In writing a feature story, you should use what method of gathering news to give depth to the story?

1. Interview
2. Research
3. Observation
4. Telephone conversation

5-66. What method of getting information for news stories is the most frequently used?

1. Research
2. Observation
3. Interviewing by phone or in person
4. Reading Navy messages and directives

ASSIGNMENT 6

Textbook Assignment: “Gathering and Disseminating Navy News”—(continued), chapter 7, pages 7-5 to 7-12; and “Publications,” chapter 8, pages 8-1 through 8-12.

6-1. An interview feature story, unlike an interview-based news story, emphasizes which of the following factors?

1. The central news event
2. The writer’s opinions and reactions about an event
3. The accomplishments or views of a group or of an individual
4. Information about an occurrence

6-2. A tip that arouses the curiosity of the writer and becomes a major news story can often result from what type of interview?

1. News
2. Casual
3. Personality
4. Prepared question

6-3. If you are unable to arrange a direct face-to-face interview, you should rely on what type of interview?

1. News
2. Casual
3. Personality
4. Prepared question

6-4. A feature story that delineates the character, appearance and mannerisms of an individual is best written after the writer has conducted what type of interview?

1. News
2. Casual
3. Personality
4. Prepared question

6-5. An event or development of current and immediate interest would be the subject of what type of interview?

1. News
2. Casual
3. Personality
4. Prepared question

6-6. Which of the following types of interviews is a modified version of the news interview?

1. Symposium
2. Telephone
3. Prepared question
4. News conference

6-7. A symposium interview is used for which of the following purposes?

1. Getting authoritative opinion
2. Obtaining information from a number of persons
3. Getting background material for a created news story
4. Writing a personality profile

6-8. A new officer in charge has reported for duty. Before interviewing the officer for a feature story in the station newspaper, you should take which of the following actions?

1. Talk to the officer's family for background color
2. Study all biographical data on the subject so you can demonstrate your knowledge of him or her
3. Interview shipmates who served with the officer

6-9. During an interview, the subject mentions an angle to the story that you hadn't known about. What action should you take?

1. Politely listen and write down the information, but don't use it in the story
2. Request that the interviewee remain on the subject
3. Record the information and ask any appropriate follow-up questions

6-10. During a telephone interview, the subject mentions a family member with an unusual name. How should you handle the spelling of the name?

1. Give it your best guess
2. Ask the subject to spell it for you
3. Don't use the name in the story
4. After the interview, call the family member for a correct spelling

6-11. A naval station's public affairs officer may be authorized to release Navy news of purely local interest.

1. True
2. False

6-12. News releases must be approved by an authority higher than a commanding officer for which of the following subjects?

1. Reductions in naval personnel at a naval station
2. Names of civilian casualties aboard a Navy ship
3. Routine movement of a naval ship from one naval station in the United States to another
4. All of the above

6-13. Complete details on the proper release of all types of news is covered in which of the following publications?

1. *Navy Regulations*
2. *Navy Public Affairs Regulations*
3. *Freedom of Information Act*
4. All of the above

6-14. To disseminate news, Navy Journalists use what method most often?

1. Interviews
2. Background briefing
3. Spot news announcements
4. Standard Navy news releases

QUESTIONS 6-15 THROUGH 6-21 PERTAIN TO THE STANDARD NAVY NEWS RELEASE FORMAT.

6-15. Which of the following information must appear on every release?

1. Name and address of originating command
2. Point of contact for further information
3. Office telephone numbers
4. All of the above

- 6-16. How should copy be typed on the release form(s)?
1. Single spaced, one side per page
 2. Single spaced, on both sides of the paper, if needed
 3. Double spaced, one side per page
 4. Double spaced, on both sides of the paper, if needed
- 6-17. The majority of standard Navy news releases are of what type?
1. Hold For Release
 2. For Immediate Release
 3. Background Information Only
- 6-18. If a Navy story is for immediate release, how is that information conveyed to the news media receiving the release?
1. The words "FOR IMMEDIATE RELEASE" are typed in the upper right-hand corner of the release
 2. The words "FOR IMMEDIATE RELEASE" are typed near the left margin of the release, preceding the story
 3. The date and time a story may be released are included in the cover letters to the media
 4. News media representatives are informed by telephone when the releases can be printed
- 6-19. Which of the following news items prepared on 1 July might you justify issuing on a "HOLD FOR RELEASE" basis?
1. A ship to be commissioned on 21 July
 2. Text of a speech to be given by the CO on 4 July
 3. Naval station general public visit schedule for 3, 4 and 5 July
 4. Story of an accident that does not include names of casualties
- 6-20. Local newsmen gain which of the following advantages by receiving a "HOLD FOR RELEASE" future speech of a Navy official?
1. They need to record only a part of the speech
 2. They would not have to take notes during the speech
 3. They may set their story in type ahead of time, then only modify any changes made in the speech
 4. Each of the above
- 6-21. What is the purpose of a release numbering system?
1. To simplify identification of each release
 2. To expedite getting spot news released
 3. To make workload scheduling in the office more efficient
 4. To keep track of how many stories are written monthly
- 6-22. You are preparing a news release for media A, B and C. It is the first release made by your office in calendar year 1994. What release number should you assign to each release?
1. 1a-04 to A, 1b-04 to B, 1c-04 to c
 2. 1-04 to A, 2-04 to B, 3-04 to C
 3. 1-04 to all three
 4. 04-1a to A, 04-2b to B, 04-3c to c
- 6-23. A news conference should be called for which of the following purposes?
1. Requesting media to submit questions in advance
 2. Squelching disclosures that the Navy wants to hide
 3. Increasing the prestige of the information to be released
 4. Releasing information that cannot be sufficiently covered by any other means

- 6-24. To release information without identifying the individual as the source of the news, the Navy uses what method?
1. Symposium interviews
 2. Background briefings
 3. News conferences
 4. Written releases
- 6-25. Immediacy is of the greatest importance in what type(s) of release(s)?
1. Spot news announcements
 2. Feature releases only
 3. Advance releases only
 4. Feature and advance releases
- 6-26. Photographs are often included with what type(s) of release(s)?
1. Spot news announcements
 2. Feature releases only
 3. Advance releases only
 4. Feature and advance releases
- 6-27. What type(s) of release(s) is/are newsworthy only when it contains a great deal of general human interest?
1. Spot news announcements
 2. Feature releases only
 3. Advance releases only
 4. Feature and advance releases
- 6-28. Invitations, background material and programs are often issued for future events and accompany what type(s) of release(s)?
1. Spot news announcements
 2. Feature releases only
 3. Advance releases only
 4. Advance releases and follow-up
- 6-29. A follow-up story usually supplements what type(s) of release(s)?
1. Spot news announcement
 2. Feature releases only
 3. Advance releases only
 4. All the above
- 6-30. An interview as a method of disseminating news differs from a news conference in which of the following ways?
1. It involves communication of information from a spokesperson to only one reporter
 2. It is limited to a shorter period of time
 3. It usually produces more information for the reporter
- 6-31. Your PAO has just finished a speech at a local Rotary club meeting. As he is leaving, club members comment on the speech and ask his opinion on another military matter not related to the speech. If he were to respond to the questions, what method of news dissemination, if any, would he or she be using?
1. Background briefing
 2. Casual interview
 3. Personal appearance
 4. None
- 6-32. Which of the following is/are a component of a desktop publishing system?
1. Personal computer
 2. Page layout software
 3. Laser printer
 4. All of the above

6-33. Which of the following is NOT an advantage of desktop publishing?

1. A dramatic cut in cost
2. Standardized page layouts
3. Less space occupied
4. Less disruptive last minute changes

6-34. Which of the following is/are an advantage of desktop publishing?

1. Faster turnaround time
2. Eliminates the need to work with publishers on initial paste-up
3. Both 1 and 2 above
4. Eliminates the need to work with reporters and copy editors

6-35. Peripheral equipment that will add greatly to the flexibility of your desktop publishing system includes all except which of the following?

1. Mouse
2. Scanner
3. Surge suppressor
4. CD-ROM

6-36. All word processing programs and desktop publishing programs are compatible.

1. True
2. False

6-37. A newspaper measuring 12 inches by 18 inches and having five columns is said to be what format?

1. Magazine
2. Full format
3. Tabloid
4. Compact

6-38. Which of the following characteristics determines the format of the newspaper?

1. The position of the lead story
2. The number of halftones used
3. The shape, size and general physical form
4. The newspaper's editorial policy

6-39. The design for a newspaper should accomplish which of the following purposes?

1. Emphasize which material presented is most important
2. Draw and hold the reader's eye
3. Allow the reader to obtain the most information in the shortest amount of time
4. All of the above

6-40. A detailed plan or sketch showing the arrangement of art, headlines and copy to guide in making up the actual pages is known by what term?

1. A paste-up
2. A dummy
3. A matrix
4. A pattern

6-41. In planning a page for a newspaper, the columns on your layout sheet should be drawn in which of the following ways?

1. To scale only
2. To size only
3. To scale or size, as desired
4. To rough approximation of actual size

6-42. On a layout sheet, what is the recommended way for you to indicate where a particular story goes?

1. Slug the story
2. Number the story
3. Write the lead on the layout sheet
4. Draw an arrow from the headline of the story to the space on the layout sheet

- 6-43. A story is under a two-column head with each column measuring 5 inches down the page. How many column inches does the story fill?
1. 5
 2. 2
 3. 7 1/2
 4. 10
- 6-44. You've typewritten a story that is 10-point type on two 8 1/2 by 11-inch paper, 45 lines long. Your newspaper has five columns at 14 picas each. How many column inches will your story occupy?
1. 5
 2. 11
 3. 15
 4. 22
- 6-45. What photograph cropping procedure is the most accurate and most commonly used by the Navy?
1. Masking
 2. Cutting
 3. Cutlining
 4. Marking margins with grease pencil or ink
- 6-46. You must crop a valuable photo of which you have only one print. What procedure(s) should you follow?
1. Marking with a grease pencil
 2. Scaling only
 3. Masking only
 4. Masking and scaling
- 6-47. You have a photo that is 3 inches wide and 5 inches deep. You wish to use it as a two-column picture, which is 5 inches wide. For the enlarged photo, how many inches in depth should you mark off on the layout?
1. 5 inch
 2. 8 inch
 3. 8 1/3 inch
 4. 8 3/4 inch
- 6-48. Concerning type size, 1/2 inch is equal to how many points?
1. 12
 2. 24
 3. 36
 4. 72
- 6-49. In measuring type, six picas is equal to how many points?
1. 12
 2. 24
 3. 36
 4. 72
- 6-50. A layout editor must be able to determine approximate length (in column inches) of a story from typed copy.
1. True
 2. False

ASSIGNMENT 7

Textbook Assignment: "Publications," chapter 8, (continued), pages 8-12 through 8-24.

7-1. The width of a line of type is measured in which of the following dimensions?

1. Picas
2. Points
3. Inches
4. Millimeters

7-2. The height of a letter of type is measured in which of the following dimensions?

1. Millimeters
2. Points
3. Picas
4. Inches

7-3. What term is used to describe the different styles of type?

1. Faces
2. Series
3. Families
4. Serifs

7-4. When selecting type, what should you consider first?

1. Dignity
2. Clarity
3. Boldness
4. Strength

7-5. The principal difference between old style and modern Roman types is that old style has which of the following characteristics?

1. Rounded serifs
2. FAT hairlines
3. Straight serifs
4. Heavier shadings

7-6. What is the name given to the typeface characterized by slanted letters that is made to match almost every type style in use?

1. Script
2. Gothic
3. Italics
4. Text

IN ANSWERING QUESTIONS 7-7 THROUGH 7-11, SELECT FROM THE LIST BELOW THE TYPEFACE CUSTOMARILY USED FOR THE PURPOSE STATED IN THE QUESTION. RESPONSES MAY BE USED MORE THAN ONCE.

- A. Roman
- B. Gothic
- C. Contemporary
- D. Script

7-7. To print the text of newspapers, books and magazines.

1. A
2. B
3. C
4. D

7-8. To print formal material, such as invitations.

1. A
2. B
3. C
4. D

7-9. To print advertisements, compositions, and TV commercials.

1. A
2. B
3. C
4. D

7-10. To print labels on cans and boxes.

1. A
2. B
3. C
4. D

7-11. To print posters and newspaper headlines.

1. A
2. B
3. C
4. D

7-12. What typeface most closely resembles handwriting?

1. Script
2. Italics
3. Gothic
4. Text

7-13. Typefaces that bear a close resemblance to each other but are not exactly alike in design are known by which of the following names?

1. Series
2. Races
3. Families
4. Fonts

7-14. What is the complete assortment of type in one size and style called?

1. Case
2. Class
3. Series
4. Font

7-15. When you use an initial letter to begin a page or a paragraph, what rule is generally followed?

1. The entire sentence is capitalized
2. The rest of the word is capitalized
3. The remainder of the word is italicized
4. The rest of the sentence is printed in boldface

7-16. When you select ornaments for a print job, what is the general rule to follow?

1. Select ornaments for decoration only
2. Abundantly decorate the job with ornaments
3. Select ornaments that contrast with the type
4. Use ornaments that correspond with the type

7-17. What is meant by the focal point of a newspaper page?

1. The name of the newspaper
2. The area where the reader normally expects to find the most important story
3. The area occupied by the largest picture
4. The most attractive area of the page

7-18. What device was used by newspaper editors of the '30s and '40s to establish the upper right-hand corner of a newspaper page as the focal point?

1. Arrows
2. Art
3. Banner headlines
4. Sub-heads

7-19. What area is most commonly used as the front-page focal point for today's newspapers?

1. Upper right-hand corner
2. Upper left-hand corner
3. Upper center
4. None

7-20. On the inside page with no advertising, where is the focal point?

1. Upper right-hand corner
2. Upper left-hand corner
3. Upper center
4. Center page

IN ANSWERING QUESTIONS 7-21 THROUGH 7-25, SELECT FROM THE LIST BELOW THE TYPE OF MAKEUP LINE CHARACTERIZED BY THE INFORMATION GIVEN AS THE QUESTION. RESPONSES MAY BE USED MORE THAN ONCE.

- A. Circle
- B. Diagonal
- C. Horizontal
- D. Vertical

7-21. Tends to add rhythm to a page and encourages the reader to read through the page.

1. A
2. B
3. C
4. D

7-22. Places equal importance on all stories.

1. A
2. B
3. C
4. D

7-23. Was used in makeup in early America.

1. A
2. B
3. C
4. D

7-24. Introduced in World War II and is the most striking change in newspaper appearance this century.

1. A
2. B
3. C
4. D

7-25. Used to get reader to read back and forth on page.

1. A
2. B
3. C
4. D

7-26. Which of the following design concepts is used to standardize the day-to-day appearance of a newspaper?

1. Balance
2. Unity
3. Rhythm
4. Harmony

7-27. Separating display items to give each the attention it deserves on a newspaper page is the practice of which of the following design concepts?

1. Balance
2. Contrast
3. Unity
4. Harmony

- 7-28. A paneled page is one that lacks adherence to which of the following design concepts?
1. Balance
 2. Harmony
 3. Contrast
 4. Unity
- 7-29. Which of the following elements help the reader to identify a particular newspaper?
1. Masthead, headlines and devices
 2. Nameplate, flags and devices
 3. Nameplate, masthead and flags
 4. Flags, headlines and masthead
- 7-30. Which of the following elements of the newspaper include(s) the disclaimer?
1. The flag
 2. The nameplate
 3. The masthead
 4. All of the above
- 7-31. To indicate the section pages of a newspaper, you should use which of the following newspaper makeup elements?
1. Nameplates
 2. Flags
 3. Mastheads
 4. Section logos
- 7-32. Which of the following newspaper makeup elements contribute to all of the five concepts of newspaper design?
1. Flags
 2. Mastheads
 3. Typographic devices
 4. Headlines
- 7-33. A story requiring a jump should be split in which of the following ways?
1. At the end of a paragraph
 2. At the end of a sentence not ending a paragraph only
 3. In midsentence only
 4. Either 2 or 3 above, depending on editorial preference
- 7-34. Which of the following examples represents the best use of a thumbnail photo?
1. It is positioned so that it looks into the story or out of the page and has a name line
 2. It is printed one column wide and floated in the copy above a name line
 3. It shows action or motion and is used to guide the reader's eye through a page
 4. It should give a "thumbnail sketch" of the story, and it should be at least two columns wide and placed at the end of the story
- 7-35. Which of the following techniques may be used to break up the grayness of a page?
1. Using boxes and dingbats
 2. Using pictures effectively
 3. Using a variety of type
 4. All of the above

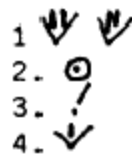
- 7-36. Which of the following typographic devices are commonly favored by contemporary newspaper editors to separate unrelated items and to unite related items?
1. Column rules and cutoff rules
 2. End dashes and em dashes
 3. Cutoff rules and dinky dashes
- 7-37. Reefers are used to break up grayness on a page by employing which of the following typographical devices?
1. A hammerhead
 2. Dingbats
 3. A sandwich
 4. An initial letter
- 7-38. Which of the following items identifies a newspaper on each page of the publication?
1. A dateline
 2. A folio line
 3. A window
 4. A flag
- 7-39. All special pages of a newspaper should have which of following traits in common?
1. Artistic designs
 2. Individual personalities
 3. A similarity in makeup
 4. Action pictures
- 7-40. What factor determines the format to be used in laying out a picture story?
1. The importance of the story
 2. The space limitations of the publication
 3. The expressed interests of the publication's readers
 4. The number of photographs available
- 7-41. In a picture story, what picture is the most important?
1. The central picture in the body
 2. The closing picture
 3. The lead picture
- 7-42. For a picture story layout, the subject of the lead photograph should face in what direction?
1. To the viewer's right
 2. Downward
 3. Straight out of the page
 4. To the viewer's left
- 7-43. Headlines, cutlines and text in a picture story layout serve which of the following functions?
1. They provide facts to supplement the pictures editorially
 2. They serve graphically as elements of composition
 3. Both 1 and 2 above
 4. They duplicate the message in the pictures
- 7-44. What are the initial copies of your typeset stories called?
1. Galley proofs
 2. Dummies
 3. Proofs only
 4. Trays, galley proofs or proofs
- 7-45. What method of noting proofreader's marks requires the editor to draw lines to the error and place the proofreading symbol in the margin?
1. Book system
 2. Guideline system
 3. College system
 4. AP system

A.	Mans odds for survival in polar area
B.	could be
C.	greatly increased as a result of 2 recent
D.	inventions
E.	sponsored by the coast guard.
F.	The inventions include a light weather-
G.	Resistant tent,
H.	and a blanket which, when folded, will fit in
I.	the palm
J.	of the hand Both are designed to conserve
K.	body warmth.
L.	Light, portable and easily assembled, the tent
M.	is
N.	made of fabric which is windproof and water
O.	proof
P.	Yet it is porous enough to permit the escape
Q.	of body
R.	moisture while retaining the occupants body
S.	heat.
T.	The blanket is made of light, aluminized
U.	plastic film
V.	which possesses unusual toughness and
W.	durability. This
X.	type film is presently used in space
Y.	operations.
Z.	Although the blanket measures 56 by
AA.	84 in, it
AB.	be can folded into a small, rectangular
AC.	package suitable
AD.	for easy for handling.

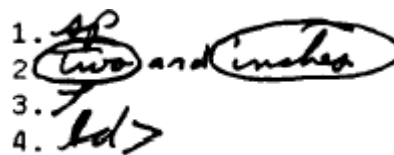
Figure 7-A.—A galley to be proofread

FIGURE 7-A IS AN ARTICLE TO BE PROOFREAD AND EDITED. THE LETTERS PRECEDING EACH LINE ARE REFERENCES IN ANSWERING QUESTIONS 7-46 THROUGH 7-57. PROOFREAD THE ARTICLE, USING THE APPROPRIATE MARKS GIVEN IN FIGURE 8-21 OF YOUR TEXTBOOK, THEN ANSWER THE FOLLOWING QUESTIONS.

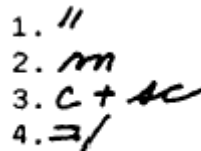
7-46. What symbol should you enter to correct the possessive cases in lines A and J?



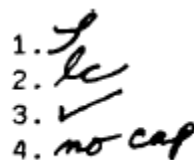
7-47. What indication should you make to show the printer that the number in line B and the measurement in line N are to be spelled out?



7-48. Which of the following marks should you use on line C?







7-49. What mark should be used for the error in line D?







7-50. In line E, assume that you made marks to remove the commas preceding, “when folded.” However, you now decide to retain the commas. What should you write to indicate that fact?

1. Don’t change
2. Disregard
3. Stet
4. Replace commas





7-51. Which of the following marks should you use to correct the punctuation of line F?

1. 
2. 
3. 
4. 





7-52. What mark indicates that punctuation has been omitted from line G?

1. 
2. 
3. 
4. 





7-53. What mark should you use for line H to indicate that “water proof” is one word?

1. 
2. 
3. 
4. 





7-54. What mark should you use to indicate that line I continues the sentence begun on line G?

1. 
2. 
3. 
4. 





7-55. What mark should you enter to correct line M?

1. 
2. 
3. 
4. 

7-56. What symbol do you insert at line O to indicate the transposition of words?

1. 
2. 
3. 
4. 

7-57. What mark should you use to eliminate the duplicated word in line P?

1. 
2. 
3. 
4. 

ASSIGNMENT 8

Textbook Assignment: “Publications,” chapter 8—(continued), pages 8-25 through 8-30; and “Writing Headlines and Cutlines,” chapter 9, pages 9-1 through 9-13.

8-1. What is the primary reason for designing a newspaper page?

1. To decrease the time required in the makeup process
2. To make the page easier to read
3. To provide equal treatment to all major stories
4. To keep readers from becoming bored with one repetitious pattern

8-2. Which of the following patterns is representative of contemporary style magazines?

1. Formal balance
2. Focus
3. Grid
4. Quadrant

IN ANSWERING QUESTIONS 8-3 THROUGH 8-8, SELECT FROM THE LIST BELOW THE DESIGN PATTERN CHARACTERIZED BY THE STATEMENT GIVEN AS THE QUESTION. RESPONSES MAY BE USED MORE THAN ONCE.

- A. Focus
- B. Formal
- C. Quadrant
- D. Circus

8-3. The page is divided into quarters and a major element is placed in each quarter.

1. A
2. B
3. C
4. D

8-4. The news is made up on a diagonal line that calls the reader’s attention to the most important story on the page.

1. A
2. B
3. C
4. D

8-5. The news is presented so that all elements vie for the reader’s immediate attention.

1. A
2. B
3. C
4. D

8-6. The page is divided in half vertically.

1. A
2. B
3. C
4. D

8-7. The reader’s attention is directed to the upper corners of the page by the stair step arrangement of headlines.

1. A
2. B
3. C
4. D

8-8. This design is characterized by such elements as immense type and large art masses in unorthodox shapes.

1. A
2. B
3. C
4. D

8-9. In which of the following design patterns is the page divided in half vertically and, for each element placed on one side of the center line, a duplicate element is placed at the same point on the opposite side?

1. Dynamic balance
2. Functional
3. Formal balance
4. Modular

8-10. Which of the following designs follows no set pattern and allows the news to dictate the layout?

1. Formal balance
2. Functional
3. Horizontal
4. Dynamic balance

IN ANSWERING QUESTIONS 8-11 THROUGH 8-15, SELECT FROM THE LIST BELOW THE DESIGN PATTERN CHARACTERIZED BY THE STATEMENT GIVEN AS THE QUESTION. RESPONSES MAY BE USED MORE THAN ONCE.

- A. Horizontal
- B. Modular
- C. Grind
- D. Functional

8-11. Large multicolumn headlines, large horizontal pictures.

1. A
2. B
3. C

8-12. This format came about from a study that showed that readers estimate they read horizontal copy faster than vertical copy.

1. A
2. B
3. C
4. D

8-13. Intersecting lines are used to form rectangles to give a page the look of modern magazines.

1. A
2. B
3. C
4. D

8-14. Pleasing vertical and horizontal rectangles are combined and irregular story shapes are avoided.

1. A
2. B
3. C
4. D

8-15. A strong vertical chimney is the earmark of this design pattern.

1. A
2. B
3. C
4. D

8-16. Which of the following design patterns places a strong emphasis on a single story or issue?

1. Focus
2. Total
3. Functional
4. Grid

- 8-17. Around the time of the Spanish-American War, which headline form was introduced?
1. Initial letter
 2. Multi-column heads
 3. Multi-decked heads
 4. Streamlined, compact heads
- 8-18. In the modern period following World War I, what headline type came into prominence?
1. Initial letter
 2. Multicolumn heads
 3. Multi-decked heads
 4. Streamlined, compact heads
- 8-19. Which of the following pairs of adjectives best describe a good, modern headline?
1. Long and specific
 2. Brief and dramatic
 3. Long and informative
 4. Brief and informative
- 8-20. The headline "Navy to Buy Whole Town" illustrates what headline style?
1. Downstyle
 2. All caps
 3. Upper and lower head
 4. Lower head
- 8-21. A single-line headline across the top of the page is what type of headline?
1. Hammerhead
 2. Kicker
 3. Banner
 4. Readout
- 8-22. The headline "Upgrading urged for nation's railroads" illustrates what headline style?
1. Down style
 2. All caps head
 3. Upper and lower head
 4. Lower head
- 8-23. What headline style is the most difficult to read?
1. Down-style
 2. All caps head
 3. Upper and lower head
 4. Lower head
- 8-24. In a flush-left head, the lines must be of equal length.
1. True
 2. False
- 8-25. A headline that is twice the size and set flush left above the main head is known by what term?
1. Tripod
 2. Hammerhead
 3. Rocket
 4. Wicket
- 8-26. What is the composition of a tripod head?
1. A short line of larger type set flush left and above two lines of smaller type
 2. Two lines of small type to the right of a short line of larger type twice the size of the smaller type
 3. A single, short line of smaller type to the left of two lines of larger type
 4. A larger type centered above the main head of smaller type
- 8-27. What letters each equal two units in an all-cap headline?
1. M and W
 2. N and O
 3. P and Q
 4. R and S

- 8-28. In headline counting, all numerals, with one exception, equal how many units?
1. 1
 2. 2
 3. 1/2
 4. 1 1/2
- 8-29. Which of the following punctuation marks is evaluated as 1 1/2 units?
1. Exclamation mark
 2. Question mark
 3. Apostrophe
 4. Semicolon
- 8-30. In striving to write brief headlines, you often omit which of the following parts of speech?
1. The action verb
 2. Nouns used as subjects
 3. Adjectives, adverbs and articles
 4. Abbreviations
- 8-31. Which of the following is a rule for verb use in headlines?
1. Use active verbs in the past tense
 2. Use active verbs in the historical present tense
 3. Use passive verbs in the past tense
 4. Use passive verbs in the historical present tense
- 8-32. Which of the following is the rule for verb and article use in headlines?
1. Verbs may be omitted, articles may not
 2. Verbs and articles are required
 3. Verbs and articles may be omitted
 4. Verbs may be omitted; articles are always omitted
- 8-33. Which of the following headlines is written in the best style?
1. Bar S. Africa From Olympics
 2. Voters Bar S. Africa
 3. Olympic Committee Bars South Africa
 4. S. Africa is Barred From Olympic Games
- 8-34. "Young pedestrian shot in leg" is a better headline than "Injuries sustained by child" for what reason?
1. It is more specific
 2. It is more positive
 3. It includes more of the five Ws
 4. It uses more short, active words
- 8-35. Which of the five Ws can generally be omitted in the headline of a local story?
1. Where
 2. When
 3. Who and what
 4. Where and when
- 8-36. The main reason headline writers use a specialized vocabulary is the necessity for which of the following?
1. Colorful writing
 2. Brevity
 3. Clarity
 4. Originality
- 8-37. Under what circumstances may you use the abbreviation SECNAV in a headline?
1. When space constraints make it necessary
 2. When you spell out the title in the lead of the story
 3. When the press release goes to a broadcast outlet
 4. When the headline is for a Navy publication

- 8-38. What is the purpose of a photo outline?
1. To add interest to the picture
 2. To tell the complete story
 3. To add information that, together with the picture, tells the story
 4. To identify the picture elements
- 8-39. Gathering information for a cutline is similar to compiling material for what other publication element?
1. A film script
 2. An editorial cartoon
 3. A brief TV or radio announcement
 4. A news story
- 8-40. What is the rule for the length of a cutline?
1. Use one line
 2. Use one sentence
 3. Use two or three lines
 4. Use the fewest words that will convey the message clearly
- 8-41. Which of the following is a principle about the style of writing cutlines?
1. The cutline should arouse, but not satisfy, the reader's curiosity
 2. The style varies according to the type of picture and the policies of the individual publication
 3. The cutline should serve as a lead-in to an accompanying story
 4. The style is always the same for any type of picture
- 8-42. What are the major components of a cutline?
1. Lead, bridge, action and credit line
 2. Tie-back, identification, attribution and conclusion
 3. Identification, tie-in, action and background information
 4. Action, background information, credit line and identification
- 8-43. The first sentence in a good outline usually describes or names which of the following picture elements?
1. The action shown, or "what"
 2. The persons shown, or "who"
 3. The background details, or "when"
 4. The news peg, or "why"
- 8-44. You are writing a cutline for a news photo that shows a Navy plane on fire after being struck by lightning. Which of the following first sentences is the best?
1. Firefighters use foam to save
 2. Firefighters combated flames on a Navy plane struck by lightning
 3. Firefighters at Memphis Naval Air Station pumped foam on burning plane set afire by lightning
 4. Foam pumped on this Navy plane, struck by lightning, put out the fire before great damage was done
- 8-45. The "when" element in a cutline, if needed, is usually included where?
1. In the news story, not in the cutline
 2. At the end of the cutline
 3. In the second sentence of the cutline
 4. In the first sentence of the cutline
- 8-46. The amount of background information needed in a cutline is influenced by which of the following factors?
1. Who is in the picture and what is being depicted
 2. When and where the action occurred
 3. Why the picture was taken and what the story tells
 4. How and where the picture will be used

8-47. How should you use verb tenses in cutlines?

1. Use present, past and future tenses as in any writing
2. Use the present tense throughout
3. Describe the action in the present tense, and use appropriate tenses for background information
4. Use the past tense throughout

8-48. Where is the recommended position of the credit line in the cutline?

1. Preceding the action element
2. Following the action element
3. Preceding the background information
4. Following the background information

8-49. By which of the following methods of cutline typography may you heighten the impact of a picture for better display?

1. By setting the cutline in a larger typeface than the news column
2. By setting the cutline boldface in the same style and size of type as the news column
3. By using a different typeface than that in the news column
4. Each of the above

8-50. The cutline for a three-column photo is wrapped when it is set in what way?

1. As a single column stretching the full length of the photo
2. As a column of two-column width and centered under the photo
3. As two columns, each one and a half columns in width and set side by side
4. As three columns of one column width each and set side by side

ASSIGNMENT 9

Textbook Assignment: “Writing Headlines and Cutlines,” chapter 9—continued, pages 9-14 to 9-16; and “Legal Concerns, chapter 10, 10-1 through 10-16.

- 9-1. A three-column picture carries a two-column wide cutline to the right and a caption under the lefthand column. What is the caption called?
1. An underline
 2. An overline
 3. A lead-in
 4. A side catchline
- 9-2. What principle should you observe when you lay out a page containing pictures, cutlines and accompanying outlines?
1. Always run the picture and accompanying story side by side
 2. Follow tradition and place the cutline below the story
 3. Consider the picture and its cutline as one element
 4. Run the cutline beside the picture
- 9-3. You write a story and have a photo to accompany it. You learn the newspaper has space problems and can use the photo only. What, if anything, should you do?
1. Rewrite the story to shorten it
 2. Ask the layout artist to find another spot for the story and key the story and picture appropriately
 3. Rewrite the cutline to include all the essential facts
 4. Nothing
- 9-4. You are training a JO striker. He has both a picture and story material for the station newspaper. You should suggest that he begin writing which element first?
1. The story
 2. The cutline
 3. The headline
 4. The dateline
- 9-5. A dateline for a photograph is required when a picture is submitted under which of the following conditions?
1. When it's set for immediate release to a ship's newspaper
 2. When it's prepared for external release
 3. When it's accompanied by a story
 4. When it has no cutline
- 9-6. Which of the following statements is true of libel and slander?
1. Libel is spoken, slander is written
 2. Slander is spoken, libel is written
 3. Reporters are protected by libel and slander charges by the First Amendment to the U.S. Constitution
 4. Libel and slander laws are federal statutes

- 9-7. What statement best defines libel?
1. Libel is a printed lie about somebody
 2. Libel is a published defamation that unjustly holds a person up to ridicule
 3. Libel is a spoken defamation that unjustly holds a person up to ridicule
 4. Libel is a defamation that results in a sensational court case
- 9-8. For a statement to be libelous, which of the following conditions must be present?
1. The statement must have clearly identified the person in question
 2. The statement must have been published
 3. The character or property of the person in question must have been degraded
 4. Each of the above
- 9-9. For what reason does respectable news medium obey the libel laws?
1. It believes in the dignity of the individual
 2. It wishes to shun controversy
 3. It does not desire adverse criticism
 4. It does not wish to be closed by the government
- 9-10. Which of the following acts would constitute libel?
1. A newspaper's attack on an individual's personal reputation
 2. A comment regarding the political position of a candidate
 3. A review of a new movie
- 9-11. A reporter writes a story accusing a county official of taking bribes. His paper prints it, the UPI picks it up and other newspapers print it as well. The accused official sues. Who could be named as a defendant in the suit and be held liable for damages?
1. Only the reporter who wrote the story
 2. Just the newspapers that ran the story
 3. Only the original newspaper
 4. Everyone who had anything to do with the story
- 9-12. What are the two types of libel?
1. Libel per quod and defamation
 2. Libel per se and defamation
 3. Libel per quod and libel per se
 4. Libel per se and slander
- 9-13. A feature story about a presidential candidate stresses his strong affiliation with and loyalty to a particular church. It also states later in the article that the church discriminates against several ethnic groups, implying that the candidate shares those views. What term best describes the legal posture of the story?
1. Libel per se
 2. Libel per quod
 3. Uncontradicted rumor
 4. Fair comment or criticism
- 9-14. In a small town, the newspaper publisher is the brother of a prominent doctor who runs the local clinic. When a new doctor comes to town and opens an office, the newspaper publishes a story about him. The article tells of the new doctor's involvement in a malpractice suit, but fails to mention he was acquitted of the charge. What term best describes the legal posture of the story?
1. Libel per se
 2. Libel per quod
 3. Uncontradicted rumor
 4. Fair comment or criticism

- 9-15. A newspaper article states that a candidate for Congress is said to be a former member of the Ku Klux Klan. The purpose of the claim is apparently to discredit the candidate through association. The candidate states that the accusation was based on a wrong identification. If the candidate's claim is true, what term best describes the legal posture of the story?
1. Libel per se
 2. Libel per quod
 3. Uncontradicted rumor
 4. Fair comment or criticism
- 9-16. In a city crippled by a transit strike, the mayor refuses to appoint an arbitrator to consider the union's grievances. A local newspaper accuses the mayor of neglecting the public welfare. The mayor sues the paper. What term best describes the legal posture of the story?
1. Libel per se
 2. Libel per quod
 3. Uncontradicted rumor
 4. Fair comment or criticism
- 9-17. Whether words involved in a libel suit are libelous is determined by which of the following parties?
1. The courts
 2. The plaintiff
 3. The defendant
 4. The public
- 9-18. What type of libel is considered most serious and can support a lawsuit in itself?
1. Libel per se
 2. Libel per quod
 3. Civil libel
 4. Slander
- 9-19. The legal action of one individual suing a corporation for alleged defamation may result from which of the following classes of libel?
1. Seditious
 2. Obscene
 3. Civil
 4. Criminal
- 9-20. Under what condition may an individual bring a civil libel suit against the U.S. government?
1. When the government has committed seditious libel
 2. When the government admits guilt of libel
 3. When the government will not settle out of court
 4. Only when the government consents to the suit
- 9-21. Who is the accuser in a criminal libel suit?
1. The Department of Justice
 2. The state
 3. The defendant
 4. The plaintiff
- 9-22. Which of the following are partial defenses that can lessen the damages assessed against a defendant in a libel suit?
1. Retraction (or apology) and good faith (or honest mistake)
 2. Truth and retraction (or apology)
 3. Fair comment and criticism
 4. Honest mistake (or good faith) and truth

9-23. Under what circumstances can the defense of “repetition” be used?

1. When a libelous story is repeated in a subsequent edition of the same publication before the libeled party can begin legal action
2. When the libeled party has a history of committing the act reported on by the publication
3. When a publication uses a libelous story that has been printed elsewhere
4. When another publication is already charged with libel for the same story

9-24. What are two complete defenses against libel action that, if proved, will lead to acquittal?

1. Truth and honest mistake
2. Fair comment and criticism and retraction
3. Honest mistake and publishing an apology
4. Truth for a good reason and fair comment and criticism

9-25. When will even ethical reporters disregard an individual’s right to privacy?

1. When the person is noteworthy
2. When there is a compelling need to publish the information for the public good
3. When the information is not libelous
4. When they believe the information is about to be published by other newspapers

9-26. Current copyright laws in the United States are in what form?

1. State statutes
2. The Copyright Act of 1976
3. Federal copyright laws dating from 1909
4. Current international treaties that the U.S. has signed

9-27. Which of the following is NOT eligible for copyright protection?

1. Audiovisual works
2. Slogans and familiar symbols
3. Choreographed works
4. Sound recordings

9-28. Which of the following is NOT eligible for copyright protection?

1. Sculptures
2. Facts and lists taken from public documents
3. Maps photographs and drawings
4. Technical encyclopedias

9-29. Where copyright protection applies, it is available to which of the following works?

1. Published works only
2. Unpublished works only
3. Both published and unpublished works
4. Published works and original ideas

9-30. The Copyright Act of 1976 became effective on what date?

1. Jan. 1, 1976
2. Jan. 1, 1977
3. Jan. 1, 1978
4. Jan. 1, 1979

- 9-31. A journalist quoting in a newsstory an excerpt from a popular novel without permission from the copyright holder is an example of which of the following terms?
1. Copyright infringement
 2. Doctrine of fair use
 3. Compulsory license limitation
 4. Plagiarism
- 9-32. While in the course of carrying out official duties, a Navy journalist infringes on a copyright. What legal action, if any, may the copyright owner take with the federal government's permission?
1. Sue only the journalist who infringed the copyright
 2. Sue the journalist and all persons who may have edited the material containing the infringement
 3. Sue only the U.S. government
 4. None
- 9-33. Which of the following materials is NOT subject to U.S. copyright laws?
1. Books written by professors at state universities
 2. Magazine articles written by Navy journalists during off-duty time
 3. Books published by the U.S. government
 4. Books written in federal prisons by convicted felons
- 9-34. When does copyright protection for a work begin?
1. At the moment the creator notifies the Copyright Office of the form of the work
 2. At the moment the idea for the work is conceived
 3. At the time the work is create din fixed form
 4. At the time it is labeled "copyrighted" by the U.S.
- 9-35. In the case of works made for hire, who is legally considered to be the author of such works?
1. Only the actual creator of the work
 2. Only the employer who commissioned the work
 3. Only the publisher of the work
 4. Anyone designated by the publisher of the work
- 9-36. Unless there is an agreement specifying ownership, who is the rightful owner of a joint work?
1. The publisher of the work
 2. The author who supplied the largest percentage of input to the work
 3. All contributing authors of the work are co-owners
 4. The first author to file the work with the Copyright Office
- 9-37. Under the current copyright laws, who owns the copyright on a work after the transfer of any material object that embodies a protected work has taken place?
1. The person holding the copyright before the transfer occurred
 2. The person to whom the material object was transferred
 3. Both 1 and 2 above, as co-owners
 4. The U.S. Copyright Office
- 9-38. Copyright protection is available for all unpublished works, regardless of the nationality or domicile of the author.
1. True
 2. False

- 9-39. Under the new copyright laws, when is a work considered created?
1. When it is published for the first time
 2. When it is fixed in a copy or phonorecord for the first time
 3. When the basic idea for the work is first conceived
 4. When the Copyright Office acknowledges the existence of the work
- 9-40. What is the significance of a particular work bearing the year of its publication date?
1. The date is used to determine the duration of copyright protection
 2. The date is used in determining the duration of copyright protection for an anonymous work or a work made for hire
 3. The date is used in determining the duration period between the publication of a work and the date the copyright can be renewed. The date is used to indicate when a work has been deposited with the Library of Congress
- 9-41. The inclusion of a copyright notice on a work is the responsibility of which of the following parties?
1. The Registrar of the Copyright Office
 2. The copyright owner
 3. The Clerk of the Library of Congress
 4. The publishing house that prints the work
- 9-42. The letter “P” in a circle indicates what type of copyright notice?
1. Printed matter and illustrations
 2. Published works of any type
 3. Unpublished works of any type
 4. Phonorecords or sound recordings
- 9-43. Which of the following works is NOT eligible for retroactive protection under the new copyright law?
1. Works published before January 1, 1978, that did NOT carry a proper copyright notice
 2. Any work published before January 1, 1978
 3. Works published before January 1, 1978, in foreign countries
- 9-44. If the copyright notice was omitted on a work created after January 1, 1978, what action can the owner take to maintain copyright protection?
1. Exert a reasonable effort to correct the omission within five years of registration
 2. Notify the Copyright Office of the omission and request extended protection
 3. Accept the fact that nothing can be done to maintain protection on a work if it has no copyright notice affixed
- 9-45. Which of the following is NOT a benefit of registering a work with the Copyright Office?
1. It establishes a public record of the copyright
 2. It provides prima facie evidence in court to the validity of the copyright claim
 3. It is the only way to get copyright protection
 4. If made within three months of publication, lawyer’s fees and statutory damages are available to the owner if the copyright is infringed upon

9-46. You have written a book about your experiences as a Navy journalist. What is the duration of the copyright protection for your work?

1. For 28 years from the date of first publication
2. From the moment of first publication and enduring for 50 years after your death
3. From the moment the work is created to 50 years after your death
4. For 75 years from publication or 100 years from creation, whichever is shorter

9-47. In the case of a joint work prepared by two or more authors who did not work for hire, what is the duration of copyright protection?

1. From the work's creation to the death of the last surviving author
2. From the first publication of the work to 50 years after the death of the last surviving author
3. From the work's first publication to 50 years after the death of the first author
4. From the work's creation to 50 years after the death of the last surviving author

9-48. For a work copyrighted before January 1, 1978, whose copyright is still in effect, what copyright renewal term is available?

1. 28 years
2. 47 years
3. The life of the present copyright owner
4. The life of the author plus 50 years

9-49. When a work has been registered in unpublished form, a second registration is unnecessary when the work is published.

1. True
2. False

9-50. During the registration process, how many copies should be deposited for a work published before January 1, 1978?

1. One copy as first published
2. One copy of the best edition
3. Two copies as first published
4. Two copies of the best edition

9-51. Which of the following is NOT a reason the concept of publication is important in copyright laws?

1. Works that are published must be deposited with the Library of Congress
2. The date of publication affects the copyright duration for anonymous or pseudonymous works
3. Publication is required for registration
4. Deposit requirements for registration differ based on publication

ASSIGNMENT 10

Textbook Assignment: “Basic Photography,” pages 11-1 through 11-27; and “Basic Photojournalism,” chapter 12, pages 12-1 through 12-4.

- 10-1. What are the two man-made essentials for taking a picture?
1. A camera and a light source
 2. A film and a camera
 3. A light and a film
 4. A film and a lens
- 10-2. Modern photographic film is made by using an emulsion to coat which of the following substances?
1. Glass
 2. Paper
 3. Cellulose or polymer plastic
 4. Sheet gelatin
- 10-3. Which of the following groups of components is essential to a camera?
1. A light-tight box, an exposure calculator and an image support
 2. An optical system, an image support and a view finder
 3. An image support, a light-tight box and an optical system
 4. A focusing device, a light-tight box and an optical system
- 10-4. After exposure but before development, the image on the film is known by what terminology?
1. Latent image
 2. Exposed image
 3. Halide image
 4. Monochromatic image
- 10-5. The design of the SLR allows the accomplishment of which of the following functions?
1. Judging the depth of field at a selected aperture
 2. Rapid film changing
 3. Speedy camera settings
 4. All of the above
- 10-6. Which of the following features is NOT common to modern SLR cameras?
1. Built-in, through the lens exposure meter
 2. Interchangeable lenses with sophisticated leaf shutters
 3. Focal plane shutters
 4. Interchangeable lenses with iris diaphragm
- 10-7. When you focus a camera, what is actually happening mechanically within the camera?
1. The lens is moving closer or farther from the focal plane
 2. The aperture is changing
 3. The mirror is moving closer or farther from the focal plane
 4. The focal plane angle is changing

- 10-8. How should you remove a smudge from a camera lens?
1. With any tissue only
 2. With a lens-cleaning tissue soaked with lens-cleaning solution
 3. With a lens-cleaning tissue moistened with one or two drops of lens-cleaning solution
 4. Any soft, dry cloth

- 10-9. How can you determine if a scratch on the lens is bad enough to require its replacement?
1. Any scratch will require replacement
 2. Focus the camera on an object, and check for obscured or blurred areas
 3. Give the lens to a local photo lab for a prism test
 4. Give the lens to your supervisor for his or her determination

- 10-10. What material(s) should be used to clean a camera body?
1. A soft tissue and cleaning fluid
 2. Cotton swab and water
 3. Silicon cloth or soft chamois
 4. Soft cloth and isopropyl alcohol

- 10-11. All photographic equipment used in picture making, other than cameras and lenses, is referred to by what terminology?
1. Photographic aids
 2. Camera accessories
 3. Non-optic material
 4. Camera bag items

IN ANSWERING QUESTIONS 10-12 THROUGH 10-14, SELECT FROM THE LIST BELOW THE PHRASE THAT DESCRIBES OR APPLIES TO THE EQUIPMENT LISTED IN COLUMN A. NOT ALL RESPONSES ARE USED.

- A. Glass optical element dyed to absorb colors selectively.
- B. Shades used to keep sunlight from striking the front of a lens.
- C. Devices used to increase light efficiency.
- D. Device that automatically advances exposed film.

10-12. Motor drives.

1. A
2. B
3. C
4. D

10-13. Filters.

1. A
2. B
3. C
4. D

10-14. Lens hoods.

1. A
2. B
3. C
4. D

10-15. The type of lighting you should use to bring out texture and provide depth to the subject is known by what terminology?

1. Frontlight
2. Backlight
3. Light from directly above or below
4. Sidelight

10-16. A photojournalist often uses electronic flash for which of the following purposes?

1. To fill in shadow areas
2. To stop a subject's motion
3. To increase illumination
4. All of the above

10-17. Which of the following is NOT a primary color?

1. Red
2. Blue
3. Green
4. Cyan

10-18. You are taking a black and white picture of a blonde child standing on a green lawn. She is wearing a pale yellow dress. You can make a more natural looking photo and make the yellows and greens a darker gray by using what type of filter?

1. Blue
2. Yellow
3. Green
4. Red

10-19. You want to photograph an old map that has the important boundaries drawn with red ink. The marks are rather faint in color, so to darken them, you use a filter in what complimentary color?

1. Yellow
2. Red
3. Cyan
4. Magenta

10-20. The filter factor, that affects the amount of exposure needed, depends partly on which of the following factors?

1. The color of the filter
2. The latitude of the film
3. The intensity of the light source
4. The aperture setting on the camera

10-21. You are using a light red filter with a factor of 8.0 in daylight. The exposure should be increased by, (a) how much, (b) how many stops?

1. (a) 2 times; (b) 2 stops
2. (a) 4 times; (b) 3 stops
3. (a) 8 times; (b) 3 stops
4. (a) 8 times; (b) 4 stops

10-22. What term denotes the amount of light that acts upon a photographic film?

1. Intensity
2. Sensitivity
3. Reflection
4. Exposure

10-23. What technical error is responsible for ruining more photographs than any other?

1. Wrong filter selection
2. Incorrect exposure
3. Improperly operating flash equipment
4. Wrong film selection

10-24. Which of the following terms expresses the formula for exposure?

1. Intensity x time
2. Sensitivity x time
3. Intensity x film speed
4. Time divided by intensity

10-25. All of the following are factors that govern correct film exposure time EXCEPT for which one?

1. The size of the lens opening
2. The shutter speed
3. The intensity and nature of the light
4. The sensitivity of the film

10-26. What term defines the range between the minimum and maximum satisfactory exposures of film?

1. Block
2. Sensitivity
3. Latitude
4. Intensity

10-27. Film speed is a measure of what film characteristic?

1. Maximum development time
2. Sensitivity to color
3. Sensitivity to light
4. Minimum development time

10-28. What designation is given the universal expression for uniform film-speed standards?

1. USS
2. UEV
3. ISO
4. DIN

10-29. What type of color film is identified by the suffix "color"?

1. Slide film
2. Print film
3. Reproduction paper
4. Transparencies

10-30. Which of the following f/numbers is NOT a major step?

1. f/1.4
2. f/2.8
3. f/4.5
4. f/5.6

10-31. Which of the following f/stops allows the least amount of light to reach the film?

1. f/5.6
2. f/8
3. f/22
4. f/45

10-32. Increasing the diaphragm control one full stop requires doubling the time of exposure. What effect does that setting change have on the aperture opening and the exposure?

1. It increases the aperture opening and doubles the exposure
2. It decreases the aperture opening and halves the exposure
3. It decreases the aperture opening but does not change the exposure
4. It increases the aperture opening but does not change the exposure

10-33. To stop movement or action in a picture, you should consider all EXCEPT which of the following details?

1. The relative movement of the subject
2. The subject's direction of movement
3. The camera-to-subject distance
4. The depth of field

10-34. Depth of field depends on all EXCEPT which of the following factors?

1. The focal length of the lens
2. The lens aperture
3. The distance focused on
4. The sensitivity of the film

10-35. With a given camera and lens system, what factor affecting the depth of field can NOT be changed by the camera person?

1. The lens opening
2. The focus distance
3. The focal length of the lens

IN ANSWERING QUESTIONS 10-36 THROUGH 10-41, ASSUME THAT THE SUBJECT IS 25 FEET FROM THE CAMERA AND IS MOVING IN THE DIRECTION AS DESCRIBED IN FIGURE 11-21 OF THE TEXTBOOK. SELECT THE RESPONSE OF THE MINIMUM SHUTTER SPEED SETTING FOR EACH ACTION USED AS THE QUESTION.

10-36. A base runner in a baseball game running at right angles to the line of sight of the camera.

1. 1/125 sec
2. 1/250 sec
3. 1/500 sec
4. 1/1000 sec

10-37. A boy riding a bicycle toward you at about 8 miles per hour.

1. 1/125 sec
2. 1/250 sec
3. 1/500 sec
4. 1/1000 sec

10-38. A horse galloping toward you in a diagonal direction.

1. 1/125 sec
2. 1/250 sec
3. 1/500 sec
4. 1/1000 sec

10-39. An automobile accelerating in front of and away from you at about 35 miles per hour.

1. 1/125 sec
2. 1/250 sec
3. 1/500 sec
4. 1/1000 sec

10-40. A football play taken at right angles to the motion.

1. 1/125 sec
2. 1/250 sec
3. 1/500 sec
4. 1/1000 sec

10-41. A motor boat moving away from you in a diagonal direction at about 8 miles per hour.

1. 1/125 sec
2. 1/250 sec
3. 1/500 sec
4. 1/1000 sec

10-42. Which of the following data is NOT required on a Navy photo job order?

1. Number of views needed
2. Description of the job to be photographed
3. Type of film to use
4. Size and finish of prints

10-43. A system that allows you to take and store photos electronically is known by what terminology?

1. PC compatible
2. Digital imagery
3. Still video photography

10-44. Using your computer, you can send a digital photograph to all EXCEPT which of the following outlets?

1. Another computer via modem
2. A hard drive for storage
3. A printer for a print
4. A darkroom for further processing

10-45. Which of the following is a disadvantage of using a still digital camera?

1. The image cannot be cropped
2. The camera needs up to eight seconds between shots
3. The photos are black and white only
4. You must download photos when the memory is full

10-46. Photojournalists normally communicate by which of the following methods?

1. Photographs only
2. Carefully worded copy only
3. A harmonious combination of photographs and words
4. One dynamic photograph that portrays the essence of a news story

10-47. What is the primary objective of a photojournalist?

1. To write interesting captions that adequately describes the photographs
2. To communicate primarily through well-written copy
3. To tell the Navy story in whatever form that best suits a given event or situation
4. To communicate primarily through photographs

IN ANSWERING QUESTIONS 10-48 THROUGH 10-50, SELECT FROM THE LIST BELOW THE HISTORICAL PERIOD IN WHICH PHOTOJOURNALISM WAS USED AS DESCRIBED IN THE QUESTION. NOT ALL RESPONSES ARE USED.

- A. Spanish American War
- B. Civil War
- C. World War II
- D. Korean

10-48. Professional photographers used to record war as history and to present realistic scenes designed to shock.

1. A
2. B
3. C
4. D

10-49. Progress in producing film, more rapid transportation and photoengraving.

1. A
2. B
3. C
4. D

10-50. Photojournalists sought to interpret the war by concentrating on individuals.

1. A
2. B
3. C
4. D

ASSIGNMENT 11

Textbook Assignment: “Basic Photojournalism,” chapter 12, pages 12-5 through 12-26, and “Broadcast Writing and Radio Operations,” chapter 13, pages 13-1 through 13-9.

11-1. News photographs should NOT be used to accomplish which of the following objectives?

1. Supplement feature stories
2. Support headlines and spot news stories
3. Present a different idea to each person who sees the photograph
4. Act as independent stories when accompanied by a cutline

11-2. Almost all press photography is classified into what two categories?

1. Movies and stills
2. Spot news and features
3. Advance news and spot news
4. Hometown news and spot news

11-3. The spot news photo differs from a feature photo in that the spot news photo is affected by what other factor?

1. It is unrehearsed
2. It requires extensive planning
3. It permits the photographer to use lighting to establish a desired mood
4. It requires selection and posing of the subject for an effective shot

11-4. When you plan photographic coverage of a news event, which of the following goal(s) should you attempt to achieve?

1. Creative impressions through the use of people
2. Pictures that tell a story within themselves, when necessary
3. Simplicity and the human element
4. All of the above

11-5. Which of the following is NOT an effective technique in planning pictorial coverage of a news event?

1. Preparing outlines and identification for personnel who you plan to photograph
2. Planning the inclusion of real or implied action in the shot
3. Preparing a complete shooting schedule and sticking to it
4. Planning your shots to show only emotions or attitudes appropriate to the event

11-6. The reason(s) a planned photo feature will interest a particular audience should be listed in which of the following part of a photojournalist's shooting script?

1. First part only
2. Second part only
3. Third part only
4. Anywhere, depending on your preference

**IN ANSWERING QUESTIONS 11-7
THROUGH 11-9, SELECT FROM THE LIST
BELOW THE TECHNIQUE OF GOOD
SCRIPT SHOOTING THAT IS BEST
DESCRIBED BY THE DEFINITION GIVEN AS
THE QUESTION. NOT ALL RESPONSES ARE
USED.**

- A. Closeup
- B. Long shot
- C. Medium shot
- D. Natural shot

11-7. A shot that is the same as the eye receives.

- 1. A
- 2. B
- 3. C
- 4. D

11-8. A shot that shows greater detail than the eye receives.

- 1. A
- 2. B
- 3. C
- 4. D

11-9. A shot that shows the subject in its entirety and relates it to its surroundings

- 1. A
- 2. B
- 3. C
- 4. D

11-10. In a picture story layout, the lead picture can be identified by which of the following factors?

- 1. It's the first picture in the sequence
- 2. It's the picture that contains the essence of the story
- 3. It's referred to directly in the cutline

11-11. Assume that you are assigned to furnish regular photo coverage for the public affairs office. To be ready for this duty at all times, you should perform all except which of the following actions?

- 1. Have a camera and accessories assigned for your exclusive use
- 2. Clean and test your equipment regularly
- 3. Keep your equipment assembled in one place
- 4. All the above

11-12. Of the following attributes, which is the most difficult and important for a good news photographer to cultivate?

- 1. Mastering the mechanics of photography
- 2. Developing an inquisitive nature
- 3. Gaining a self-confident attitude
- 4. Learning to work with sureness, deftness and thoroughness

11-13. When shooting good composition, you should give primary consideration to what element?

- 1. Creating the illusion of depth to the scene
- 2. Selecting the lighting conditions
- 3. Properly placing the subject within the area of the photo
- 4. Selecting the proper supporting elements of the main subject

11-14. To keep composition simple while maintaining interest, you should use which of the following procedures?

1. Include several objects of equal interest
2. Include as many lines and shapes as possible
3. Use numerous objects scattered at random
4. Use a single object with less conspicuous supporting elements

11-15. By portraying supporting elements in a simple composition, you achieve what objective?

1. Accentuate the main idea of the photograph
2. Separate the subject into several interesting ideas
3. Eliminate empty spaces in the photograph
4. Eliminate the need of taking more than one shot of the scene

11-16. Assume that you are assigned to photograph the Naval station's new swimming pool to accompany a story about it in a local newspaper. Which of the following details is most likely to detract from the intended point of interest?

1. A number of spectators around the pool watching the water activities
2. The lines of the sidewalks in the recreation area tend to point toward the pool
3. The bright reflection on the water is in sharp contrast to the dark trees in the background

11-17. Where may the point of interest be located when you apply the rule of thirds?

1. In any one of the nine areas formed by the vertical and horizontal lines
2. In only the center area formed by the vertical and horizontal lines
3. In any of the three areas formed between the two horizontal and vertical lines
4. At any one of the intersections formed by the horizontal and vertical lines

11-18. Which of the following scenes describes the best use of a leading line?

1. A winding path beginning in the center foreground and leading to a cottage, the intended point of interest, at the top center of the picture
2. A waterfall, the point of interest, in the upper left of the picture produces a small stream flowing diagonally to the lower right foreground
3. A street beginning in the lower left corner of the scene leads to the point of interest, a mansion, in the upper right corner. The street has two intersections and several parked cars.
4. A narrow river flows from the upper left of the picture to the lower right. An old grist mill, the intended point of interest, is situated on the bank of the river in the upper one-third of the scene

- 11-19. To suggest the great height of a building effectively, you should use which of the following techniques?
1. Tilt the camera upward from a low angle
 2. Take a downward shot from a taller building
 3. Include a nearby tree for a framing effect
 4. Take an eye-level shot at sunrise or sunset so the light is coming from a low angle

IN ANSWERING QUESTIONS 11-20 THROUGH 11-24, SELECT FROM THE LIST BELOW THE COMPOSITIONAL LINE THAT ACHIEVES THE EFFECT GIVEN IN THE QUESTION. MAY BE USED MORE THAN ONCE.

- A. Curved
- B. Diagonal
- C. Horizontal
- D. Vertical

11-20. Action.

1. A
2. B
3. C
4. D

11-21. Dignity.

1. A
2. B
3. C
4. D

11-22. Beauty.

1. A
2. B
3. C
4. D

11-23. Tranquility.

1. A
2. B
3. C
4. D

11-24. Strength.

1. A
2. B
3. C
4. D

11-25. The term “weight” in the discussion of a balanced composition has what meaning?

1. The relative size of an object
2. The amount of light reflected by the object
3. The object’s size, shape, tone and location
4. The actual weight of an object in relation to a standard weight

11-26. What is the most critical factor in good action photography?

1. Timing
2. Perspective
3. Composition
4. Tone

IN ANSWERING QUESTIONS 11-27 THROUGH 11-31, SELECT FROM THE LIST BELOW THE TYPE OF PICTURE STORY USED FOR THE EXAMPLE GIVEN AS THE QUESTION. RESPONSES MAY BE USED MORE THAN ONCE.

- A. Pure picture
- B. Photo text combination
- C. Picture story within text story
- D. Illustrated text

- 11-27. Pictures that tell the main story supplemented with some related information.
- 1. A
 - 2. B
 - 3. C
 - 4. D
- 11-28. A series of pictures selected to stand alone in telling a story.
- 1. A
 - 2. B
 - 3. C
 - 4. D
- 11-29. Pictures of Navy scenes chosen to give a nautical effect to a brochure.
- 1. A
 - 2. B
 - 3. C
 - 4. D
- 11-30. Pictures selected to tell a complete story and used with a text that presents a separate but related story.
- 1. A
 - 2. B
 - 3. C
 - 4. D

- 11-31. Pictures chosen to attract attention and introduce a story.
- 1. A
 - 2. B
 - 3. C
 - 4. D
- 11-32. What type of picture story is the most difficult to develop?
- 1. Picture-text combination
 - 2. Pure picture story
 - 3. Picture story within text
 - 4. Illustrated text
- 11-33. What are the two approaches that a photojournalist may apply to a subject?
- 1. Perspective and subjective
 - 2. Subjective and objective
 - 3. Objective and perspective
 - 4. Subjective and interpretive
- 11-34. Photojournalists attempt to portray their feelings of the subject to the viewer by what approach?
- 1. Interpretive
 - 2. Objective
 - 3. Subjective
 - 4. Perspective
- 11-35. In general, you should NOT take informal portraits of subjects in which of the following locations?
- 1. Their work areas
 - 2. A studio
 - 3. Their homes
 - 4. In recreational areas

- 11-36. What parts of the subject are important in the informal portrait?
1. The hands and face
 2. The shoulders and head
 3. The chin and mouth
 4. The mouth and eyes
- 1-37. Which of the following is NOT a technical requirement of a good news photograph?
1. Important details well lighted and emphasized
 2. Good composition consisting of leading lines and based on the rule of thirds
 3. Enough contrast so important halftones will not be lost in reproduction
 4. Sharp focus on the main points of interest
- 11-38. Which of the following groups of words lists the elements of radio writing?
1. Music, conflict and voice
 2. Sound, music and voice
 3. Conflict, sound and voice
 4. Conflict, music and voice
- 11-39. What is the most important element of radio writing?
1. Sound
 2. Conflict
 3. Voice
 4. Music
- 11-40. According to radio writers, the backbone of interest in writing is which of the following techniques?
1. Pacing and timing
 2. Aural sense appeal
 3. Conflict
 4. Rapid getaway
- 11-41. Broadcast copy with all unnecessary words trimmed away is writing that adheres to which of the following principles?
1. Clarity
 2. Conciseness
 3. Correctness
 4. Conversation
- 11-42. The hallmark of broadcast journalism as a writing art is that copy must have what element?
1. Color
 2. Conversational tone
 3. Accuracy
 4. Interest
- 11-43. Which of the following statements is NOT a broadcast writing rule concerning abbreviations?
1. Who
 2. What
 3. When
 4. Why
- 11-44. In introducing the name of an individual into a news story, which of the following examples indicates the recommended style of use?
1. John Smith, city councilman
 2. The Honorable Joseph Sims, Mayor of Fort Worth
 3. Baseball great Joe DiMaggio
 4. Caspar Weinberger, Secretary of Defense

- 11-45. Which of the following statements is a recommended rule for broadcast writing?
1. Ignore colorful words in hard news copy
 2. Use a person's middle initial, when available, in all copy
 3. Use contractions whenever possible
 4. Use numbers whenever possible at the beginning of a lead to catch listener interest
- 11-46. Which of the following statements is NOT a broadcast writing rule concerning abbreviations?
1. Avoid starting a sentence with an abbreviation
 2. When in doubt about using an abbreviation, write it out
 3. The use of abbreviations for most military installations is permissible
 4. Never abbreviate the names of states
- 11-47. "She sells seashells by the seashore" is an example of which of the following grammatical terms?
1. Alliteration only
 2. Sibilants only
 3. Both alliteration and sibilants
 4. Homonyms
- 11-48. A fund drive netted \$10,421.10. How should that amount appear when included in a radio news release on the drive?
1. \$10,000
 2. \$10,421.10
 3. 10-Thousand-400 Dollars
 4. Ten Thousand, Four Hundred Dollars
- 11-49. What verb tense is the most effective for broadcast news?
1. Present tense only
 2. Past tense only
 3. Future tense only
 4. The one most natural to a given situation
- 11-50. Which of the following sentences is written in the active voice?
1. The speech was delivered by Dr. Smith
 2. The speech will be delivered by Dr. Smith
 3. Dr. Smith delivered the speech
- 11-51. As a general rule of thumb, you should keep broadcast copy sentences within a maximum length of how many words?
1. 14
 2. 20
 3. 25
 4. 40
- 11-52. Which of the following styles is best for most radio writing?
1. Formal
 2. Forceful
 3. Conversational
 4. Impersonal
- 11-53. Broadcast copy is constructed to allow for easy editing by deleting sentences from the bottom up.
1. True
 2. False
- 11-54. Question and quotation leads should be avoided in hard news stories.
1. True
 2. False

11-55. What primary factor governs the length of most radio news stories?

1. Contents
2. Time
3. Announcer discretion
4. Commercial value

ASSIGNMENT 12

Textbook Assignment: “Broadcast Writing and Radio Operations,” chapter 13, pages 13-9 to 13-30; “Television,” chapter 14, pages 14-1 to 14-29; and “Radio and Television Interviewing,” chapter 15, 15-1 through 15-8.

12-1. Radio listeners should be alerted to quoted material in the body of a news story by the use of the word “quote” preceding the remarks and the word “unquote” following the statement.

1. True
2. False

12-2. For which of the following reasons is the hyphen used in broadcast copy?

1. To help announcers phrase difficult words
2. To instruct announcers to pronounce individual elements of a word distinctly
3. Both 1 and 2 above
4. To tell announcers to pause a bit longer than at a corona

12-3. The body of the broadcast news story should be developed in which of the following patterns?

1. Chronological, descending importance or expanding the five Ws
2. Upright pyramid, ascending importance or expanding the five Us
3. Chronological, inverted pyramid or suspense building
4. Upright pyramid, inverted pyramid or ascending importance

12-4. In writing the body of a broadcast story, which of the following rules apply?

1. Repeat all names used in the lead
2. Give complete identification of persons named in the lead
3. Save one or more of the important facts for a punch close
4. Present the most important facts first

IN ANSWERING QUESTIONS 12-5 THROUGH 12-6, SELECT FROM THE LIST BELOW THE PUNCTUATION MARK THAT SERVES THE FUNCTION DESCRIBED IN THE QUESTION. NOT ALL RESPONSES ARE USED.

- A. Comma
- B. Dash
- C. Parentheses
- D. Hyphen

12-5. Indicates a pause shorter than that of a period.

1. A
2. B
3. C
4. D

12-6. Sets off information for an announcer that is not to be read aloud.

1. A
2. B
3. C
4. D

- 12-7. When you type broadcast copy, your typewriter margin should be set for an average of how many spaces per line?
1. 30
 2. 45
 3. 60
 4. 75
- 12-8. When broadcast copy is prepared correctly, approximately how many lines of type equal 30 seconds of reading time by an average announcer?
1. 2 to 4
 2. 7 to 8
 3. 11 to 12
 4. 14 to 16
- 12-9. Approximately how many words make up a 60-second story read by an average announcer?
1. 50
 2. 100
 3. 150
 4. 200
- 12-10. Besides the slugline and the type of release submitted, what information should be contained in the four-unit heading of a broadcast script?
1. Name of writer and telephone number
 2. Date the copy is written and the length of the copy
 3. Brief summary and length of the copy
 4. Length of the copy and the date the copy is to be released
- 12-11. Which of the following practices applies to in-house broadcast copy?
1. Copy should be absolutely clean
 2. The same copy-editing marks as those used by the print media are used by broadcasters
 3. Broadcast editing methods are used
 4. No special concern is paid to the appearance of broadcast copy
- 12-12. What are the forms of spot announcements?
1. Selling and appeal
 2. Information and selling
 3. Attention and information
 4. Information and action
- 12-13. Which of the following elements describe the three-pronged approach to structuring a selling spot announcement?
1. Research, target and delivery
 2. Attention, audience and activity
 3. Estimate, energize and execute
 4. Attention, appeal and action
- 12-14. What important step in a selling spot is unnecessary in an information spot?
1. The attention-getting step
 2. The audience-targeting step
 3. The call for audience action step
 4. The audience research step

A.	Armed Forces Day is scheduled for May 13 and 14.
B.	Exciting exhibits and demonstrations will be held at Naval Air Station North Island.
C.	Admission is free.
D.	The program begins on Saturday the 14th at 1245.
E.	This is a chance to get a first-hand look at over a thousand exhibits of our latest military equipment, including our newest missile and supersonic aircraft.
F.	Ample free parking is available for 25,000 vehicles.
G.	Additionally, there will be aerial demonstrations by the Armed Forces; acrobatic flying by the Navy's Blue Angels and the Air Force's Thunderbirds; a simulated attack on an enemy position by Army Ranger units; plus a demonstration of Marine Corps invasion techniques using helicopters.

Figure 12-A

IN ANSWERING QUESTIONS 12-15 THROUGH 12-18, REFER TO FIGURE 12-A AND THE FOLLOWING INFORMATION.

In a telephone interview with the Chairman of the Armed Forces Day program for your area, you obtained the information in figure 12-A above. Your PAO wants you to write a spot announcement on the program for broadcast over local commercial radio stations.

- 12-15. Which of the following examples of sentence F is the preferred form for radio spot announcements?
1. The base has available parking facilities for an estimated 25,000 vehicles
 2. Ample free parking is available for 25 thousand vehicles
 3. Ample free parking is available for twenty-five thousand cars
 4. Parking facilities for 25 thousand cars is available, according to the Chairman of the Armed Forces Day Committee
- 12-16. What changes should you make to sentence D for the spot announcement?
1. Spell out the numerals for the date "14th"
 2. Spell out the numerals for the hours only
 3. Spell out the numerals for the dates and hours
 4. Use "12:45 p.m." instead of "1245."
- 12-17. What changes should you make in sentence G?
1. Rewrite it in several short sentences
 2. Add more details
 3. Simplify the vocabulary used
 4. Shorten it
- 12-18. What is the best way for you to rephrase the information in line B so the sentence is in spot announcement style?
1. The public is invited
 2. Everyone is invited
 3. You're invited
 4. All of you are invited

- 12-19. In which part of a spot announcement would you put the following sentence: “Navy fighter planes and Army Rangers are invading NAS North Island”?
1. At the beginning
 2. Immediately after the beginning
 3. In the body of the message
 4. After the message
- 12-20. Assume that you are preparing radio copy for a 30-second recruiting spot that will include 10 seconds of “Anchors Aweigh” music. You should limit your copy to approximately how many words?
1. 50
 2. 75
 3. 100
 4. 150
- 12-21. How should you indicate to the radio station that a spot announcement should not be used indefinitely?
1. Attach a note to the copy saying new material will be furnished every two weeks
 2. Include a cut-off time and “kill date” with the spot
 3. When you hand the radio copy to the news manager, tell him when you will replace it
 4. When you telephone the spot to the station, tell the announcer how many times it may be read
- 12-22. In marking broadcast copy, the single slash mark (/) tells you to do which of the following actions?
1. Make a full stop and take a big breath
 2. Pause and take a short breath
 3. Pause for emphasis, take no breath
 4. Read the next passage carefully due to tricky pronunciation
- 12-23. Which of the following types of production music is used to set the mood for the production?
1. Fill
 2. Background
 3. Theme
 4. Bridge
- 12-24. Which control on the audio console should NEVER be adjusted by studio announcers?
1. AFRTS/Network selector button
 2. Output selector button
 3. Audition/Program master gain control
 4. Monitor selection switch
- 12-25. In which of the following production phases should you review the script for unfamiliar words or names?
1. Preproduction
 2. Production
 3. Postproduction
- 12-26. Which of the following types of special effects adds depth to sounds and is used to enhance the voice?
1. Filtering
 2. Equalization
 3. Reverb
 4. Phasing
- 12-27. Which of the following components is the heart of the TV system?
1. Control room
 2. CCU
 3. Camera
 4. VCR

- 12-28. What causes “snow” on a TV picture?
1. Too little light on the subject
 2. A camera that needs adjusting
 3. A CCU out of sync with the camera it is mated with
 4. Low signal strength on the cable

IN ANSWERING QUESTIONS 12-29 THROUGH 12-31, SELECT FROM THE LIST BELOW THE TYPE OF TV AREA THAT MATCHES THE DESCRIPTION IN THE QUESTION. RESPONSES MAY BE USED MORE THAN ONCE.

- A. Essential area
- B. Aspect ratio
- C. Scanning area

- 12-29. All of the area seen by the television camera.

1. A
2. B
3. C

- 12-30. Area seen by the TV viewer.

1. A
2. B
3. C

- 12-31. Handling area that provides protection for a picture or other artwork if dropped.

1. A
2. B
3. C

- 12-32. Which, if any, of the following areas of limitation are required by each television visual?

1. Scanning and border
2. Essential and scanning
3. Aspect ratio
4. None of the above

- 12-33. The aspect ratio of television cameras and television receivers means they are designed in which of the following shapes?

1. Three units wide to three units high
2. Three units high to four units wide
3. Four units high to four units wide
4. Four units high to three units wide

- 12-34. The portion of a picture seen by a television camera that does not appear on television receivers is known by what term?

1. Transmission loss
2. Overscan
3. Essential area
4. Vertical filter

- 12-35. Visual for television should be designed using which of the following elements?
1. Simplicity
 2. Format
 3. Action
 4. Brevity
- 12-36. Which of the following color backgrounds for television visuals causes glitter and flare during camera movement?
1. Blue
 2. Black
 3. Green
 4. White
- 12-37. The brightest area of a television visual is usually no more than how many times as bright as the darkest area?
1. 10 times
 2. 15 times
 3. 20 times
 4. 25 times
- 12-38. Which of the following visual effects creates color vibrations that disrupt the picture?
1. Blocks
 2. Stripes
 3. Single color backgrounds
 4. Horizontal lines
- 12-39. Lettering for television visuals should be kept to what number of lines?
1. 3 or 4
 2. 5 or 6
 3. 7 or 8
 4. 9 or 10
- 12-40. Which of the following television studio production microphones picks up sound in all directions?
1. Omnidirectional
 2. Bidirectional
 3. Unidirectional
- 12-41. Where should a studio boom microphone be placed on a studio set?
1. Above and behind the sound source
 2. Above and top of the side of the sound source
 3. Above and directly over the sound source
 4. Above and directly in front of the sound source
- 12-42. What type of studio microphone is most valuable for audience participation programs?
1. Boom
 2. Hand-held
 3. Lavalier
 4. Desk
- 12-43. Radio frequency (RF) interference could cause audio problems for what type of microphone?
1. Hand-held
 2. Wireless
 3. Lavalier
 4. Boom
- 12-44. What portion of the television screen does studio lighting affect the most?
1. Color separation
 2. Shadows
 3. Illumination
 4. Camera impulses

12-45. Color temperatures of studio lighting is measured in what standard degree style?

1. Contrast
2. Impulse
3. Kelvin
4. Heat

12-46. What is the main studio light for a production set using three-point lighting?

1. Fill
2. Base
3. Back
4. Key

12-47. Which of the following elements is the only true means by which a viewer can adjust the colors on their TV screens?

1. Contrast
2. Brightness
3. Skin tones
4. Shadows

12-48. Portable light kits for ENG work should include all **EXCEPT** which of the following items?

1. Tripods
2. Battery packs
3. Scrims
4. Color scales

12-49. Television sets are normally designed based on which of the following principles?

1. The number of television productions that use the set
2. The number of people on the set
3. The size limitations of the studio
4. The number of cameras to be used in the production

12-50. What type of television set uses abstract shapes or textures to create character or mood?

1. Natural
2. Realistic
3. Futuristic
4. Fantasy

12-51. Television studio camera shots are classified by all **EXCEPT** which of the following terms?

1. ELS
2. MCU
3. ECU
4. BCM

12-52. Movement in front of the camera, usually by the talent, is referred to as what type of movement?

1. Primary movement
2. Secondary movement
3. Tertiary movement

- 12-53. What camera movement will provide the viewer with a high or low perspective of the subject?
1. Pan
 2. Dolly
 3. Pedestal
 4. Tilt
- 12-54. If the ship's homecoming calls for several shooting script closeup shots of persons waiting on the pier and long shots of the ship maneuvering to its berth, how will the close-ups most likely be used in the finished product?
1. As cut-ins
 2. As cutaways
 3. As compilations
 4. As cut-ups
- 12-55. A series of shots shows a Sailor on one of the ships searching the crowd for familiar faces, then waving and finally running down the bow to greet his family. If these scenes were interspersed with shots of his family responding to his wave, then moving closer to the bow as he approached, this method used by the film or video editor would be an example of which of the following transitional devices?
1. Cutaway
 2. Cut-in
 3. Both 1 and 2 above
 4. Crosscutting
- 12-56. When writing the script to accompany a taped or filmed news release, you should observe which of the following practices?
1. Use the pictures to supplement the narration
 2. Let the narration supplement the picture
 3. Never include in the narration details that are presented by the picture
 4. Never include in the narration details not presented by the picture
- 12-57. Which of the following television production personnel is responsible for the special effects bank?
1. Director
 2. Floor manager
 3. Audio switcher
 4. Video switcher
- 12-58. Which of the following television production personnel acts as a liaison between the director and the talent?
1. Floor manager
 2. Camera operator
 3. Audio switcher
 4. Video switcher
- 12-59. What floor manager's hand signal is used to tell the talent to wrap it up?
1. Arm and hand rotating above the head
 2. The letter T formed with both hands
 3. A grabbing motion ending in a fist
 4. Hand across the throat in a slashing motion

ASSIGNMENT 13

Textbook Assignment: “Public Affairs Office Operations,” chapter 16, pages 16-1 through 16-21; and “Home Town News,” chapter 17, pages 17-1 through 17-12.

- 13-1. All **EXCEPT** which of the following are departments within a public affairs office?
1. Media relations
 2. Internal relations
 3. Community relations
 4. Administration
- 13-2. What office or individual is not really responsible for writing command or flag officer’s biographies?
1. Administration office
 2. Public affairs office
 3. The flag officer concerned
 4. The flag secretary
- 13-3. What public affairs file contains information about local military beat reporters?
1. Command
 2. Media relations
 3. Community relations
 4. Future
- 13-4. What public affairs file could contain general background material on the Navy, such as “Navy Fact File”?
1. Command
 2. Project
 3. Speech
 4. Clip
- 13-5. In what public affairs file would you keep query sheets documenting the release of information orally?
1. Media relations
 2. Project
 3. Alibi
 4. News release
- 13-6. All **EXCEPT** which of the following items should be found in a welcome aboard booklet?
1. Mission statement
 2. General unclassified command facts
 3. Biography of all senior officers
 4. Brief command history
- 13-7. What is the most logical order for the portion of a command presentation that describes your unit?
1. Strict chronological order based on when a department or section was established
 2. Straight from the organizational chart, starting at the top and working down
 3. Straight from the organizational chart, starting at the bottom and working up
 4. Start with the most important department and end with the least important

13-8. All **EXCEPT** which of the following are rules for a good command presentation?

1. Avoid Navy acronyms
2. Keep sentences short
3. Keep charts and graphs simple
4. Use a variety of styles for “word” slides

13-9. What is the recommended length for command presentations?

1. 5 to 10 minutes
2. 10 to 12 minutes
3. 15 to 20 minutes
4. 20 to 25 minutes

13-10. In what paragraph of a flag officer’s biography would you find information about marital status and family members?

1. First only
2. Any middle paragraph only
3. Last only
4. Any paragraph

13-11. The standard biography format has what size margins?

1. One-half inch
2. Three-quarter inch
3. One inch
4. One and one-half inch

13-12. Which of the following titles in a flag officer’s biography is correct?

1. “...commanding officer”
2. Fred Lemming, Commanding Officer
3. Training Officer
4. Fred Lemming, an Unrestricted Line Officer

13-13. What office or authority owns an official flag officer’s biography and therefore has the ultimate say over its contents?

1. The public affairs office
2. The flag officer concerned
3. The Navy
4. The flag secretary

13-14. What office or authority determines the newsworthiness of Navy news?

1. The public affairs office
2. The commanding officer
3. The media it is released to
4. The nearest public affairs center

13-15. Which of the following media is the backbone of public information today?

1. Newspapers
2. Television
3. Radio
4. News magazines

13-16. All **EXCEPT** which of the following are advantages of radio as a mass communicator?

1. Immediacy
2. Longevity
3. Aural appeal
4. Mobility

13-17. What media type is the most potent?

1. Newspapers
2. Radio
3. Television
4. News magazines

13-18. You have received a request from *Time* magazine for help in completing an article about your command. How should you respond to this request?

1. Provide the information and file a copy in your alibi file
2. Provide the information and forward a copy to CHINFO
3. Forward the request to CHINFO for approval before providing any information
4. Forward the request to your commanding officer before providing any information

13-19. What type of publication is the Public Affairs Communicator?

1. News magazine
2. Consumer magazine
3. Internal memorandum
4. Trade journal

13-20. All **EXCEPT** which of the following are key words for dealing with the media?

1. Accuracy
2. Promptness
3. Politeness
4. Honesty

13-21. Which of the following is your most valuable asset when dealing with the media?

1. Accuracy
2. Politeness
3. Honesty
4. Promptness

13-22. Which of the following statements is true of reporters traveling aboard Navy ships and aircraft?

1. Travel may be provided when commercial transportation is available, as long as it is necessary to obtain the news material
2. Reporters may not use shipboard communications facilities
3. Transportation does not have to be in the interest of the DoD or DoN
4. Detailed information about media embarks can be found in chapter 8 of PA Regs

13-23. All **EXCEPT** which of the following should be included in a media information kit?

1. Biographies of senior officers
2. Command photographs
3. Welcome aboard booklets
4. Telephone numbers for the PAO and staff

13-24. In a news release about an upcoming day set aside for the public to visit your base, what phrase should be avoided?

1. General public visitation
2. Open house
3. Everyone invited

13-25. The psychological need for Sailors to be recognized and appreciated is addressed by which of the following programs?

1. Community relations
2. Home Town News
3. Internal information
4. CHINFO Merit Awards

13-26. What is the purpose of the Fleet Home Town News program?

1. To provide servicemembers with current news from their respective hometowns
2. To stimulate recruiting efforts in small towns
3. To provide information on servicemembers to major news media outlets
4. To report the status and achievements of servicemembers to the people in the member's home town

13-27. Home towners are processed and disseminated by which of the following activities?

1. CHINFO
2. FHTNC
3. Individual commands
4. Various hometown news media organizations

13-28. The Navy's Fleet Home Town News Center serves all **EXCEPT** which of the following organizations?

1. The Navy
2. The Coast Guard
3. The Marine Corps
4. The National Health Service

13-29. A servicemember from all **EXCEPT** which of the following areas is able to participate in the Home Town News program?

1. Alaska
2. The Republic of the Philippines
3. Guam
4. American Samoa

13-30. To receive hometown material from the FHTNC, clients must meet which of the following requirements?

1. Agree to publish all material received
2. Request the material through official channels
3. Pay a nominal fee for each item received

13-31. Under most circumstances, individual commands are authorized to submit hometown news directly to which of the following activities?

1. All recognized news media
2. The FHTNC
3. All newspapers within 50 miles of the command

13-32. In which of the following publications can you expect to find detailed information on submitting material to the FHTNC?

1. Fleet Home Town News Guide
2. U.S. Navy Public Affairs Regulations
3. Both 1 and 2 above
4. The AP Styleguide and Libel Manual

13-33. Which of the following blocks must be filled out for the form to be accepted for processing by the FHTNC?

1. Block 17 - signature
2. Block 19 - release number
3. Block 7 - name(s) of parent(s)
4. Block 15 - duties to which assigned

13-34. When 10 or more forms are submitted at the same time to the FHTNC, a releasing authority signature on the cover letter will satisfy the requirement for a signature in block 18 on each of the forms.

1. True
2. False

13-35. All **EXCEPT** which of the following news media have requested and receive home town news material from the FHTNC?

1. Newspaper
2. Radio stations
3. Television stations
4. News magazines

13-36. All **EXCEPT** which of the following categories of stories are processed by the FHTNC?

1. Military achievement
2. Personal achievement
3. Wedding announcements
4. Participation stories

13-37. A hold file is a collection of FHTNC forms that have what condition in common?

1. They are all about individuals who do not want any publicity
2. They are all about the members of a unit whose forms are kept at the FHTNC while that unit is on extended deployment
3. They are all of the forms for sea service personnel participating in the program
4. They are all of the forms held by the public affairs office prior to deployment

13-38. If an individual whose name in a hold file reenlists or is promoted in rate during a deployment, what should the administrator of the unit's hometown news program do?

1. Have the individual fill out a new form and mail it to the FHTNC
2. Notify the FHTNC by message of the event
3. Ask the individual to reconsider his "no publicity" stand
4. Nothing, since the individual has already requested no publicity

13-39. How often should hold files be updated?

1. Once a year
2. Once, midway through the deployment
3. Every 30 days
4. Every 60 days

13-40. Under which of the following circumstances should the FHTNC be an addressee on death or serious injury messages?

1. Only when the dead or injured person's name is listed in the hold file
2. Only when the dead or injured person's name is NOT in the hold file
3. Only when the death or injury was-job related
4. Under all circumstances

IN ANSWERING QUESTIONS 13-41 THROUGH 13-48, SELECT FROM THE LIST BELOW THE STORY CATEGORY IDENTIFIED BY THE QUESTION. RESPONSES MAY BE USED MORE THAN ONCE.

- A. Military achievement
- B. Personal achievement
- C. Participating story

13-41. Reenlistment.

1. A
2. B
3. C

13-42. Earned college degree.

1. A
2. B
3. C

13-43. Reported aboard.

1. A
2. B
3. C

13-44. Received award as Coach of the Year from local little league.

1. A
2. B
3. C

13-45. Port visit of ship.

1. A
2. B
3. C

13-46. Selected as Sailor of the Year.

1. A
2. B
3. C

13-47. Promoted to P02.

1. A
2. B
3. C

13-48. Received Good Conduct Medal.

1. A
2. B
3. C

13-49. A story about one person involved in one event would be submitted to the FHTNC as what type of story?

1. Roster
2. Personal
3. Individual
4. Military achievement

13-50. What is (a) the minimum number of prints and (b) the type of prints required when photographs are submitted to FHTNC?

1. (a) Four (b) black and white wallet size prints
2. (a) Six (b) color wallet size prints
3. (a) Five (b) black and white wallet size prints
4. (a) Four (b) color 8- by 10-inch prints

13-51. For single stories, negatives of any size are accepted by the FHTNC.

1. True
2. False

13-52. Your 90-day logbook should contain what information?

1. Number of releases generated by each form
2. News clippings of stories actually printed off each form
3. Date form was mailed to the FHTNC



MASS COMMUNICATION SPECIALIST (MC)

Module 1



PUBLIC AFFAIRS BASIC TRAINING MANUAL

NAVEDTRA 15010
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February 2011

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Center for Service Support (401) 841-1057 or DSN: 841-1057

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Sailor's Creed

"I am a United States Sailor.

*I will support and defend the
Constitution of the United States of
America and I will obey the orders of
those appointed over me.*

*I represent the fighting spirit of the
Navy and those who have gone before
me to defend freedom and democracy
around the world.*

*I proudly serve my country's Navy
combat team with honor, courage and
commitment.*

*I am committed to excellence and the
fair treatment of all."*

THE UNITED STATES NAVY

GUARDIAN OF OUR COUNTRY

The United States Navy is responsible for maintaining control of the sea and is a ready force on watch at home and overseas, capable of strong action to preserve the peace or of instant offensive action to win in war.

It is upon the maintenance of this control that our country's glorious future depends; the United States Navy exists to make it so.

WE SERVE WITH HONOR, COURAGE, AND COMMITMENT

Tradition, valor, and victory are the Navy's heritage from the past. To these may be added dedication, discipline, and vigilance as the watchwords of the present and the future.

At home or on distant stations, we serve with pride, confident in the respect of our country, our shipmates, and our families.

Our responsibilities sober us; our adversities strengthen us. Service to God and Country is our special privilege. We serve with honor.

THE FUTURE OF THE NAVY

The Navy will always employ new weapons, new techniques, and greater power to protect and defend the United States on the sea, under the sea, and in the air.

Now and in the future, control of the sea gives the United States her greatest advantage for the maintenance of peace and for victory in war.

Mobility, surprise, dispersal, and offensive power are the keynotes of the new Navy. The roots of the Navy lie in a strong belief in the future, in continued dedication to our tasks, and in reflection on our heritage from the past.

Never have our opportunities and our responsibilities been greater.

Center for Service Support

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PREFACE

About this course:

This is a self-study course. By studying this course, you can improve your professional/military knowledge, as well as prepare for the Navy-wide advancement-in-rate examination. It contains subject matter about day-to-day occupational knowledge and skill requirements and includes text, tables, and illustrations to help you understand the information. An additional important feature of this course is its reference to useful information in other publications. The well-prepared Sailor will take the time to look up the additional information.

By enrolling in this self-study course, you have demonstrated a desire to improve yourself and the Navy. Remember, however, this self-study course is only one part of the Navy training program. Practical experience, schools, selected reading, and your desire to succeed are also necessary to successfully round out a fully meaningful training program.

COURSE OVERVIEW: In completing this non-resident training course, you will demonstrate knowledge of the subject matter by correctly answering questions on the following subjects: The military postal service, designations and terminations, mail packaging and acceptance, domestic mail, international mail, registered mail, finance, handling and transportation, claims and inquiries, directory service, equipment and supplies, official mail, audits, reports and inspections.

THE COURSE: This self-study course is organized into subject matter areas, each containing learning objectives to help you determine what you should learn along with text and illustrations to help you understand the information. The subject matter reflects day-to-day requirements and experiences of personnel in the rating or skill area. Also, it reflects guidance provided by Enlisted Community Managers (ECMs) and other senior personnel, technical references, instruction, etc., and either the occupational or Naval standards, which are listed in *Manual of Navy Enlisted Manpower and Personnel Classifications and Occupations Standards*, NAVPERS 18068.

THE ASSIGNMENTS: The assignments that appear in this course are designed to help you understand the material in the text.

COURSE OBJECTIVE

The objective of this course is to provide Mass Communication Specialist (MC) with Public Affairs (PA) information.

INSTRUCTIONS FOR TAKING THE COURSE ASSIGNMENTS

The links and material that you are to study are included in each chapter. Study the material and links carefully before attempting to answer the questions. Pay close attention to tables and illustrations, and read the information in the links.

SELECTING YOUR ANSWERS

Read each question carefully, and then select the BEST answer. You may refer freely to the text. The answers must be the result of your own work and decisions. You are prohibited from referring to or copying the answers of others and from giving answers to anyone else taking the course.

SUBMITTING YOUR ASSIGNMENTS

To have your assignments graded, you must be enrolled in the course with the Non-Resident Training Course Administration Branch. Following enrollment, there are two ways of having your assignments graded:

- Use the Internet to submit your assignments as you complete them.
- Send all the assignments at one time by mail to CPPD, NRTC.

Grading on the Internet: Advantages to Internet grading are as follows:

- You may submit your answers as soon as you complete an assignment.
- You get your results faster.
- In addition to receiving grade results for each assignment, you will receive course completion confirmation once you have completed all the assignments.

To submit your assignment answers via the Internet, go to the following site:

<https://www.courses.netc.navy.mil>

Grading by Mail: When you submit answer sheets by mail, send all of your assignments at one time. Do NOT submit individual answer sheets for grading. Mail all of your assignments in an envelope, which you either provide yourself or obtain from your nearest Educational Services Officer (ESO). Submit answer sheets to the following:

*Commanding Officer
Center for Personal and Professional Development
ATTN: VOLED Det. (NRTC)
6490 Saufley Field Road
Pensacola, FL 32509*

Answer Sheets: Each course includes an answer sheet for your assignments. If you are going to mail in your answer sheets, please make copies of the included answer sheet. Explanations for completing the answer sheets are on the answer sheet.

Follow the instructions for marking your answer on the answer sheet. Be sure that blocks 1, 2, and 3 are filled in correctly. This information is necessary for your course to be properly processed and for you to receive credit for your work.

COMPLETION TIME

Courses must be completed within 12 months from the date of enrollment. This includes time required to resubmit failed assignments.

PASS/FAIL ASSIGNMENT PROCEDURES

You will be given the opportunity to resubmit failed assignments. You may resubmit failed assignments only once. Internet students will receive notification when they have failed an assignment; they may then resubmit failed assignments on the Web site. Internet students may view and print results for failed assignments from the Web site. Students who submit by mail will receive a failing result letter and a new answer sheet for resubmission of each failed assignment.

COMPLETION CONFIRMATION

After successfully completing this course, you can download a copy of your letter of completion on the NRTC Web site:

<https://www.courses.netc.navy.mil>

STUDENT FEEDBACK QUESTIONS

We value your suggestions, questions, and criticisms on our courses. If you would like to communicate with us regarding this course, we encourage you, if possible, to use e-mail. If you write or fax, please use a copy of the Student Comment form that follows this page.

For subject matter questions:

Contact the Center for Service Support, Newport, RI

Email: NWPT_CSS_RTM@navy.mil

Phone: 401-841-1057 or DSN 841-1057

For enrollment, shipping, grading, or completion letter questions:

Email: NRTC@navy.mil

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Students' Comments

Course Title: ____Mass Communication Specialist (MC) Basic Module 1____

NAVEDTRA: 15010 Date: _____

We need some information about you:

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Your comments, suggestions, etc: _____

[illegible]

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CHAPTER 1

THE NAVY MASS COMMUNICATION SPECIALIST

Learning Objective: *Upon completing this chapter, you should be able to do the following:*

- *Identify the major tasks and responsibilities of the Navy mass communication specialist.*
 - *Discuss the personal traits required for one to best perform the duties of an MC.*
 - *Identify the applicable NECs.*
 - *State the purpose of the MC Basic Nonresident Training Course (NRTC).*
-

INTRODUCTION

To the young man or woman choosing a Navy career field, whether for one enlistment or for 30 years, the mass communication specialist (MC) rating offers endless avenues for an imaginative, yet mature, thinker.

The MC rating was born July 1, 2006, when the Navy officially merged four ratings – illustrator draftsman, lithographer, journalist and photographer's mate. Each brought to the new rating a rich history and heritage as well as valuable skill sets.

Many of the duties and responsibilities of today's mass communication specialist rank among Americans' favorite hobbies and pastimes, such as writing, photography and graphic design. The Navy MC learns and practices a distinguished profession and is an official representative of the Navy in public affairs and visual information matters.

As public affairs and visual information experts, MCs present the story of America's Navy to audiences in the Navy and to the rest of the world through a variety of mediums. MCs write and produce print and broadcast journalism news and feature stories for military and civilian newspapers, magazines, television and radio broadcast stations. They capture video and still imagery of military operations, exercises and other Navy events. They serve overseas, on ships, and at stateside commands as photographers, videographers, public affairs specialists, newspaper and magazine staff members, and TV and radio station staff and talent. MCs also create graphic designs in support of the public affairs mission, create and manage official websites, and perform high-speed, high-volume graphic reproduction.

MAJOR TASKS AND RESPONSIBILITIES

In our representative republic, government depends on the consent of the governed. This important principle means that, in the long run, the U.S. government does only what the people want it to do. Therefore, we can have a Navy only if the people know and understand the importance of the Navy and support it.

The Navy, like other services, depends on this country's citizens for the four key tools of its trade — personnel, money, materials and the authority to carry out its mission. As a Navy MC, your main function is to make available the facts about your Navy to the Navy's three main publics —the people at your command, Navy people in general and the people of the United States as a whole.

As written by the current Chairman of the Joint Chiefs of Staff and former Chief of Naval Operations Adm. Mike Mullen: "Effectively communicating with our Sailors, their families and the American people is one of our most important responsibilities. Like the battle for people, this responsibility is one that must be embraced every day. If we don't take the lead in the communication business, we are forced to react to other competing, and in some cases incorrect, messages."

Although the responsibility of communicating the Navy's message to both internal and external audiences lies in the hands of our commanders, the Navy MC successfully completes this mission from the deckplates by delivering the message in a way everyone can understand.

In order to perform these duties, the MC must master verbal, oral and visual communication techniques. He must be a constant reader who is always abreast of current events in and out of the Navy as well as with professional trends from around the visual communication specialty. He must know enough about the Navy to interpret and translate its activities and actions intelligently to the civilian public. In other words, an MC must stay up to date with what ships or units are on deployment, what new technology is being used in the Navy, who is in the chain of command, etc.

As a mass communication specialist, you must have the ability and the desire to learn and grasp new ideas. You must be better than average in your use of the English language, know your way around camera equipment, and be proficient in your computer skills. Your aim is to create news-quality products in minimal time and with minimal need for editing or reproduction.

The major areas in which you will be expected to develop knowledge and skills are audio/visual production, digital imaging, information and newsgathering, multimedia production, photography, print production, planning, public affairs and writing.

As you progress in experience, maturity and service seniority, you likely will become the trusted executive of the public affairs officer (PAO). As such, you will find yourself performing many of the functions of a PAO. This will be particularly true if your boss is a collateral-duty PAO. Collateral duty means that the individual has other assignments that are considered primary duties. In such cases, the collateral-duty PAO's primary responsibilities often allow only minimum time for public affairs work. Therefore, you also must learn the theory and practice of public affairs policy.

A COMMON MISPERCEPTION

There is a tendency for Navy MCs to believe they are part of America's free press and thus part of the investigative photojournalism genre. This notion could not be further from the truth.

Navy MCs are assigned combat camera, visual communication, command information, public information and community relations duties. Navy MCs write releases to tell the Navy story and to respond to queries by the investigative free press. When assigned to command information staffs, MCs may write for civilian enterprise (CE) or command-funded newspapers — what the industry terms "in-house" publications. (*We will discuss in-house publications in subsequent chapters.*)

Just as a writer for commercial industry would not write investigative articles concerning his company for the in-house publication, Navy MCs do not write investigative pieces concerning their own commands or the Navy. Navy MCs may tackle controversial social issues, but they must avoid works that attack or injure, or give the impression of attacking or injuring their commands or the Navy. MCs serve as the window for all Americans to see into the Navy.

The Navy community is much like a company town. Your job within this community is to enhance morale, to increase readiness and productivity, to be the voice of the commanding officer to his community, and to inform, educate and entertain the Navy's internal audience.

PERSONAL TRAITS

The Navy MC must possess certain personal characteristics. Some are general in that they can contribute to success in any rating, but others are an integral part of the public affairs/visual information profession. Appearance, voice, military bearing, courtesy and personality will become more evident as you read and complete this Nonresident Training Course (NRTC), informally known as a rate training manual.

APPEARANCE

Good personal appearance is especially important to the Navy mass communication specialist. Since your duties place you in a position to meet visitors, escort media, interview senior leadership, cover high-level events, and serve as a tour guide, to name a few, impeccable appearance is more necessary than in some other jobs in the Navy. Always make sure every aspect of your personal appearance – from your haircut to the edge dressing on your shoes – is first-rate.

VOICE

Navy MCs must be well spoken; voice and manner of speaking are important. To meet this standard, you should avoid an overly loud voice; but likewise, you should avoid speaking too low or indistinctly. Localisms of vocabulary or an accent may be merely pleasant marks of individuality, or they may be hindrances because they make the speaker hard to understand. If you have conspicuous speech habits of this sort, you should attempt to correct them. Remember, MCs are often the voice of the command, so your attention to the proper pronunciation of words will always be worthwhile.

MILITARY BEARING

All Sailors have an obligation to conduct themselves with dignity and in such a manner as to reflect credit on the naval service. Dignity exists only where the individual has a proper sense of his own worth and of the worthiness of his cause. The person who possesses true dignity also will respect the dignity of others.

Military bearing is dignity within military relationships. It exists when the individual is proud of his military organization and of his part in it. He respects his seniors and is guided by the example of those he admires most among them. He also respects his juniors and provides an example they will be proud to follow. Whether he is squaring his hat, rendering a salute, carrying on the work of his office, or going on liberty, his manner says he is proud of America's Navy and is doing his best to make the Navy proud of him.

More than any other rating in the Navy, MCs interact frequently with senior leaders as well as the civilian community. It is for this reason that your military bearing must be top-notch.

NAVY ENLISTED CLASSIFICATIONS

MCs can be found throughout the Fleet, serving aboard aircraft carriers and large-deck amphibious assault ships, with Seabees, at Defense Media Activities, with combat camera, at shore

facilities, recruiting commands or with the Navy Public Affairs Support Element. And, they support the fleet with a wide variety of skills and expertise. These job skills are categorized as Navy Enlisted Classifications (NECs). NECs are four-digit numbers that indicate special qualifications earned by an individual. The NECs described below are available to MCs.

8143—MOTION MEDIA CAMERAMAN

A motion media cameraman primarily functions as a camera operator who creates controlled and uncontrolled motion media productions, prepares shooting scripts and performs post-production editing. An 8143 MC also acts as a director on small production crews.

To earn the 8143 NEC, you must complete the 33-day Video Production and Documentation course at the Defense Information School (DINFOS).

8144—MOTION MEDIA EDITOR/DIRECTOR

A motion media editor or director serves as the senior editor for motion media productions and combat camera missions and acts as the on-scene crew chief for video and multimedia products. In doing such, an 8144 MC must determine equipment and material requirements, direct action in the production of scenes and episodes, analyze existing scripts and recommend appropriate revisions, determine scene composition, coordinate action of performing personnel, direct audio recording during filming, supervise the preparation of the set, and approve set design and props to be used.

To be an 8144 NEC, you must attend the 10-month advanced motion media program at Syracuse University. This is a selection-only program that requires a submission package. A NAVADMIN released annually outlines submission requirements. Upon completion of the program, graduates earn approximately 30 college credit hours. Through the course, you learn from some of the industry's finest professionals to create professional, high-impact communications and become top-quality storytellers.

8147—PHOTOJOURNALISM SPECIALIST

Sailors with this NEC cover and photograph events of news or documentary interest, while supporting and effectively meeting the public affairs objectives and programs of the military services. They apply layout and design principles, news and feature writing, basic and advanced photographic techniques and production, and demonstrate writing and photographic skills.

To earn this 8147 NEC, you must complete the eight-week Intermediate Photojournalism Course (IPC) offered at DINFOS. The course requires one-year minimum fleet experience as well.

8148—PHOTOJOURNALIST

Sailors with the 8148 NEC photograph newsworthy events, prepare photography in news form, write captions and text for news stories, and maintain liaison with their counterparts in the news media. They also train personnel in photojournalism techniques.

To earn the 8148 NEC, you must attend the 10-month advanced photojournalism course at Syracuse University. As with the 8144 NEC, MCs interested in this program must submit a package. Package requirements and deadline submissions can be found in the annual NAVADMIN. Upon completion of the program, graduates earn approximately 30 college credit hours. Through this

course, you will learn to tell the Navy's story with pictures by attending courses in graphics, news writing and photography.

Note: This program may be cut due to budget constraints. Talk to your chief or career counselor for more details.

8150—BROADCASTER

Navy broadcasters collect, evaluate and prepare military information for broadcast over the airways via Armed Forces Radio and Television (AFRTS) networks as well as over Shipboard Information, Training and Entertainment (SITE) closed-circuit television systems. They use all skills gained in their public affairs and visual information experience to visually and verbally tell the story of America's Navy. Broadcasters will most likely be assigned aboard aircraft carriers and large-deck amphibious ships or at the Defense Media Activity or its subordinate commands.

To earn the 8150 NEC and become a broadcaster, you need to attend the Basic Combat Correspondence Course at DINFOS. A voice audition is required before a quota in the course is granted, and you must hold a secret clearance.

8151—GRAPHIC ILLUSTRATOR

The graphic illustrator is an expert at design and layout, color theory, realistic drawing, color media, and desktop publishing with a strong background in computer management and visual communication.

To earn the 8151 NEC and become a multimedia illustrator you must attend the Basic Multimedia Illustrator Course at DINFOS and to be in paygrades E-1 to E-6. A secret clearance, normal color vision and distance visual acuity correctable to 20/20 are also required.

8152—PUBLIC AFFAIRS OFFICER (ENLISTED)

An 8152 MC performs master-level duties as a public affairs officer or special assistant to his or her commanding officers. The enlisted PAO may also serve as a spokesperson for the Navy and the Department of Defense.

The enlisted PAO NEC is open to pay grades E-7 through E-9 (waivers for MC1s with orders to specific billets may be available through the detailee). To earn the 8252 NEC, you must attend the Public Affairs Qualification Course at DINFOS and be eligible for a secret clearance.

8153—PUBLIC AFFAIRS SUPERVISOR

Public affairs supervisors manage public affairs programs as command representatives or special assistants by gathering information for press releases, answering media and public questions, and being command spokespersons. In this job, MCs work independently and with public affairs officers and senior public affairs enlisted personnel.

The 8153 NEC is earned by attending the Intermediate Public Affairs Specialist Course at DINFOS and is open to personnel in paygrades E-5 through E-7. You must be eligible to hold a secret clearance.

8193— ELECTRONIC IMAGING SYSTEM SPECIALIST

An MC who holds the 8193 NEC installs, configures and operates advanced electronic imaging systems to acquire, import, enhance, print, store, export and electronically transmit and receive digital images from shore-based, afloat or airborne platforms.

To earn the 8193 NEC, you must attend the Digital Multimedia Course at DINFOS; however, waivers are available when specialized university training in photojournalism has been completed. For more information on submitting a waiver, talk to your career counselor and review the *Navy Enlisted Manpower and Enlisted Classification and Occupational Standards* ([NEOCS](#)) Manual, NAVPERS 18086F.

8288—AERIAL CAMERAMAN

An MC qualified as an 8288 performs in-flight duties as an aerial cameraman and is knowledgeable of photographic equipment, aerial photographic techniques, aircraft equipment, emergency procedures and flight procedures.

To earn this 8288 NEC, you must attend the Naval Aircrew Candidate School at Naval Air Station Pensacola, Fla. More information on the program can be found in the *Naval Military Personnel Manual* ([MILPERSMAN](#)).

3251—BROADCAST MANAGER

The MC broadcast manager directs the operation of radio, television, satellite, cable, and shipboard SITE systems as coordinated elements of the command information broadcasting function. She also coordinates with the Defense Media Activity to support American Forces Information Service products and taskings.

To earn the 3251 NEC, you must attend the Broadcast Managers Course at DINFOS or by completing at least two previous management assignments with AFRTS activities.

5345 —SCUBA DIVER

MCs who possess the 5345 SCUBA diver qualification provide underwater photographic support to the Navy diving community during underwater operations, detailed ship-bottom repairs, SEAL delivery team (SDV) training and operations, explosive ordnance disposal (EOD) missions, and search and recovery operations. MC Billets requiring the 5345 NECs are unique to combat camera.

To earn the 5345 NEC, you must be placed in one of the combat camera billets and attend the SCUBA Diver Course at the Naval Diving and Salvage Training Center in Panama City, Fla.

NOTE: You may obtain further information on all NECs by consulting the Manual of Navy Enlisted Manpower and Personnel Classifications and Occupational Standards ([NEOCS](#)) Manual, Volume I (Navy Enlisted Classifications), NAVPERS 18068F. Additionally, the MC Learning and Development Roadmap (LaDR – pronounced "ladder") is a navigable rate-specific guide that provides an overview of what is required from E-1 to E-9 with regards to professional development. A link to the MC rating roadmap is available via the Mass Communication Specialist page on Navy Knowledge Online (NKO).

SUMMARY

In this chapter, you learned what it takes to be a U.S. Navy mass communication specialist and about the many jobs you can perform within the rating. More information about the Navy MC rating can be found in the *Navy Enlisted Manpower and Personnel Classifications and Occupational Standards (NEOCS) Manual*.

As you continue through the pages of this manual, you will build upon this knowledge, gaining a strong base of knowledge to draw on for the rest of your career, but this is only the beginning. Every day should be one of learning new skills to perform your role as the Navy's storyteller.

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CHAPTER 2

PRINCIPLES, FUNDAMENTALS AND ORGANIZATION

Learning Objectives: Upon completing this chapter, you should be able to do the following:

- Identify the Navy principles of public affairs.
 - List the Department of Defense Principles of Information.
 - Identify the role of the Chief of Information.
 - Discuss the Navy public affairs organization.
 - Discuss the roles of CHINFO field activities.
-

INTRODUCTION

As a member of the Navy public affairs and visual information team (PA/VI), you will be responsible for delivering truthful, timely and accurate information to your audiences. The following chapters will provide you with the basic tools needed to become an effective communicator. However, these tools provide only the basics. Every day spent as a Navy MC should be spent building upon what you learn here.

More detailed information and resources can be found in Department of Defense (DoD) Directive 5400.13 (Defense Public Affairs Doctrine), Joint Publication 3-61 (Joint Public Affairs Doctrine), SECNAVINST 5720.44 (Public Affairs Policy and Regulations – PA Regs), *Public Affairs Tactics Manual*, [P-A Net](#) and [Navy Knowledge Online](#).

Note: To access P-A Net you must have log-in information, this is discussed further in Chapter 3.

PRINCIPLES

In the Navy, our job as PA/VI communicators is driven by basic principles – accountability to the public, full disclosure, expeditious release, message alignment and ethics.

Accountability to the Public - An open, ambitious public information policy is the assurance that the Department of the Navy (DON) remains accountable to the public. We accomplish this by encouraging a free flow of information, restricted only by legitimate constraints of security, accuracy, propriety and policy (SAPP).

Full Disclosure - For a government founded on the principle of an empowered public, the default position is full and prompt disclosure. Withholding information must be the exception and justified for specific and legally defensible reasons. Potential embarrassment is not justification to withhold information. Delays in the release of information can be damaging and even more embarrassing.

Expeditious Release - Information should be released as quickly as practical, and from the lowest possible level, consistent with release policies and required reviews. As a junior MC, you should verify local releasing procedures within your leadership chain. Chapter 2 of the *Navy Public*

Affairs Regulations and Chapter 3 of this manual further outline policy and guidance on the release of information.

Message Alignment – Message alignment is crucial to ensuring audiences receive consistent information through all internal communication mediums. Message alignment is accomplished through development, approval, distribution, and use of command-generated and higher-level public affairs guidance and CHINFO products. In addition to specific public affairs guidance, other examples of message-alignment tools include Rhumb Lines, quick responses and the maritime strategy. These items will be defined in detail in Chapter 3.

Ethics - Ethics is the discipline of moral duty and obligation. The Navy holds itself to a high ethical standard. In its dealings with the public, DON must adhere rigorously to such a standard, because a loss of public confidence can undermine DON's ability to complete its mission on all levels. Thus, the loss of confidence can have negative consequences on the Navy's warfighting capability.

The Navy public affairs principles of information are founded on the DoD Principles of Information. While the differences are minimal, it is important to be familiar with both sets of principles. DoD principles of information apply to all Navy public affairs and visual information products:

DoD PRINCIPLES of INFORMATION

Note: To download a full-color graphic of the DoD Principles of Information, follow click [here](#).

a. Information shall be made fully and readily available, consistent with statutory requirements, unless its release is precluded by national security constraints or valid statutory mandates or exceptions. The Freedom of Information Act (FOIA) will be supported in both letter and spirit. FOIA will be further discussed in Chapter 3.

b. A free flow of general and military information shall be made available, without censorship or propaganda, to the men and women of the armed forces and their family members.

c. Information will not be classified or otherwise withheld to protect the government from criticism or embarrassment, when the information itself is unclassified.

d. Information shall be withheld when disclosure would adversely affect national security, threaten the safety or privacy of U.S. government personnel or their families, violate the privacy of the citizens of the United States, or be contrary to law.

e. The DoD obligation to provide the public with information on its major programs and operations may require detailed public affairs planning and coordination in the DoD and with the other government agencies. Such activity is to expedite the flow of information to the public; propaganda has no place in DoD public affairs programs.

FUNDAMENTALS

The foundation of public affairs rests upon a four-step, cyclical process known as RPIE, pronounced "are-pie." The RPIE process includes research, planning, implementation and evaluation. Every event, incident or occasion – planned or unplanned – covered by PA or VI requires you to go through these steps. Each step is as important as the next, and none should be skipped.

Research is the starting point for developing any project you need to accomplish. In this step, you will gather information and define the situation, problem, event or opportunity. You will also identify your audiences and needed resources. Resist the tendency to skip this step; research is the foundation set for the other steps to be successful.

Planning is the second, and most important, step. In this step, you build upon your research, using information gathered to make your plan, considering your goals and identifying what needs to be done.

Implementation is the third step. This is the time to put your research and planning into action. Resist the urge to make changes when carrying out the plan, because it usually will create more problems than it will solve. Don't discard proposed changes; however, make note of them. These notes will come in handy when you are evaluating.

Evaluation begins during the implementing phase as you are jotting down any changes or improvements you want to make. It is an assessment of the preparation, implementation and outcome (impact) of the situation. Results of the evaluation should be documented for use in future projects. Lessons learned, as these results are commonly referred, are invaluable for not only planning future events, but also in handling unexpected crises.

ORGANIZATION

Public affairs organization, as with all other aspects, within DON is designed to provide maximum flow of information to the American people with minimum delay, subject only to operational security, statutory limitations and the safety of personnel. Further explanation of this organization is found in [SECNAVINST 5720.44](#) (PA Regs).

Multiple Channels of Authority - U.S. national policy is multifaceted, and a number of agencies execute portions of that policy. This gives rise to multiple channels of authority within the U.S government and the Navy.

ASD(PA) Authority - The Secretary of Defense (SECDEF) delegated authority to the Assistant Secretary of Defense for Public Affairs, or ASD(PA), to communicate directly with DoD components on public affairs matters, provide public affairs guidance directly to the Unified Commanders and direction to the Navy and Marine Corps through the Secretary of the Navy (SECNAV).

Department of the Navy - SECNAV is responsible for establishing DON public affairs policy and directing its implementation. SECNAV monitors and controls Navy and Marine Corps relations with Congress, SECDEF, other principal government officials and the public. Implementation of SECNAV'S policies is the responsibility of the Chief of Naval Operations, the Commandant of the Marine Corps and other senior commanders who report directly to the SECNAV. The [SECNAV Organization](#) page can be found on Navy.mil.

Chief of Information (CHINFO) - As the direct representative of SECNAV, CHINFO is the Navy's information chief and is delegated the responsibility for coordinating, planning and implementing the Navy's public affairs policies and programs. This includes exercising command of the Navy Offices of Information and other CHINFO field activities and providing direction to public affairs programs throughout the DON.

CHINFO Field Activities - To achieve the public affairs objective in an efficient and cost-effective manner, CHINFO must communicate at the regional and national levels with local and

regional news media, local governmental leaders, key community leaders, key educators and local/regional business leadership. Through its field activities, CHINFO is responsible for Navy reputation management, including national image and branding efforts, by bringing the Navy message directly to the American public.

CHINFO Field Activities include two Navy Offices of Information (NAVINFO), Navy Public Affairs Support Elements (NPASE) and the Fleet Hometown News Center (FHTNC).

Navy Offices of Information

- NAVINFO East, headquartered in New York, informs the men and women of the U.S. Navy, their families and the American public of key issues relating to the Navy. From assisting Girl Scout troops during Operation Cookie Drop to escorting embarks at Fleet Week, to informing media on the commissioning of USS New York (LPD 21), NAVINFO East is involved in many diverse activities in the New York metropolitan area. NAVINFO East also serves as a Navy contact for publishers requesting Navy support in coordination with CHINFO and related Navy commands and assists with requests for Navy props and assets for productions in the New York area.
- NAVINFO West coordinates requests for Navy support with the major film, television and documentary production companies both throughout Los Angeles and worldwide. Production assistance from the Department of Defense means filming access to the Navy's professional people and the most modern equipment.

Navy Public Affairs Support Element, formerly known as the Fleet Public Affairs Center, is headquartered in Norfolk. However, the CHINFO field activity is divided into NPASE East and West, located in Norfolk and San Diego respectively. NPASE teams, made up of public affairs officers and MCs, provide expeditionary public affairs forces and support the fleet with scalable and deployable forces trained and equipped to support current and emerging public affairs requirements. NPASE detachments are located in Jacksonville, Fla.; Bremerton, Wash.; Honolulu; Yokosuka, Japan; and Naples, Italy.

Fleet Hometown News Center is headquartered in Norfolk and is a sub-command of NPASE. The mission of FHTNC is to tell the story of the Navy, Marine Corps and Coast Guard one hometown at a time. FHTNC will be discussed in Chapter 4 of this manual.

Defense Media Activity (DMA) – Was established in October 2008 as a result of the Defense Base Realignment and Closure Act. DMA consolidates the Soldiers Media Center, Naval Media Center, Marine Corps News, Air Force News Service and American Forces Information Service into a single field activity. DMA also includes Stars and Stripes newspaper and the Defense Information School.

DMA is the Department of Defense's direct line of communication for news and information to U.S. forces worldwide. The agency presents news, information and entertainment on a variety of media platforms, including radio, television, Internet, print media and emerging media technologies. DMA headquarters is currently under construction at Fort George G. Meade in Maryland.

Operating Forces - Subject to the direction of senior authority, each officer who exercises command authority is responsible for the conduct and planning of public affairs. Public affairs is a command function, and public affairs officers report to their respective commanders or commanding officers on all PA issues. In most instances, however, commanders and COs delegate public affairs planning and execution to PAOs.

Public Affairs Officers - Public affairs officers serve as principal assistants to combatant commanders and commanding officers, advising them on all public affairs matters. Additionally, the PAO is the primary spokesperson for the command and liaises with media.

SUMMARY

In this chapter, you learned the basic principles and fundamentals of DoD and Navy public affairs. Chapter 3 builds upon this foundation by delving further into policies, procedures and guidance that govern public affairs in today's Navy.

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CHAPTER 3

POLICIES AND GUIDANCE

Learning Objectives: Upon completing this chapter, you should be able to do the following:

- Identify the instructions that govern DoD and Navy public affairs.
 - Identify the procedure for releasing information to the public.
 - Identify the basic provisions of the Freedom of Information Act.
 - Explain defamation and copyright laws.
-

INTRODUCTION

Department of Defense (DoD) and Navy policies, instructions and guidance exist to assist you with your duties as an MC. This chapter will briefly touch on the most common of these. More detailed information and links to the documents discussed in this chapter can be found on the [DoD Issuances](#) and [DON Issuances](#) websites as well as on [P-A Net](#).

PUBLIC AFFAIRS GOVERNING INSTRUCTIONS

DoD Instruction 5400.13 (Public Affairs Operations) – This instruction addresses PA roles and responsibilities across the Department of Defense, including the secretaries of the military departments, the joint chiefs of staff, combatant commanders and the heads of the other DoD components.

Joint Publication 3-61 (Joint Public Affairs Doctrine) – This PA publication provides joint doctrine for public affairs support during joint operations and U.S. military support to news media in conjunction with military operations. It provides guidance to the joint force commander (JFC) when communicating with national, international and internal audiences.

SECNAVINST 5720.44 (Public Affairs Policy and Regulations) – Known as the PA Regs, this instruction provides basic policy and regulations for carrying out public information/media relations, community relations and internal information for the Department of the Navy. As an MC, this should be your primary resource and should be referenced whenever questions about Navy public affairs arise.

Public Affairs Tactics Manual - The PA Tactics Manual is a “how-to” partner to the PA Regs, SECNAVINST 5720.44. The “Regs,” in general, is the “what-to-do” and “what-not-to-do” complement to this partnership. Used in tandem, these documents address most public affairs issues you and your PAO will face. Referring to them frequently is a wise tactic. The tactics manual can be found on P-A Net.

OPNAVINST 3104.1A (Navy Visual Information Policy and Responsibilities) – This instruction provides information on forms of visual or pictorial representation, either with or without sound. Visual Information (VI) includes still and motion imagery; hand- or computer-generated graphic art and animations; related captions, overlays and intellectual control data; and the processes and resources that support them. Module 2 of this manual focuses on VI and provides more in-depth information into this instruction.

Public Affairs Guidance (PAG) – PAG’s overarching purpose is to ensure message alignment, and it is tailored to specific events, subjects or issues. Within PAG, you will find themes and messages, possible questions and proposed answers, and background information. As an

MC, you should use PAG in the development of all your products, to include print stories, imagery captions and multimedia productions. Examples of previous PAG, Rhumb Lines and quick responses can be found on [P-A Net](#).

- *Rhumb Lines* – CHINFO produces *Rhumb Lines* weekly for senior Navy leadership, including SECNAV, the CNO, flag and general officers, and civilians to give them the situational awareness and information they need to effectively communicate Navy priorities. In every Rhumb Lines, you will find quotations from senior leadership, talking points, key messages and pertinent facts and figures. *Rhumb Lines* is CHINFO's principal message alignment tool for ensuring that the diverse and dispersed cadre of naval leaders can speak with one voice on critical issues.
- *Quick Responses* – A "quick response" summarizes a specific issue or incident and provides background information, while giving the response information for a potential media query. Facts or talking points are also included.

P-A Net – The Navy public affairs and visual information community of practice, is CHINFO's integrated suite of knowledge management, workflow processes and collaboration tools. P-A Net gives us the opportunity to share information across the entire enterprise. Since P-A Net is Web-based, it can be accessed from any computer with Internet connectivity. Access to P-A Net is obtained through CHINFO's policy, doctrine and technology division. However, prior to requesting access, you must be registered with up-to-date information in the [Navy PA Directory](#).

The Associated Press Stylebook and Briefing on Media Law - The AP Stylebook is the "gold standard of news writing" and allows you to write with the consistency and professionalism of civilian news writers throughout the world. Not only does it offer more than 3,000 A-to-Z entries, but also includes rules on grammar, spelling, punctuation, capitalization, abbreviation, and word and numeral usage. Additionally, as the name implies, the AP Stylebook provides guidance on business reporting, sports reporting and media law, to include libel and copyright infringement. Such legal concerns will be further discussed in the media law portion of this chapter. The Associated Press updates this reference annually; however, periodic updates are available through the [online version](#).

U.S. Navy Style Guide – Unless otherwise noted in the [U.S. Navy Style Guide](#), MCs should follow the most recent edition of the Associated Press Stylebook. Like the AP Stylebook, the Navy reference provides guidance unique to the Navy. Local style items, specific to your command or unit, should also be established and maintained to ensure consistency not only for MCs, but also for the command's audiences.

These references are the foundation for Navy MCs. However, many additional documents exist to aid us with our job as Navy PA/VI specialists. Various instructions and directives are interwoven into this manual.

GUIDELINES FOR RELEASE

Understanding the basic policy on the release of information is the cornerstone of everything we do in Navy public affairs. It affects what information we release to the public, how we handle the media, what we publish and how we respond to the public in general. Remember, DoD and Navy public affairs policies mandate us to be as open as possible and release information with minimum delay.

Some information is not releasable, such as that which would adversely affect national security, threaten the privacy or safety of personnel or their families, violate the privacy of an individual or that which is contrary to law. Command leadership is responsible for all public affairs activities, including the release of information; however the authority to release information is often delegated to the public affairs officer.

As a junior MC it is not likely that you will be given the authority to release information, but it's imperative for you to understand the guidelines. For more information, see Chapter 2 of the PA Regs and when in doubt a good rule of thumb is to consult your PAO or your chief.

The general limitations to the maximum disclosure policy can be easily remembered by the acronym SAPP, pronounced "sap", which stands for security, accuracy, propriety and policy.

- **Security** – Security is the first and most important limitation. It refers to information that is formally classified or falls under operational security (OPSEC) or the Essential Elements of Friendly Information (EEFI). Release of this type of information could cause harm to national security. OPSEC and EEFI guidance can be found in [OPNAVINST 3432.1](#) (Operations Security).
- **Accuracy** – The second most important limitation is accuracy. As an MC writing a story, shooting imagery or producing a multimedia production, you won't normally be the subject-matter expert. However, your job requires you to verify all information for accuracy **BEFORE** the product is released. **NEVER** shall you release information unless you are sure it is accurate. Inaccuracy wrecks credibility.
- **Propriety** – Ensuring propriety means verifying all released products are in good taste. For example, if you write news or a feature story, it is inappropriate to include tasteless humor, embarrassing comments, etc. Propriety also applies to photographs. Don't release photographs that may cause distress to members of your audience. An obvious example is a photograph of a deceased service member. If ever in doubt, ask your chief or supervisor.
- **Policy** – In some situations, policy may specify release guidance. For example, DoD policy calls for releasing at the seat of government the names of personnel killed in action. Here are some other examples of a DoD policy that must be followed:

ACCIDENTS and INCIDENTS – Major accidents or incidents require public affairs support immediately as well as around the clock in the days following. It is a good bet that you will never be 100-percent prepared for all accidents and incidents, but as mentioned earlier in the manual, planning is key.

In the event of a significant accident or incident, it is imperative the information is made available to the public using the maximum disclosure, minimum delay guideline and not be held pending inquiry. Per Chapter 2 of the PA Regs, the goal is to release the information within one hour of the time the command is notified. However, releases should not be distributed before the situational or operational reports (SITREPS and OPREPS) have been sent. Doing so can unduly influence an investigation and inadvertently drive the crisis.

Nuclear Accident and Incident guidance – According to [DoD Directive 5230.16](#), Nuclear Accident and Incident Public Affairs Guidance, responses to all public queries about the locations of nuclear weapons must include one of the following statements, as appropriate:

- "It is U.S. policy to neither confirm nor deny the presence or absence of nuclear weapons at any general or specific location."
- "It is general U.S. policy not to deploy nuclear weapons aboard surface ships, tactical submarines and naval aircraft. However, we do not discuss the presence or absence of nuclear weapons aboard specific platforms."

More information on producing news releases in conjunction with accidents and incidents can be found in limited length in Chapter 5 of this manual and more indepth in the PA Tactics manual.

PERSONAL INFORMATION – Information released on military and civilian personnel is governed by the Privacy Act of 1974 and [SECNAVINST 5211.5](#) (Department of the Navy Privacy Program). Generally, the following personal information is releasable and not considered an invasion of personal privacy:

For civilian employees:

- Name
- Present and past grades
- Present and past salaries
- Present and past duty stations
- Office or duty telephone number(s)

For military service members:

- Name
- Rank and date of rank
- Gross salary
- Present and past duty stations
- Future assignments that are officially established
- Office or duty telephone number(s)
- Source of commission
- Promotion sequence number
- Awards and decorations
- Attendance at professional military schools
- Duty status at any given time (active, reserve)

While this information is releasable on a case-by-case basis, blanket requests seeking information on a group of individuals or records should be considered with the help of a Privacy Act expert. If ever in doubt, talk to your chain of command.

The Freedom of Information Act (FOIA) – In 1966, FOIA gave the public the right to access records of the executive branch of the federal government, establishing for the first time in U.S. history the right of "any person" to seek access to these records. FOIA requests often center on the programs and activities of the DoD, including, but not limited to, the following:

- Projected retirees
- Deck logs
- Investigations
- Contracts
- Nuclear weapons
- Disposal of toxic substances

FOIA requests must be made in writing to be official. Once received, the Navy must respond to the request within 10 working days. However, you may make a written formal time-extension request back to the requester of up to 10 additional working days. This letter must be approved and signed by higher authority and include the reason for which an extension is required. The letter must also indicate that the requester may make an appeal to the appropriate appellate authority within 60 calendar days.

- The FOIA generally provides access to U.S. government records that result from the gathering of data. While many records qualify for release under FOIA, some records that do not include:
 - Objects or articles (such as structures, furniture, paintings, sculpture, three-dimensional models, vehicles and equipment)
 - Administrative tools (such as computer software)
 - Intangible records (such as an individual's memory or oral communication)
 - Personal records not subject to agency creation/retention (such as notes to jog the memory of an employee)
 - Unaltered publications and processed documents available to the public through other means (such as regulations, maps and manuals)
- According to the PA Regs, however, "information releasable under FOIA will be released without the requestor having to submit a FOIA request, particularly if the requestor is a news media representative. Release of information without requiring a FOIA request will often save labor and cost for both the requestor and the DON activity." Always check with your chief and/or PAO before making this exception though.

More information regarding FOIA can be found in the Department of the [Navy FOIA program instruction](#) (SECNAVINST 5720.42) and in Chapter 7 of the PA Regs.

WEBSITE POLICY – The management and oversight of all content on a publicly accessible Navy command website is a public affairs function, while the design and layout of websites is a visual information function.

The instruction governing official command websites is SECNAVINST 5720.47, entitled [Department of the Navy Policy for Content of Publicly Accessible World Wide Web Sites](#).

MCs serving as webmasters, however, should become familiar with all regulations governing websites and should bookmark [DoD's page for webmasters](#).

The need to provide public information to the Navy's various audiences must be balanced with the need to protect operational security, privacy of information, information security and personal safety. The appearance, accuracy, currency and relevance of the information presented by Navy commands on their websites reflect on the Navy's professional standards and credibility. Commands should limit posted information to information unique to their command. If you don't own the information, don't post it directly. Linking to other government sites is best practice here. Another tip for managing and maintaining websites is to visit other Navy command sites and talk to other webmasters about what works and doesn't work with their audiences.

MEDIA LAW – As you have learned in this chapter, nearly everything you do as an MC is governed by policies and directives. Yet, in addition to our military regulations, your products are also governed by federal and state laws, which include communications law.

The Constitution's First Amendment states Congress will make no laws abridging the freedom of the press. To the grief of many a publisher and reporter, the First Amendment does not give reporters and editors a free license to print whatever they please.

Free speech and free press, as guaranteed by the Constitution, have two sides: on one side, the right to use them; on the other, the duty not to abuse them. Because your job is to tell the Navy's story, you should become acquainted with defamation laws, the right of privacy and copyright laws.

DEFAMATION, the harming of one's reputation, is typically broken up into two types – libel and slander. Libel is published defamation, while slander is spoken. As it may be clear that defamation printed in a newspaper or on a website is libelous, it may not be as clear when it comes to broadcasted products on television or radio.

Libel laws are state laws not federal laws, thus meaning that what is libelous and how it will be punished is different in each state. In most states, libel is a civil offense and convictions typically result in monetary damages instead of jail time.

Staff judge advocates can assist you in understanding local libel laws. Additional information on media law can be found in the latest version of the [Associated Press Stylebook](#) and Briefing on Media Law. (*Subscription required to browse online version of AP Stylebook.*)

PRIVACY RIGHTS – While the right to privacy is not specifically stated in the Constitution like freedom of speech, it is often regarded as one of our most cherished rights. In 1890, future Supreme Court Justice Louis Brandeis said in the Harvard Law Review that privacy is "the right to be left alone — the most comprehensive of rights and the right most valued by civilized man." The Privacy Act of 1974 gives citizens the right to control information about themselves.

MCs must not violate a person's privacy. Privacy can be violated by disclosure of private facts, if the facts are offensive to a reasonable person and are NOT newsworthy.

More information regarding the Privacy Act of 1974 can be found in SECNAVINST 5211.5 at the Navy [Privacy website](#).

COPYRIGHT LAWS – Copyright is the right of an author, composer, artist, photographer, etc., to own, control and/or profit from the production of his or her work. Copyrighted material may not be republished without consent of the copyright owner, who is not always the author. Facts, historical events and titles cannot be copyrighted, nor can work produced by government employees (MCs included) working within the scope of their jobs.

Generally, copyrights issued since 1978 are good for the author's life plus 70 years, and those issued before 1978 are good for 75 years and are renewable. The Library of Congress contains more information on length of copyrights.

The Fair Use Doctrine legally allows use of portions of copyrighted work without permission in certain instances. These exceptions are:

- Criticism: In reviewing books, television programs, movies and music, portions of the work may be repeated in the review. However, the portions used cannot give away resolution of major plots
- Comment: In commentaries, you may use portions of other works to make or refute a point
- News reporting: At times, a book, television program, movie or song becomes a news item. Relevant portions of the work may be used to support the article

- Teaching: Teachers may use portions of other people's work in their instruction
- Scholarship: Term papers, theses and dissertations may be used; however, footnotes and bibliographies must be used to give credit to these pieces
- Research: This includes documents such as research papers, magazine/journal articles and books produced outside of an academic requirement. Again, remember to use footnotes and bibliographies.

If you have any doubt about copyright or fair use, you should err on the side of caution and receive permission from the copyright owner prior to use. More information and an example template to request copyright permission can be found in [SECNAVINST 5870.4 Copyright](#). Supplemental copyright information specific to public and visual information can also be found in the [Associated Press Stylebook](#) and Briefing on Media Law as well as OPNAVINST 3104.1 (series) (Navy Visual Information Policy and Responsibilities).

SUMMARY

In this chapter, we discussed policies, guidances and directives an MC lives by and should have on hand as she goes about day-to-day operations in support of the Navy. As a reminder, further information on these items can be found on the [DoD Issuances](#) and [DoN Issuances](#) websites as well as on [P-A Net](#).

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CHAPTER 4

PUBLIC AFFAIRS FUNCTIONS

Learning objectives: Upon completion of this chapter, you should be able to do the following:

- Discuss the three functions of public affairs and how MCs use each to tell the Navy's story.
 - Explain the types of media and their characteristics.
 - Discuss the Fleet Hometown News Program.
 - Identify the information included in a media query.
 - Assemble a media information kit.
 - Assemble a welcome aboard kit.
 - Discuss steps necessary to escort media.
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INTRODUCTION

Public affairs can be divided into three functions – internal information, public information and community relations. To be successful in public affairs, you must master all three functions and incorporate each into the command's mission. In this chapter, we will discuss the basics of each function and how they work together to inform our audiences and tell the Navy story.

PUBLIC AFFAIRS APPROACH

Internal information, public information and community relations are directed toward internal and external audiences. As an MC working within these three functions, you must decide what approach you will take when reaching out and releasing information to your audiences. The two approaches are proactive and reactive.

PROACTIVE (PREVENTIVE) - This approach requires you to plan ahead and include the day-to-day activities of the office and regularly occurring events, such as changes of command, tours, distinguished visitor or media embarks, etc. Being proactive adheres to the maximum disclosure policy and is always the preferred approach, as it spells out what needs to be done and identifies opportunities to provide good exposure for your command and your Sailors and Marines. Proper planning is the foundation of successful public affairs.

REACTIVE - This is simply the surprise (often crisis or bad news) situation that cannot be predicted or hasn't been practiced or fully planned. However, a PA shop is better equipped to handle an unexpected crisis if there is a plan in place. There is no substitute for a good crisis communication plan.

All three functions of public affairs are equally important to reaching your intended audiences. You must be familiar with all three functions and how they work in concert to tell the Navy's story. Whether you take the preferred preventive approach or circumstances dictate a reactive approach, timely and accurate information flow is the key to successful public affairs operations.

INTERNAL INFORMATION

Your internal audience consists of active and Reserve Navy and Marine Corps members, Navy and Marine Corps families, civilian employees, contract employees, retirees, and Navy and Marine Corps organizations. The primary internal communication goal is to ensure our people and their families understand they are at the core of readiness and operational effectiveness.

There are six general internal information goals you should always keep in mind:

1. Link Sailors, Marines and their leaders through a free flow of news and information.
2. Help Sailors and Marines understand their roles in the Navy mission.
3. Explain how policies, programs and operations affect Navy members.
4. Promote good citizenship and build pride.
5. Recognize individual and team achievements.
6. Provide avenues for feedback.

There are many ways in which you can "get the word out" to accomplish these six goals. Often the best method is to use as many communication channels as possible for one piece of news. Once you know all of the options, you can best select how to publicize information of importance to your audience.

PRINT PRODUCTS

COMMAND NEWSPAPERS

- Official command or region newspapers fall under the purview of the PAO, your best one-stop adviser for information distribution.
- They reach broader audiences: active duty, families, civilian employees, Reservists, contractors, etc.
- People have had lifelong training at reading and comprehending news. It's far more reader-friendly and personal than official correspondence.
- Newspapers enhance the Navy's and your command's themes and messages with photography and graphics. Visual elements such as photos, graphics and headlines have proven to dramatically improve comprehension.

Command newspapers are produced as two types – civilian enterprise and command-funded.

— The civilian enterprise publication is the preferred type, because it is printed at no cost to the command. Advertising sold by the commercial printer covers the publishing costs. The contract between the command and the commercial printer stipulates the Navy will specify design and layout of editorial content, and advertising will not exceed 60 percent of the space. Additionally, advertising shall not violate DoD equal opportunity directives.

— Command-funded publications do not contain advertising, so they are paid for by the command and printed on base, aboard ship or at a commercial printer. The command owns 100 percent of the layout space.

— The civilian enterprise publisher is typically responsible for distributing a civilian enterprise publication, though official channels may be used. Whether you're distributing a command-funded paper or civilian enterprise newspapers should be placed in high-traffic areas, such as the Navy Exchange, commissary, housing areas, mess decks or break rooms. Newspapers may also be mailed, via third- or fourth-class mail, or made available online for viewing or download.

More information on CE newspapers can be found in the PA Regs and DoDINST 5120.4, Department of Defense Newspapers, magazines and Civilian Enterprise Publications.

FAMILY NEWSLETTERS

Surveys have found the overwhelming majority of Sailors and family members find family newsletters helpful in keeping families informed of Navywide and command information.

- They can be used to ...
 - Transmit information from the command to family members.
 - Inform readers of community and Navy services available.
 - Express the command's interest in the morale and welfare of family members.
 - Encourage, inspire and uplift.
- The benefits of newsletters include ...
 - Reducing misinformation and rumors by providing firsthand, accurate information.
 - Reaching a large number of people at one time.
 - Introduction and establishment of command leadership and the ombudsman as a credible source of information.
- The distribution of the family newsletter can be coordinated with your command ombudsman or family readiness group for the most up-to-date family member mailing or e-mail list. The newsletter can be produced as a hard copy to be mailed, distributed electronically or both. Typically, a newsletter should be no more than four pages, front and back. Some commands now use social media sites in addition to or in lieu of hard-copy family newsletters. We will discuss social media in more detail in the public information portion of this chapter.

PLAN of the DAY/WEEK (POD/POW/POM)

Although this channel is primarily an administrative function, MCs should recognize this medium as a viable avenue for command information. Characteristics of the POD/POW/POM include:

- Designed for short news blurbs.
- Businesslike in tone; good for policy news.
- Acts as the official command voice; it carries weight.
- An excellent way to move information quickly.

— Most effective when combined with other channels, such as command newspapers, welcome aboard packets, and face-to-face meetings such as morning quarters. In doing such, you expound and broaden your coverage.

ELECTRONIC MEDIA

Examples of electronic media include Internet, e-mail, radio, television (shipboard or local closed-circuit), the 1MC, and the telephone.

- *Internet.* The Internet offers PA/VI specialists an interactive means of disseminating information to all audiences. From the Navy's official website (discussed later in the chapter) to command-sponsored websites and social media sites, MCs can upload news, photos, videos and multimedia products as well as static information about their commands and the Navy. The sky is the limit to how MCs can use the Internet. However, in doing such, you must adhere to [SECNAVINST 5720.47](#), Policy for Content for Publicly Accessible World Wide Web Sites.
- *SITE TV.* Your Shipboard Information, Training, and Entertainment Closed-Circuit Television (SITE-CCTV) system is an excellent vehicle for delivering critical information and maintaining crew morale.

— The Direct to Sailor (DTS) program, a satellite-based source of programming, provides news and entertainment on television and radio channels. More information can be found in DoDINST 5120.2, American Forces Radio and Television Service (AFRTS).

— SITE is an excellent system for real-time programming of command events, news and information that can directly impact the lives of Sailors and their families. Use the system's character generator to scroll important Navy, national and international news items during the workday and between movies.

FACE-to-FACE

Morning quarters, captain's calls, division or department head meetings, visits by the CO, formal addresses to groups by ombudsmen or family readiness groups, pre-deployment/post-deployment briefs, and command/department indoctrination are invaluable means of disseminating information to internal audiences. MCs should ALWAYS be involved in these events.

COMMAND EVENTS

Family and Tiger cruises, command picnics, Navy and Marine Corps birthday celebrations, Sailor of the Month/Year events are among the ways in which MCs can get involved to tell the command and the Navy story to many people at one time.

DEFENSE MEDIA ACTIVITY

A number of additional products produced by Defense Media Activity, developed with the guidance of CHINFO, are outstanding outlets to deliver your command's message, tell your Sailors' stories and expand your audience. They are ...

Navy.mil - The Navy's official website is managed and maintained by the Defense Media Activity. It is targeted to the Navy's internal audiences and anyone seeking information about the

Navy. The site includes information on many facets of the Navy, ranging from daily news to digital images of Sailors and Navy events fleetwide. You should use Navy.mil as an information resource and as an outlet to release your command's media products to a wider audience. To upload stories to Navy.mil, your command must use the Navy [management console](#), a password-protected site.

By updating your information in the [PA directory](#) you can elect to receive daily updates from Navy News. The e-mailed updates include the day's stories, photo of the day and a daily historical fact.

All Hands Magazine – In print since August 1922, All Hands is the Navy's flagship publication. Approximately 65,000 copies are distributed worldwide every month with an intended 1:6 copy-to-reader ratio. As an MC, you should ensure All Hands is widely distributed at your command and encourage personnel to pass it along to others when they have finished reading it. For more information about All Hands magazine or to view current and archived editions, visit the [All Hands Website](#).

All Hands Television - Teaming with All Hands Magazine to form the CNO's primary means of informing the internal audience is All Hands Television, a 30-minute monthly feature program produced and distributed by the Defense Media Activity. AHTV reaches Sailors aboard deployed ships and those assigned with their families overseas at remote shore locations. It is also available online at Navy.mil and broadcast on the American Forces Network, commercial television stations across the U.S. and the Pentagon Channel.

All Hands Radio - The flagship broadcast for the U.S. Navy, All Hands Radio is broadcast daily online at Navy.mil and on American Forces Radio stations worldwide.

All Hands News Update - Formerly known as Daily News Update, All Hands News includes six television news packages per day — a two-minute TV package and five, one-minute TV packages broadcast on the Pentagon Channel, American Forces Television and online at Navy.mil. The goal of All Hands News is to tell your story to the fleet and to keep the fleet informed of the best, newest, greatest things going on in today's Navy and Marine Corps. All Hands News Update is a great outlet for broadcasting your command-generated news packages to the fleet. Contact DMA for specific submission guidelines.

Really Simple Syndication (RSS) - Many of the products listed above are also available via podcasts and RSS feeds. These feeds deliver audio and video broadcasts to your desktop or a portable device. Navy podcasts and RSS feeds can be found by following the [Media Resources](#) link on Navy.mil.

PUBLIC INFORMATION/MEDIA RELATIONS

Public information, also known as media relations, refers to the collection, analysis and dissemination of unclassified, official or otherwise releasable information to the public. This is the chief underlying function of all public affairs activities and fulfills the responsibility of all federally funded agencies for accountability to the taxpayers. However, in order to build a strong public information/media relations program, you must establish and maintain credibility.

IDENTIFYING YOUR AUDIENCE

Your ability to effectively communicate hinges on properly identifying your audience and using the most appropriate media type to deliver the intended message. For example, if your audience is a group of World War II veterans, the Internet may not be the best way to reach them.

MEDIA TYPES

Your command should be familiar with the following media types and their requirements to properly coordinate coverage.

Civilian Newspapers - Next to public speaking, newspapers are the oldest medium of mass communication. Despite the growth of television and the Internet; however, many believe newspapers remain the backbone of public information. MCs should understand the significant differences in news coverage that may exist between metropolitan dailies, neighborhood dailies and weekly newspapers in the same locale. Many, if not most, newspapers are now online.

Wire Services - A large part of the news read in newspapers or heard on the air originates from one of several major press associations or wire services. Below are some of the major news services covering international and national news.

- Associated Press – According to the organization's website, the [Associated Press](#) was founded in 1846 and is headquartered in New York. It is a "not-for-profit news cooperative owned by its American newspaper and broadcast members. It serves thousands of daily newspaper, radio, television, and online customers with coverage in text, photos, graphics, audio and video."
- [United Press International](#) – UPI, as it is most widely known, reaches about 2.8 million folks a year via its website. In the business since 1907, UPI provides information to media outlets, businesses, governments and researchers worldwide.
- [Thomson Reuters](#) (more commonly known as "Reuters," pronounced "roy-ters") – Founded in 1851 and headquartered in London, Reuters is a United Kingdom-based news service that provides news, opinion, and analysis.
- Agence France-Presse – AFP traces its history back to 1835 and Agence Havas, which claims to be the first international news agency. [AFP](#) covers the world with thousands of stories daily and is translated into English, French, Spanish, German, Portuguese and Arabic.
- Xinhua News Agency (pronounced "sheen hwah") – Xinhua, which translates to "New China," has provided information about the Peoples Republic of China since 1931. Today, Xinhua translates its news across the world in six languages.
- *The New York Times*, *Los Angeles Times* and *Washington Post* each have their own wire services.
- Gannett is a news service that owns USA TODAY, Navy Times, more than 100 local dailies and has significant holdings in broadcast media.

Fleet Hometown News Center – One of the most successful mediums in getting Navy news to civilian newspapers or on the various wire services is through the Fleet Hometown News Center (FHTNC). Whether you're assigned to a shore command or a deployable unit, one of the most effective ways to recognize your personnel is through Fleet Hometown News. FHTNC stories are used by more than 12,000 hometown news media organizations including newspapers, radio and

television stations and college/alumni publications throughout the United States and its territories. Each year, FHTNC distributes several hundred thousand news releases to these outlets in its effort to build morale and highlight the achievements of hardworking Sailors, Marines and Coast Guardsmen to their family and friends back home.

Newsworthy events for FHTNC release submissions include (but not limited to):

- Reporting Aboard
- Promotions and advancements
- Reenlistments
- Awards and medals
- Marine/Sailor of the Quarter/Year
- Retirements

Although FHTNC releases emphasize the accomplishments and activities of the individual, use of the program is an exceptional way for commanders to educate the American public about a ship or unit deployment, operation, exercise and/or volunteerism.

There are three basic components of the program – [hold files](#), [short features](#), and more-involved [feature stories](#). The latter includes travel by FHTNC personnel travel to your unit to conduct interviews and take photographs. FHTNC uses Navy form NAVSO 5724/1 to gather biographical data for all three components.

In accordance with the Fleet Hometown News program instruction, [SECNAVINST 5724.3](#), any unit or detachment deployed for 45 days or more or deployed in support of a high-level event (Fleet Week, Pacific Partnership, D-Day Commemoration, etc.) shall establish a hold file. A hold file is a collection of FHTN forms completed by individuals in a unit and held in an active status at the FHTNC to generate FHTN releases while the unit is deployed. The unit staff should maintain a copy of the hold file as well.

Coordination with FHTNC should begin 60 days prior to the unit's scheduled deployment, and the hold file should be sent 30 days prior. Milestone information should be verified every 60 days throughout the deployment to ensure accurate and newsworthy information is delivered. FHTNC will maintain the hold file until 60 days after the unit's return from deployment. Hold files for surging units will be kept on file indefinitely.

Program guidelines, hold-file instructions, examples, downloadable forms, and more "how-to" information can be found on [CHINFO's FHTNC website](#). The FHTN program is governed by [SECNAVINST 5724.3 FHTN Program Policy and Regulations](#).

Television – Television combines the impact of image and movement with the immediacy of radio. This makes it the most potent of mass communication media.

Radio - The medium of immediacy, radio broadcasts are faster and less cumbersome than television. Radio is also more accessible to the public than any other medium and offers coverage of a news event as it happens. In some areas of the world, such as Iraq and Afghanistan, the external media is dominated by word of mouth and radio. Listeners can stay abreast of events with little effort. However, radio has no permanence or depth of coverage. Each radio station has its own particular

production requirements. Yet, Navy PA staffs can assist radio station managers in producing news and features on military topics that can be mutually beneficial.

Emerging Media - Social media has grown exponentially in the past few years, and the public's increased use has made this avenue of communication extremely effective in reaching our audiences quickly and personally. In many cases social media sites have blurred the lines between professional and personal networks. Professionalism and adherence to operational security on social media sites must be maintained at all times, whether you're posting as an official command representative or to friends and family in a civilian capacity. Command updates to social media sites are not intended to replace the traditional news release or command website but to provide accompaniment to enhance our stories and reach a different audience.

Operational security should be given the highest consideration when dealing with social media. Social media sites are NOT private. An opinion in the social media realm is an opinion in a public domain. Not only are the public and media there, so are our adversaries. If you wouldn't display and sign your opinion on a placard in a public place, you shouldn't post it in cyberspace. More guidance on social media can be found on the [Defense.Gov website](#) and [CHINFO website](#).

Remember, you must not favor one medium over another; however, you should take advantage of the potential and recognize the limitations of each for circulation, selectivity of publics, influence or prestige, appearance and flexibility in the timing of your products. One common limitation is that coverage does not guarantee public knowledge or understanding of an issue. You cannot expect radio to do a job that is better suited for a newspaper or for a newspaper to do the entire job of communicating in an era when the electronic media have access to virtually all American homes.

ESTABLISHING GOOD MEDIA RELATIONS

Similar to SAPP (security, accuracy, propriety and policy), there are four key words that govern your relations with representatives of the mass media. They are as follows:

- Security -- Make sure the information you release to the media does not contain security violations. In addition to getting yourself in trouble, you may endanger the welfare of your country. You should adopt the slogans "when in doubt, check it out" and "loose lips sink ships"
- Honesty – Your good name (as well as the Navy's) is your most valuable asset and the foundation of credibility. Justify the media's belief and trust in the Navy by playing the news game honestly. Never fake a story or serve a selfish interest. Do an honest, straightforward job of reporting the news. Credit your source, and never plagiarize or use copyrighted material without permission
- Accuracy – Every news release or statement released to the media must be 100-percent accurate. Make one blunder and the media could lose confidence in you. Be sure to check and double-check all statements, names, addresses, dates and numbers. Be sure your personal opinions do not interfere with your media relations. Your job is to tell the facts and tell them accurately.
- Promptness – A good MC aims for speed without sacrificing accuracy. Reporters want their material quickly because competition is keen, and the public demands fresh news.

Media Relations Do's And Don'ts

Building relationships with the media in your area is key to a successful public information program. As in any area of human relations, treat others as you would want to be treated. Be professional. Remembering a few simple do's and don'ts will help guide you, as well as help you set an example for your MC peers.

Do ...

- Be available at all hours
- Tell the truth
- Tell reporters up front if you cannot comment on a particular subject or if the answer is classified
- Get the facts, get them right and get them out
- Be aware of time or space limitations, deadlines or other special requirements
- Know the audience of each medium
- Know the people who work in the media.

Don't ...

- Lie
- Speculate
- Beg for coverage
- Ask a reporter to kill a story
- Be partial in dealing with media representatives for any reason
- Release information to other newsmen that has been given to you by a newsman
- Be a publicity hound.
- Ask news people to slant their copy, withhold information or do favors.

Media Queries

A media query is a request for information made by a reporter, usually by telephone or e-mail, thus indicating that the reporter is looking for a rapid response. To properly respond to media queries, your shop should have a media query form that will walk you through the information you need to gather for the reporter making the query. The form should include the following items:

- Date and time of the media query
- Name of person taking query
- Reporter's name and organization
- Reporter's contact information (phone, fax, e-mail)
- Reporter's deadline

- Subject of reporter's focus
- Background
- Specific question(s) being asked by the reporter
- Desired response (phone interview, written response, visit, etc.)
- PAO point of contact information
- Staffing information
- Tracking number – A media query log will help track and file media queries and responses.

If you receive a query from the media, record as much information listed above as possible. And, do so legibly. As a rule, you should immediately refer the query to your chief or PAO. The PAO will most likely be the authority to release information and is more likely to know the representative calling. When your PAO or chief is not available, you should only answer the query if you have been given the authority to do so and the requested information is releasable and within the limits of SAPP. In most public affairs offices, a set of established ground rules cover responses to routine queries.

However, always keep in mind that the reporter is most likely working against a rapidly approaching deadline. Therefore, if the information is not readily available or you do not have the authority to respond to a query, respectfully explain this to the reporter and promise to call back. Never brush off a reporter with a vague promise, such as, "I will see what I can find out." Be courteous and remember you are representing your command and America's Navy. If you say you are going to get back to the reporter, then get back to that reporter. Your credibility and the credibility of the Navy could be at stake if you do not.

If you receive more than three queries on a particular subject, you should consider sending out the information via an external news release as soon as possible. See Chapter 5 for more information on external news releases.

Media Visits

Members of the media may not only request information via queries, they may also request a visit to your command or simply be invited. In any event, when media visit your ship or station, you will often be tasked to escort them. Media representatives are considered guests of the commanding officer, even when they are covering an assignment. As guests, members of the media are due the utmost courtesy and respect. When you are assigned to escort media, make sure you are prepared. The following items must be coordinated and reviewed with your supervisor, chief and/or PAO prior to the visit:

- Tour route through command – include as many points of interest as possible with security limits
- Interviewees and subject-matter experts
- Times and locations of interviews
- Media information kits.

Once you meet up with the media, you should be relaxed and natural in your actions, and do not try to talk above your level of expertise. If the reporter asks questions you do not know how to

answer, make note of the questions and get back to him or her as soon as possible just as you would with a media query.

If a reporter approaches you for an exclusive, you can work that angle only if the angle is the reporter's original idea. If not, you have to include all other media interested in the subject.

Media Information Kit

The media information kit (also known as a media kit or press kit) is one way to provide visiting reporters with valuable background information on your ship or station. A typical media kit contains the following materials:

- Command historical timeline
- Brief description of the command's mission
- Welcome aboard brochure
- Biographies of CO, XO and/or other subject-matter experts you may have lined up for the media visit
- Multimedia products (photos, videos and graphics may be provided to the media on CDs, DVDs, or a link to a downloadable website where media can find these products)
- Any other appropriate information to supplement the subject on which they intend to write, such as news releases, [fact files](#), etc.

To assemble the items for your media kit, use a standard-size, double-pocket folder. You can arrange the items in a variety of ways, but one common method is to place the static items (command history, leadership biographies, welcome aboard booklet, etc.) on the left and amplifying, event-specific events on the right. Media kits must be reviewed regularly, because the material quickly becomes outdated.

Media information kits serve many other useful purposes, too. For example, you may give them to visiting dignitaries or guest observers during fleet exercises and operations. They are also used during public visitations, commissioning ceremonies and other special occasions. While on deployment, media kits can be forwarded with advance news releases to local editors in ports scheduled to be visited. American officials in foreign countries also need kits for publicity purposes when ships visit them.

Media Lists

An important part of building relationships with the media in your area is knowing what media is in your area. As part of your shop's files, you should have a detailed list of all the media in your area. The list breaks the media into specified groups, such as newspapers, television, radio and social media.

Finding out what media are in your area is not as difficult as you may think. An Internet search for media as well as networking with area MCs and PAOs should set you on the right path to developing your local media list. For each media outlet you should include the following information in your database:

- Name of the organization

- Names of managing editors and/or general managers
- Names of editors, news directors and assignment editors
- Names of military beat reporters
- Names of public affairs directors
- Mailing address, including street, city, state and zip code, for the organization
- Telephone numbers
- Fax numbers. Though fax machines may seem out of date, if the media outlet has a fax number, include it in your listing
- E-mail addresses
- Affiliation, e.g. CBS, NBC, or FOX, if applicable
- Wire service, e.g. Gannett, Reuters, AP, if applicable
- Notes about the organization to include previous articles, tone of articles, views on military, social media involvement, etc.

By having a detailed media list, you will be prepared to contact them for media availabilities or to distribute news releases and media advisories quickly. A news release, also known as a press release, is written correspondence directed at the media to inform them of a newsworthy event, service, product or person. A media advisory is an abbreviated news release that invites the media to cover an event themselves. Newsgathering and newswriting will be discussed in subsequent chapters of this module; however, further information regarding media relations and the release of information can be found in CHINFOINST 5720.8, *PA Tactics Manual*, via [P-A Net](#).

COMMUNITY RELATIONS

Community relations is the third function of public affairs. Also referred to as COMREL, community relations is defined as a planned series of events and activities that fosters communication and understanding between military and civilian communities. It encompasses all official and private contact between the command and its personnel and local communities.

Fostering and furthering good relations with communities at home and abroad is in the best interest of the Navy. A well-planned community relations program will help earn public support and understanding of the Navy's mission and capabilities by increasing public exposure to, and understanding of, military personnel, facilities, equipment and programs. COMREL also works to support recruiting goals and inspires patriotism.

Military organizations should be concerned with community relations because the business of the military is the people's business. Military organizations have a responsibility to report to the public on the conduct of military business. In a democratic nation, the individual citizen has a right to know how efficiently, and to what purpose, his armed forces are employing his sons and daughters and using his tax money -- plus what the returns on his investment are in personal and national security. The effectiveness of military operations depends upon public understanding, support and cooperation.

ELEMENTS of a COMMUNITY RELATIONS PROGRAM

Among the main elements of a community relations program are publics, communication channels and community relations projects designed to accomplish an organization's goals in the community.

Identifying Publics – Collectively, a Navy command's public consists of many groups, both internal and external. As with any community, however, you will find key publics or leaders in the community. To be successful in your community relations program, you should identify and be familiar with these publics. As with the media relations program at your command, your shop should maintain a file of civic and community leaders. This file should include all point of contact information, to include names, phone numbers, addresses, websites, etc.

Internal publics

- U.S. Naval Academy midshipmen
- NROTC midshipmen
- Military auxiliary organizations
- Career civilian employees
- Families

External publics

- The general public
- Community organizations (civic, trade, industrial, veterans, fraternal, youth, women, religious, educational)
- Congress
- Members of committees involved in armed forces matters
- Key governmental officials
- Local government officials
- News media
- Professional organizations
- Well-known local businesses
- Professional people
- Elder statesmen

Community leaders can also be categorized into decision makers, opinion leaders, influentials and the general public. *(Click on links to read Navy news stories that highlight these community members.)*

- Decision makers are elected or appointed officials in the community who vote on issues that may affect the community relations climate. [Mayors](#) and [city council](#) members are examples of community leaders.

- Opinion leaders are community leaders, though not elected or appointed, who still have the power to shape public opinion. They gather a following based on their perspective on a single issue or a group of related issues. An example of this would be school board members, [civic organization leaders](#) and religious leaders.
- Influentials are key persons in the business world. They are the CEOs and chamber of commerce members or other business associations in local community. Click [here](#) for an example of how influentials support America's Navy.
- Possibly the most important external audience is the public – our neighbors, our fellow American citizens, taxpayers and voters. Relationships we build with the general population in [our communities](#) leave lasting impressions.

Communication Channels – Several communication channels are available to carry out a good community relations program. A channel is a method used to reach out to your publics. Of course, we have telephones and Internet, but what about getting out in the public to reach your audiences? Service members' participation in community, church, and athletic and social activities is the most important and effective communication channel. The majority of people in your community will base their opinion of the military on the individuals with whom they come into contact.

Projects and Activities

Projects and activities such as Navy Weeks, installation/ship tours, exhibits, bands, color guards and other planned activities aimed at communicating with the public are essential.

Tours – Navy commands, regardless of their size or mission, generate community interest. For this reason, tours are often an important part of any community relations program, as visitors witness firsthand the Navy in action. The public affairs office is responsible for handling requests for tours, selecting and training tour guides, and planning and coordinating tours.

Just as you will serve as a media escort while serving as an MC, you will also be tasked as a tour guide for your command. As a tour guide, you become the face of the command is imperative you learn as much about your command as possible, but never speak about topics you don't know about. Saying "I don't know, but I will get back to you" is never a bad answer, just make sure you find the answer for the requestor and follow through on your promise to get back with them. The following guidelines can be applied to most installation visits and shipboard tours:

- All hands must be reminded they are representatives of the Navy, and their conduct and attitude are important when conducting tours
- For foreign port visits, ship's company and embarked personnel should prepare for visitors by receiving briefings on local customs and traditions
- "Welcome Aboard" packets or brochures supplement the guided tour. Similar to media kits, a welcome aboard kit typically contains significant events in the ship's history, photographs of the ship, historical and unclassified statistical data, a discussion of the ship's mission and your commanding officer's biography. If foreign port visits are anticipated, packets should be translated

- Explanatory signs or photo boards should be prepared directing visitors through the ship and explaining systems and equipment. When overseas, the signs should be in both English and the host-nation language, if possible. To translate these items as well as items like welcome aboard brochures, the PAO will most likely coordinate with the command's operations department and with host-nation and embassy personnel
- Opportunities should be arranged for local citizens to meet with members of the ship's company to share interesting backgrounds
- An adequate number of selected and trained tour guides or escorts should be selected based on appearance, enthusiasm, ability to be personable and skill in expressing themselves. In all cases, guides should be trained and briefed in advance. A quick inspection of your tour guides' uniforms is a must. Of note, those who speak the host country's language should be used as hosts whenever possible
- Particular care must be exercised when news media representatives are invited aboard in a capacity other than their professional one. They should be treated as news media representatives regardless of their status as invited guests.

More information regarding the coordination and approval authorities for visits and embarkations can be found in OPNAVINST 5720.2, Embarkation in U.S. Navy Vessels. Instructions can be found at the [Navy Instruction Issuances Web page](#).

Participation in Community Events – Military members may support community requests to participate in local events as part of an honor guard, science fair, marching unit, etc. Generally, efforts involving service members, such as joint cleanup ventures or blood drives, are most productive. Support must be confined to activities of common public interest and benefit a local, state, regional or national interest, unless specifically authorized by public law or executive order. When in doubt, talk to your chief or PAO.

More information regarding community relations can be found in the [PA Regs, SECNAVINST 5720.44](#) and the [PA Tactics Manual, CHINFOINST 5720.8](#).

Navy Office of Community Outreach

The Department of the Navy has long realized the importance of community relations as it relates to our overall public affairs mission. The Chief of Information established the Navy Office of Community Outreach (NAVCO) as a field activity to serve as the central point of coordination for Navy community outreach programs throughout the continental U.S. with the exception of fleet concentration areas and the Los Angeles and New York metropolitan areas. The goal of this coordination is to conduct and align national Navy image, awareness and branding efforts by coordinating existing assets for maximum community-relations impact. NAVCO is governed by OPNAVINST 5726.8, Outreach: America's Navy. More information about NAVCO can be found at www.navy.mil/navco/.

The primary means of outreach is through Navy Weeks, which work to bring a concentration of Navy assets and personnel to America's heartland. This is done through programs like the Navy Speakers' Bureau, Navy Band support, Navy Aviation support, Caps for Kids program, media outreach, and namesake visits during Navy Weeks.

- The speakers bureau program is a way of getting your messages to various facets of the local community by sending speakers to talk about their jobs, the installation and its mission. Your installation is full of people with special skills, talents and interests. Civic groups are always on the lookout for speakers. The public affairs staff is responsible for maintaining a roster of speakers, evaluating requests and coordinating speaking engagements
- Military band performances – Military bands can provide patriotic or military music in the local community when sponsored by non-federal entities. However, Navy bands are not allowed to provide background, dinner, dance or other social music at programs held away from an installation. This would compete with local private bands. They can, however, perform their patriotic or military music and can be used to support recruiting activities. More information on the Navy Bands program can be found on the [NAVCO website](#).

SUMMARY

In this chapter you have learned about the three functions of public affairs – internal relations, public information and community relations. Equal emphasis should be placed on all three, because as a junior MC, you'll likely find yourself working with all three, sometimes simultaneously. With proper planning, each function will work to support the other, satisfying each of your audiences and supporting your command's overall public affairs' goals.

CHAPTER 5

INTRODUCTION TO NEWSWRITING

Learning Objectives: *Upon completing this chapter, you should be able to do the following:*

- *Identify newsworthiness.*
 - *Identify the basic elements of a news story.*
 - *Define the ABCs of journalism.*
 - *Discuss the use of attribution in a news story.*
 - *Explain security, accuracy, propriety and policy (SAPP) in a news story.*
 - *Explain process of localizing and rewriting.*
 - *Explain difference in print newswriting and broadcast newswriting.*
 - *Discuss process of copyediting.*
-

INTRODUCTION

In previous chapters, you read about the fundamentals and functions of public affairs. As you learned, MCs serve as internal media and work with external media and communities to tell the Navy story. For these reasons, you must possess strong writing skills and understand the "nature of news," or what makes a situation newsworthy. This allows you to successfully promote issues and events to the media and your audiences.

The exact definition of news varies from one person to the next; however, one common thread is that news is information people want and need. News is written to inform, peak interest or entertain. News is the timely report of an event of sufficient importance that interests a number of people and possesses a combination of elements of mass appeal.

This chapter covers the elements of mass appeal and writing essentials. To understand and employ these skills is to understand how to efficiently and effectively prioritize your efforts as an MC.

ELEMENTS OF MASS APPEAL

As mentioned above, the definition of news changes from person to person. However, what makes news, news remains typically consistent. We will use 10 major element of mass appeal to identify the nature of news here. To help you remember these elements of mass appeal, use the acronym "SPICE COPPS" to identify them. See Table 5-1.

Table 5-1

- | | |
|---------------------|----------------------|
| • Suspense | • Consequence |
| • Prominence | • Oddity |
| • Immediacy | • Proximity |
| • Conflict | • Progress |
| • Emotion | • Sex |

Suspense

You most often see the suspense element presented in a day-by-day or hour-by-hour account of a high-visibility event. Examples are a desperate search for a lost submarine or rescue operations for trapped miners. A news story may not build to a climax the way a mystery does, so it is important that you cite the most important facts first. This practice helps to heighten the suspense of many stories because the ultimate outcome is unknown and is usually revealed through progressive, periodic installments.

Prominence

Prominence is a one-word way of saying "names make news." When a person is prominent, like the President of the United States, almost anything he does is newsworthy. Several hundred civilians may visit your unit in the course of a month without raising a stir. Yet, if one happens to be a state governor or celebrity, you have a news story packed with prominence. Prominence is not restricted or reserved for VIPs. Some places, things and events have prominence. For example, the White House (a place), the Hope Diamond (a thing) and Fourth of July (an event) all awaken interest.

Immediacy

Immediacy is timeliness. An event that has just happened is news. One that happened a few days ago is history. Few events of major significance can stand up as news if they fail to meet the test of timeliness. The key here is to get your story out quickly.

Conflict

Sporting events, wars and revolutions are the most common examples of conflict in the news. Stories that contain this element generally draw the most interest. Man may be pitted against man, team against team, nation against nation or man against the natural elements. Examples are a story about a pilot struggling to land a crippled plane, a coxswain's heroic efforts to keep his crowded boat from capsizing in heavy seas, or Navy taking on Army in the big game.

Emotion

The emotional element, sometimes called the human-interest element, covers all the feelings that human beings have, including happiness, sadness, anger, sympathy, ambition, hate, love, envy, generosity and humor. Emotion is comedy. Emotion is tragedy. It is the interest man has in mankind. Stories following natural disasters often have emotional ties.

Consequence

News of change or news that affects human relations is news of consequence. The more people affected, the greater the news value. A story on the advancement of 2,500 petty officers has consequence within the Navy, especially to those who took the exams. A congressional act that raises basic pay by 2.6 percent for everyone in the armed forces is of great consequence both to the Navy and to the public.

Oddity

An unusual or strange event will help lift a story out of the ordinary. For example, 100-percent advancement to master chief petty officer is definitely newsworthy, considering typical advancement to E-9 is about 1 percent.

Proximity

Readers are interested in what happens close to them. Proximity is the nearness of an event to the readers or listeners and how closely it touches their lives. People are interested news that affects them, their families, their ships or stations, their friends, and their hometowns. If Capt. John Smith of Newport, R.I., relieves Capt. Bill Stone of Charlotte, N.C., as commanding officer of Naval Station Annapolis, it is news in the Annapolis, Baltimore and Washington areas and in the two officers' hometowns. It is not news in Huntsville, Ala., where no one knows either captain or cares particularly who commands a naval station in Maryland.

Progress

In our technologically advanced society, we are interested in advancements in science, technology, medicine, etc. Progress in the Navy may not be as dramatic, but it remains significant to our audiences. For example, an improvement in mooring lines, shoe leather or leave chits can be significant progress. There is a great deal of progress in Navy news stories. The Navy is constantly making progress in seamanship, weapons systems, aeronautics, nuclear propulsion, medicine, habitability, education, human relations, leadership and other fields.

Sex

Sometimes sex is the biggest, single element in news, or at least it appears to be the element that attracts the most readers. Consider all the stories in papers that involve men and women — military, sports, financial news, society and crime. The element of sex, however, ranges from front-page sensationalism to news involving women serving on submarines. Having all Navy Sailors of the year being female definitely fits into this category. One word of caution is be careful not to overemphasize the sexual element unnecessarily as it may be in poor taste for an official Navy release.

THE ABCs of JOURNALISM

Now that you know what makes news, it's time to discuss writing the news. When writing, you should adhere to the basic principles of newswriting, otherwise known as the ABCs of journalism — accuracy, brevity and clarity. By doing so, you will build trust and credibility from your audiences.

Accuracy is a must for spelling, facts, figures, style, grammar, and policy. If the information you're releasing is incorrect in any way, what's the point? People have to trust you to get the news **right**. If you can't, you've lost your credibility.

Brevity is all about keeping it short. Be concise, and eliminate wordiness and redundancy.

Clarity means writing in a way that is understandable to your audience. It's writing at a middle school reading level. It's putting numbers/statistics in context. It's staying away from slang, technical terms or acronyms and abbreviations readers may not understand. Sometimes, it's very easy to forget that not everyone reading your article is IN the military. You should always write with the knowledge that John Q. Public is also a big part of your audience, even for your internal publication.

SAPP

Before you proceed further into this chapter, take a moment and review SAPP, discussed in Chapter 3 of this module. Like the ABCs of Journalism, SAPP is extremely important in your role as a Navy MC. SAPP stands for security, accuracy, propriety and policy. **DO NOT VIOLATE SAPP.**

EDITORIALIZING

The writer's personal opinions should never be injected into a news story – this is called editorializing. The only persons permitted to express an opinion in a news story are those identified in the story itself. Even then, the opinion quoted must be attributed. Attribution will be discussed later in this chapter.

News stories should be written in the third person and facts should be reported as they are found, without personal pronouns referring to the writer.

Consider the following examples of editorializing in straight news copy, then note the following suggestions offered to eliminate the implied opinions:

- **Poor:** Lt. Steven Post is exceptionally well-qualified for the position
- **Improved:** Lt. Steven Post, with a degree in law, has eight years of experience as a legal officer
- **Poor:** An interesting program is planned for tonight at the Officer's Club
- **Improved:** The program scheduled for the Officer's Club tonight includes...
- **Poor:** The punishment was unjust
- **Improved:** The U.S. Court of Military Appeals ruled the punishment imposed by the court-martial was unjust.

ANATOMY OF A NEWS STORY

An internal news story is one of the best ways to get information out to your command as has been discussed. Taking all of the many things you have learned to this point, it's time now to start building a news story. But where do you start?

Inverted Pyramid

Statistics have shown that the average person may only spend about 15 minutes a day reading the news in hard-copy form or online. Therefore, basic news is written in the inverted pyramid style, which means front-loading the most important facts then continuing through the article in descending order of importance.

The inverted pyramid (See Figure 5-1) can be broken into three parts – the **lead**, **bridge** and the **body**. This structure allows readers to get the news they want fast so they can move on to the next news item without missing anything essential.

In addition to meeting the needs of the typical newsreader, the inverted pyramid also benefits editors and publishers. With the average commercial newspaper or online news source containing about 60 percent advertising and 40 percent news, editors and publishers look for ways to save space. So, they cut copy. By using the inverted pyramid, they can delete copy from the bottom up and still tell the story without adversely affecting the reader's understanding of the content.

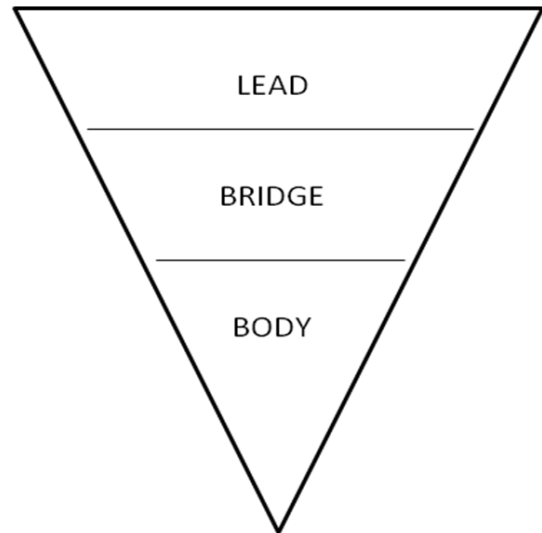


Figure 5-1, Inverted pyramid.

Lead

The lead is at the top of the inverted pyramid. It is not only the first and most important paragraph of a news story; it is the essence of what you know about the event. It is written crisply and tightly and provides the important facts first.

Along with a headline, the lead brings the reader into the information. Your lead grabs the reader by the collar and screams "READ ME!"

Summary (News) Lead – The most common news lead is the summary lead. A summary lead gives the reader the facts that most clearly and compellingly tell what the story is about, without editorializing or including any unnecessary wording. If you've done your job, the summary lead will draw the reader into the rest of the story, where other details will be provided.

Summary leads contain the five W's and H of the news story – who, what, why, when, where and how. Why and how are sometimes a given or left out when the information is not available. For example, if a helicopter crashes on a flight deck, the initial news story will not have a why element. This is because an investigation into the "why" must be conducted.

A summary news lead is a one-sentence paragraph, 30 words or less. Brevity is important – shorter leads can be hard-hitting – but be certain not to leave out critical information. Another reason for limiting the length of a summary lead is that 30 words equals about one column inch of copy in print. This is long enough for the writer to provide the essential facts, but short enough to keep the reader's interest.

News Peg – A news peg is found in the lead and is the most significant or interesting fact in a story. It is the reason you are writing the news story. Something happened or is scheduled to happen, or there wouldn't be any reason for you to write a story. For example, if there was a fire in housing, then you'd write a story about the fire for the newspaper. The fire is the news peg.

Lead Emphasis – From the news peg comes the lead emphasis – the most important of the five W's or the H. This item is the very first piece of information presented in the summary lead; it

receives the most "emphasized" position in the lead. The key to selecting the right lead emphasis is to remember the reader's point of view and the elements of mass appeal.

Here are some general rules to guide you in selecting a good lead emphasis:

- **Who** or **what** is most commonly used for the lead emphasis, because readers want to know about other people or what they are doing
- If the event affects one person, a **who** lead emphasis works well (e.g., who is receiving an award)
- If the event affects more than one, a **what** lead emphasis would work well (e.g., a concert)
- **When** and **where** are seldom used as lead emphases, because they are rarely as important as the who or what. Remember these items must still be included in the lead
- **Why** and **how** are used only when extremely important or unusual. Most often, **why** and **how** lead emphases are used in follow-up stories after incident/accident investigations are complete.

Impersonal Who – Think back once again to the elements of mass appeal and the nature of a subject's prominence. In newswriting, if you can't be sure your **who** will be easily recognized, you will use an impersonal who to identify that subject in the lead. Full identification of your **who** will then be made in the bridge, the second paragraph of your inverted pyramid news story. The impersonal who contains two primary elements – the person's job title and unit/organization. Here is an example of an impersonal who used in a Navy story:

Georgia governor welcomes Navy week

By Mass Communication Specialist 1st Class (SW/AW) Davis Anderson, Navy Office of Community Outreach Public Affairs

The governor of Georgia welcomed Atlanta Navy Week 2010 with a proclamation ceremony held at the North Wing Rotunda of the Georgia State Capitol building Oct. 13, coinciding with the U.S. Navy's 235th birthday.

During his opening remarks, Gov. Sonny Perdue expressed his appreciation for the Navy.

Dateweek

Before we move on to discuss the bridge of a news story, it's important to take a minute to discuss the "when" element found in the lead. **Dateweek** is the tool journalists use to determine whether they should use the day of the week (Sunday, Monday, Tuesday, etc.) or the month and date (Sept. 12, Jan. 13, April 10, etc.) to tell readers the when of the news event. Although a common practice in some publications, using both the day of the week and the month/date is redundant.

The first step toward understanding dateweek is to remember that it contains a total of 13 days. It doesn't matter whether your publication is a daily, weekly or monthly -- it's still 13 days from one end to the other.

The 13 days of the newspaper dateweek break down like this:

- The day in the center is the day your newspaper gets published (hits the streets to be picked up and read by your audience)
- There are six days before the publication date
- There are six days after the publication date.

The six days before and the six days after the publication date are within the newspaper dateweek for that week's publication. When an event has taken place or is scheduled to take place within that dateweek window, the when of the event is given using the day of the week (Monday, Saturday, etc.). If the event is scheduled for the day of publication, you should use the word "today." Your verb tense lets the reader know the event has happened or is going to happen. Do not use "tomorrow," "yesterday," "next" and "last."

Example (publication day is Thursday, Oct. 21, 2010):

The annual haunted trail opens today at Carr Point and will run each evening through Halloween from 7 to 9 p.m. (Trail opens the day the publication hit the streets.)

The annual haunted trail is scheduled to open Friday at Carr Point. (Trail opens Oct. 22.)

A meeting to discuss telecommuting for Sailors stationed in the Jacksonville area was held Monday in the base auditorium. (Event was held Oct. 18, prior to the publication day.)

The USS Crommelin's Family Readiness Group will welcome new members Nov. 2 during its monthly meeting in the Fleet and Family Service Center conference room. (Scheduled date is out of 13-day dateweek range.)

When writing about something that is happening or happened in a different year, the year should be included. Punctuation of a day, month and year in a sentence is (notice the year is set off in commas):

The U.S. frigate Constitution launched on Oct. 21, 1797, in Boston.

Bridge

After you have written the lead for a story, what do you do next? In some stories, you will find the transition from the lead to the body of the story a bit awkward. To transition smoothly and stay within the inverted pyramid structure, use a writing device known as a bridge. A bridge is a connecting paragraph between the lead and the body of the story.

As with the lead, the bridge is limited to 30 words or less. The bridge builds upon the information found in the lead. You can use the acronym WAITS to determine what kind of information might be important to include in the bridge. A bridge contain at least one of the five elements in the acronym WAITS but will usually include at least two.

- **W** = W's or H not included in the lead
- **A** = Attribution
- **I** = Identification

- **T** = Tieback information
- **S** = Secondary facts.

Five W's and H — As you learned above, the summary lead must contain at least four of the six news elements: **who**, **what**, **when** and **where**. These elements of information are reflective of the first questions a reader will usually ask. The **why** and **how**, if available, are routinely placed in the bridge, because they are usually not considered so crucial that they must be part of the lead. They also tend to be longer pieces of information, which often precludes them being included in the lead.

Example:

- (Lead:) The deadline to update emergency data forms for Sailors here has been extended to Wednesday
- (Bridge:) The personnel office staff wants to be sure all Sailors have the opportunity to update this information.

Attribution – Attribution tells readers the **source** (person) or **authority** (directives, regulations, etc.) from which information was obtained. Because a writer cannot inject his own opinions into news, attribution lends credibility to the information. Attribution is seldom used in the lead, but often appears in the bridge.

Example:

- (Lead:) Male Sailors stationed here will no longer be allowed to wear earrings while off duty, beginning Monday
- (Bridge:) The jewelry has contributed to several fights at downtown clubs, **according to Capt. John G. Jones, commanding officer**, who instituted the policy after consulting with the base legal office.

NOTE: *The writer identified a policy change in the lead. An MC doesn't have the authority to make such changes, so he or she must identify who is setting this policy. In this case, the bridge also contained the **why** element.*

Information that needs to be attributed includes:

- sources of direct or indirect quotes
- statements of fact that are not readily verifiable or facts that are disputable
- information that is not common knowledge
- policy changes
- opinions – professional (doctors, lawyers, governmental experts, police, etc.) or otherwise. Opinions are views, judgments or appraisals formed in a person's mind about a particular matter.

Not everything absolutely must be attributed, however. Generally, you do not need to attribute

- facts that are historically true, such as the year the Battle of Gettysburg was fought (1863)

- facts that are easily verifiable, clearly self-evident, commonplace or clear, such as the fact that in our solar system, Venus is the second planet from the sun.

When in doubt, ATTRIBUTE. Attribution allows the reader to judge the value of the facts based on the prominence/authority of the source. Guidelines for use of quote and attribution will be discussed later in this chapter.

Identification – The “I” in WAITS is identification. This element builds from an impersonal who found in the lead. If an impersonal who is used in the lead, full identification is required in the bridge. Full identification includes the following items (These requirements apply to full identification of sources used in the story body as well):

- Service — if the person is not a member of the host service, identify the person’s service affiliation. For example, if you’re writing for publication on a Navy base, it’s not necessary to identify Navy individuals as being in the Navy. However, you DO have to identify by service any non-Navy service members mentioned in your stories. Example: Army Staff Sgt. Mary Ferguson participated in the training ...
- Rank/paygrade – List rank according to the AP Stylebook (unless the person is a civilian) for external news releases, but follow Navy style for Navy.mil and internal publications
- Full name – Include a person’s middle initial unless person requests otherwise or does not have a middle initial
- Age – If the person is deceased or the age adds interest to the story, it should be included. Releasing someone’s age is not always possible due to privacy issues; ages of the dead are releasable, but ages of the living may or may not be. In some cases, age is considered essential to the story because it has direct bearing on the story’s importance. For instance, if a 27-year-old climbs Mount Everest, it’s not as big a deal as it would be if an 88-year-old did it. In the case of the 88-year-old, it’s essential
- Hometown – Listing the person’s hometown adds marketability to the story. However, similar to listing one’s age, ensure there are no reasons why this item should not be included. Remember Fleet Hometown News.
- Job title – Unless used in the lead, include the person’s job title
- Organization – Same as job title above.

NOTE: *Be very careful not to confuse job title, rank/paygrade and service. Each is a completely separate type of identification. "Coast Guard" is not a job title, it's a service. "Petty Officer 2nd Class" is not a job title, it's a rank/paygrade.*

Once a person has been fully identified, use only the last name in subsequent references unless there are two or more people with the same last name mentioned in the story.

Example:

- (Lead:) A journalism instructor at the Defense Information School was named Fort Meade Sailor of the Quarter in a ceremony Tuesday at the post’s Club Meade.
- (Bridge:) Navy Petty Officer 1st Class Dwight J. Evans teaches basic videography for the Basic Mass Communication Specialist Course.

- Tieback – This newswriting device brings the reader up to date on past and present events. It is a short recap frequently is used in follow-up stories.

Example:

- (Lead:) The Canadian icebreaker MacDonald, with the help of U.S. icebreakers Glacier, Staten Island and Northwind, is free from the arctic ice pack that threatened to maroon it until next summer
- (Bridge:) MacDonald was making the trip back from the research station ice-island T-3 when it began experiencing difficulties in the polar ice.

Secondary Facts – Secondary, but significant, facts serve as a transition from lead to body. The bridge is often used to give the reader information that is significant, but not important enough to be placed in the lead. Since the bridge often amplifies the lead with attribution and identification, secondary facts are often part of this paragraph.

Example:

- (Lead:) Most of Naval Station Newport was without electrical power for three hours after Tuesday's thunderstorm
- (Bridge:) In addition to downed power lines, several trees were uprooted, and considerable damage to mobile homes was reported at the post trailer court.

If well written, you could theoretically print just the lead and the bridge without depriving readers of any vital information; note how many newspapers use "news briefs" that are only two or three paragraphs in length.

Body

To produce a smooth, final story, the lead, bridge and body must coincide. The body is the detailed portion of a news story that develops and explains the facts outlined in the lead and bridge. Here again, the importance of a neatly tailored lead cannot be overemphasized. A cumbersome lead is most often followed by a cumbersome body. But when a lead has done its job, it provides a blueprint for the orderly organization of facts in the body of the story.

Guided by the idea of news importance, the writer proceeds through the story by selecting the next most important incident, fact or detail, then the next important, and so on, until reaching the least important of all. At this point, the writer has reached the apex of the inverted pyramid with material of least value. The writer now knows that the editor can slice one, two, or three paragraphs from the bottom of his story without depriving the reader of the story's chief news elements. The table below shows a diagram of a straight news story structure.

SUMMARY LEAD	A Navy officer who had never before taken control of a single-engine aircraft brought an Air Force spotter plane in for a rough, but-successful landing Oct. 12 at Eglin Air Force Base.
FACT 1 (bridge)	Lt. John G. Smith of Jackson, Miss., walked away from the emergency landing only "slightly shaken up," said Air Force Col. Arnold Phillips, Eglin's senior medial officer.
FACT 2	The incident came about after the pilot, Capt. Fred Johnson, 28, died of a heart attack during a routine training mission over the Gulf of Mexico in an area 60 miles southwest of the base.
FACT 3	A former enlisted man, Smith served as an aerial photographer for several years and credits his general familiarity with aircraft in helping him land the plane.
FACT 4	Presently assigned to Eglin as a Navy liaison officer, Smith reported to his present duty station in July 2009.

A hard news story doesn't have a formal conclusion. It just ends when you run out of information that pertains to the story. Remember, after the lead and the bridge, all or part of the body should be easy to cut without losing valuable information; that's the beauty of the inverted pyramid.

Organization is the key. Answer the questions that are most important to the readers first. And produce in the body what you promise in the lead: if the lead says the story is about a fire, then you must restrict the body of the story to giving information only about that fire. Always include all available information that does not violate security, accuracy, policy or propriety. It is not your job as a reporter to decide what gets cut and what does not; that's the editor's job. If you've written the story in inverted pyramid style, nothing truly important will be lost.

Tips for writing the body:

- Don't bury important information in the body. Never assume readers will get that far into your story
- After the lead and bridge, stick to "one idea per paragraph" construction, but break up paragraphs that get too long (three sentences per paragraph is about the max)
- Keep sentences short: 30 words or less works all the way through a news story
- Keep sentences simple: whenever you can, use subject-verb-object structure. That doesn't mean you will never use passive voice. Considerations such as the correct lead emphasis may force you to write a passive-voice sentence
- Use easy-to-understand words and phrases. Write to EXpress, not IMpress!
- Use strong, active, accurate verbs, but be careful with adjectives. Do not editorialize
- Be specific and accurate. Is he a sergeant or a technical sergeant
- Avoid repeating facts
- Smooth out your writing by eliminating words that do not add meaning. Remember brevity
- Don't use the same word to start every sentence/paragraph. A commonly repeated beginning word is "the"
- Use vivid quotes to liven up the story
- Let the editor decide what to discard, but if a quote or phrase is speculative and/or lacks authority, throw it out.

Using quotes – Quotes should not only be used in the bridge but also in the body of the story. They add variety, authenticity and a "voice" to the news. Unfortunately, some reporters don't attribute the spoken word correctly. They think they can just put quotation marks around anything they like, or toss in an opinion and not mention the source of that information.

When using quotes, remember this very basic, but important, rule: Direct quotes are verbatim spoken words or to-the-letter published material. Anything else is paraphrased, or indirect, information.

NEVER fabricate a quote or alter a quote and leave it in quote marks, not even to fix someone's grammar. Doing so is the same as altering a photograph (as you will learn in Module 2): it is *unethical* and *dishonest* because it is changing the facts. *It is not a journalist's job to change the facts, but to report them.*

Use quotes sparingly and only when they are memorable. Quotes set off controversial material, helping fortify a point and highlighting language.

Quote abuse is one of the most common problems in journalism. Beginning journalists tend to quote material that doesn't say anything unique. For instance, if you quoted the commander saying, "*The duty day runs from 0730 to 1630,*" you would start losing your readers. This type of quote is neither memorable nor effective. It's common, easily verifiable information.

A good rule for knowing when to use quotation marks, according to successful freelance writer Art Spikol, is to "Use them to set off revealing, significant statements -- not to give statements significance."

Direct Quotes – A direct quote states EXACTLY what a person said, EXACTLY the way he or she said it, and it appears inside quotation marks:

"Our graduates serve both soldiers and the American taxpayer," said Hobson. "The public's interest must be our interest. There is no excuse for fiscal irresponsibility; the public won't accept it, and neither should we."

Direct quotes must never be altered, for any reason whatsoever. If a quote is too "bad" to use verbatim because of grammatical errors or for other reasons, paraphrase and run it as an indirect quote.

Indirect Quotes – When you change the words someone said while leaving the meaning intact, the result is an indirect quote, or paraphrasing. Quotation marks are NOT used with indirect quotes:

School graduates serve both soldiers and the American taxpayer, said Hobson. "The public's interest must be our interest. There is no excuse for fiscal irresponsibility; the public won't accept it, and neither should we."

When paraphrasing, make absolutely sure you ARE NOT changing the meaning of what the person said. If you do, you have not reported the facts accurately.

Partial Quotes – When you use some, but not all, of a direct quote, you're using a partial quote. Only the portion of the quote that's used verbatim should appear inside quotation marks.

Direct Quote: "For 50 years, we have tried to provide the Army with finance officers who can move tanks, troops and mountains with their comptroller skills," Hobson said. "That's the power of the

purse string in today's Army. We need finance officers who can handle the task fairly and with fiscal responsibility."

Combination using partial quotes (underlined for training purposes): For 50 years, the school has worked to provide Army officers who can "move tanks, troops and mountains with their comptroller skills," said Hobson. "That's the power of the purse string in today's Army. We need finance officers who can handle the task fairly and with fiscal responsibility."

Partial quotes should not be used frequently. If you use them at all, try to limit them to one or two per story, maximum. Usually it's better to use a direct or indirect quote than to resort to a partial quote, but they can be used occasionally for variety.

Here's why:

- People begin to wonder what you're omitting -- and why
- Partial quotes can be hard to read and interpret
- They interrupt the normal flow of a sentence.

Tips for using quotes (reiterating from the information above):

- Don't let quotes tell the entire story. Sprinkle them throughout. Don't "slosh" them everywhere
- Provide the quote itself before the attribution most of the time, because what is said is more important than who said it. Mix it up occasionally only for variety's sake
- Keep the person's name and the attributive verb together
- Correct example: "...," *said Carlton F. Fisk, a civilian machinist*
- Incorrect example: "...," *Carlton F. Fisk, a civilian machinist, said*
- Don't use words such as "thinks," "feels," "believes," etc., as attributive verbs; "said" is the best attributive verb for ANY type of attribution
- Be consistent with attributive verb tense: use either past tense (said) or present tense (says) throughout, but not both in the same story. Past tense is preferred. (This applies to other verbs in the story, too)
- Use first-person personal pronouns (I, me, we, our, us, etc.) only in direct quotes. If you paraphrase a quote, you must change personal pronouns to words such as he, she, they, them, etc
- When you begin to quote a new person, begin a new paragraph. Mixing quotes/information from two or more people in the same paragraph causes reader confusion
- When mixing direct and indirect quotes in the same paragraph, place the attribution with the direct quote. Never leave a direct quote hanging without attribution
- NEVER alter a quote and still use quote marks — not even to "fix" grammar problems. *However, punctuation is fixable as long as it does not change the meaning of the quote*
- NEVER FABRICATE A QUOTE. Your job is to report the news, not make it up.

EXTERNAL PRESS RELEASES

The information above outlines the anatomy of a news story. This structure is geared toward internal news releases, but the information is also applicable to externally released products. **External releases** are sent to external news media for dissemination to the American public.

Before you send an external release to the media, be sure to carefully evaluate the information's news value and related it to the external audience. By doing so, you stand a better chance of having the release used by the media.

News/Media/Press releases

The primary difference between the internal news stories written for your command publication and the external release written for the news media is the **audience**.

External releases are used to send stories outside your internal audience area. Most public affairs offices have release forms and established formats. While form styles and formats may differ from shop to shop, the information is released basically the same way.

Types of external releases

Hard news external releases fall into four general categories:

- "Kudos" stories feature hometown stories or award ceremonies. (Do not release proposed awards)
- Announcement stories feature contract awards, public safety announcements, gate closings, exercises and their impact on communities, etc
- Public event stories feature public visitation, tours, changes of command, etc
- Accident/incident releases inform of accidents/incidents involving military assets, including people and property.

Note: An external release can also be a feature story. You'll learn more about features in Chapter 7.

Datelines

A dateline is a journalist tool unique to external releases. It tells the reader where the story originated (was written). It does not necessarily tell where the news event happened, which is why we often use words like "here" as the where element in leads.

Datelines must be used on all releases sent to external media. You should also find them on stories received from outside sources. The reason for this is to make sure the reader understands the story was not written at your unit but was filed or submitted from another source. Commonly, you will see datelines from Navy News Service, Army News Service, Air Force Print News, Navy Exchange Command, etc.

Datelines are not needed for internal stories you generate that will appear in your internal publication.

A little history: Before modern technology, when news took days to travel across the Atlantic or across the country, the date the story was written was much more in doubt than it is today. Therefore, the date the story was written appeared in the dateline — hence the name. Today, the date is usually within 24 hours and can be easily determined by reading the time reference in the lead (date-week). So while we still call them datelines, a more accurate description might be "placelines." You may still see dates in datelines in news sites on the Internet, but they are not commonly used elsewhere.

Format – Datelines are written in a specific format to ensure consistency throughout the media. The dateline is found at the very beginning of the news story in the same paragraph as the lead. It consists of a city and state or city and country, and is followed by a dash – a dash, not a hyphen. The city is written in capital letters, while the state or country is not.

Some cities, both nationally and internationally, are prominent enough, however, that the state or country is not needed. These cities are identified in the datelines entry of the AP Stylebook. For releases sent to Navy.mil, Great Lakes, Norfolk, San Diego, Pearl Harbor and Arlington stand alone as well due to their strong Navy ties.

EXAMPLES:

NEW PORT RICHEY, Fla. — Navy Junior Reserve Officers Training Corps (NJROTC) units from schools throughout Florida gathered to compete in personnel inspection, drill, color guard, academics and athletics at the 3rd annual Mitchell Mustang Stampede at J. W. Mitchell High School, Oct. 16.

NEW AMSTERDAM, Guyana — The Continuing Promise 2010 (CP10) Partnership of the Americas mission aboard USS Iwo Jima (LHD 7) dropped anchor just off the coast of New Amsterdam, Guyana, Oct. 17.

The local angle

The lead for an external release differs from an internal news lead. One of the 5Ws or the H is still used for lead emphasis, but the information is evaluated and applied a little differently. In an external release, you must establish two things. The first is the **local angle**.

- The local angle lets an editor immediately recognize why the story is important to his audience
- The local angle is the lead emphasis; it will be the first few words of the lead, immediately following the dateline.

Say you are in Peoria, Ill., and you see a story with a lead that reads (*Original article edited to be used as an example:*)

PEARL HARBOR — The director of the Universal Picture's movie "Battleship" hand-picked a Sailor assigned to the aircraft carrier USS Ronald Reagan (CVN 76) to be a part of the movie while it was filming at Joint Base Pearl Harbor – Hickam on Sept.13-14.

Petty Officer 2nd Class Jane L. Sailor was playing soccer for a U.S. Navy team during a Rim of the Pacific (RIMPAC) 2010 sports game last July when the director, Peter Berg took notice of her and wanted her to be part of the movie as an extra and a military technical advisor to Rihanna.

Why would the audiences in Peoria care about this news story? By reworking the release a bit, you can target the article to the Peoria audience.

PEARL HARBOR — A 1992 graduate of Peoria High School, currently serving as a gunner's mate aboard the aircraft carrier USS Ronald Reagan (CVN 76), was hand-picked by the director of the Universal Picture's movie "Battleship" to be a part of the movie while it was filming at Joint Base Pearl Harbor-Hickam on Sept. 13-14.

Petty Officer 2nd Class Jane L. Sailor playing soccer for a U.S. Navy team during a Rim of the Pacific (RIMPAC) 2010 sports game in July when the director, Peter Berg, took notice of her and hired her to be the military technical advisor to Rihanna.

Military tie

The second necessary item in an external news lead is the **military tie**. This is the public relations side of PA. If you don't have a military, or Navy, tie to the release, you have no reason to send from your PA shop. The military tie explains to the editor why it is coming from your command on your news release letterhead.

In stories about individuals, the individual's job title (or rate/rank) and unit often double as the military tie. In these cases, the military tie is often set off by commas:

PEARL HARBOR – A 1992 graduate of Peoria High School, currently serving as a gunner's mate aboard the aircraft carrier USS Ronald Reagan (CVN 76), was hand-picked by the director of the Universal Picture's movie "Battleship" to be a part of the movie while it was filming at Joint Base Pearl Harbor-Hickam on Sept. 13-14.

The rest of the lead

Remember, whether a lead is for internal or external publication, you must still ensure:

- It contains a who, what, when and where (at a minimum).
- It is one sentence, 30 words or less.
- It contains an external dateweek.

An external dateweek for external releases you send out is figured the same way as for an internal release, **but the publication date is different**. The publication date for an external releases is the day the release is sent to the media. This date is also found in the header of the release (more to follow on release headers). When you use the word "today" in an external release, it means the date on the release.

The date on the header must be correct. If you put the wrong date on a release and use the word "today" in the story, you have created a major error in fact.

External release header

The template used by your shop for external releases is at the discretion of the PAO. However, the header of your choice must contain the command's name and address, point-of-contact information, a release number and release instructions. Recipients of the release will need this information if they have follow-up questions or concerns. One word of caution when creating your template: Using

your command logo or creative graphics is discouraged as these items are typically large and will clog people's inboxes.

NEWS RELEASE	
COMMAND ADDRESS COMMAND NAME PHONE/EMAIL	DATE OF RELEASE
RELEASE NUMBER/YEAR (#1-10)	RELEASE INSTRUCTIONS [FOR IMMEDIATE RELEASE OR EMBARGO UNTIL (DATE HERE)]
HEADLINE Byline DATELINE – NEWS LEAD BRIDGE FACT FACT ###	

Release Number – News releases should be tracked for accountability and cataloging purposes. Most shops use the number, hyphen, year format. In the example above, the release number, #01-10, identifies that the release is the first release for 2010. Traditionally, hard copies of releases were logged and kept in the office. Today many shops keep only electronic copies.

Release Instructions – Most of the external releases you send will be "FOR IMMEDIATE RELEASE," which means you want the media to use the information right away. Another option is to use "EMBARGO UNTIL <date>", telling the editor to hold the information until the date specified. Keep in mind, editors and journalists are under no obligation to honor an embargo. Some shops use "hold for release" vice "embargo until."

External Release Bridge/Body

Rules and guidance for writing the bridge of an external story remain the same. The bridge should be kept to one sentence, 30 words or less.

In the body of an external release, you will again use the inverted pyramid style of newswriting. The difference is the audience and the organization of the remaining facts. What is important to a military audience may not necessarily be the same with an external audience. Therefore, the order of the information should be arranged to include any local angle information up front. When organizing your facts, ask yourself what impact each has on the reading audience. Don't leave out information; just arrange it differently if necessary.

All releases, internal and external, should end with a code to let the reader know that there is no additional copy. Historically, the codes "XXX" and "-30-" have been used. "XXX" originated during the Civil War when copy was sent over telegraph lines. It is also the Roman numeral for 30, thus inspiring the "-30-" ending. Modern press tends to use "###," while many Navy commands use "USN."

MEDIA ADVISORY

A media advisory is an abbreviated form of a news release intended to encourage the media to cover an event themselves. The news advisory is normally no more than a page in length and includes a compact-description of the event. Pertinent information, such as the date, time, location, specific details, and the significance of the event, also should be included. You may disseminate the news advisory in the same manner as a news release.

This is an example of an advance story. When constructing an advance story, you must develop strong local angles, noting events or items that will be of particular interest. The inverted pyramid structure is appropriate for the advance story. Consider the elements of mass appeal when you are formulating your lead. Emphasize the magnitude of the story or stress the unusual, depending on the topic. The lead will generate interest by stating the most notable parts of the event first.

As with all public affairs products, planning is key. Schedule your advance stories appropriately, ensuring that you give the media adequate time to plan coverage. However, don't exploit the event and always ensure the event is a legit one.

ACCIDENT/INCIDENT STORY

Accidents and incidents happen in the Navy, and Navy MCs play a key role in informing the public during these times. As mentioned in earlier chapters, the principles of information guide us to release as much information as we can with a minimum time delay. The goal for releasing an initial accident story is one hour with coordination with all other pertinent persons at your command.

The initial release is written as a hard news story with some exceptions. The initial release will leave many unanswered questions, because within one hour of such an event, much may not be known. However, you should be able to gather basic information:

- A dateline
- Initial number of killed and/or injured
- Brief description of the accident or incident, to include the what, when and where
- A next-of-kin statement – "The names of the dead and injured are being withheld pending notification of next of kin"
- Information regarding search and rescue operations
- A statement of investigation. "The cause of the accident (incident) is under investigation."

You must ensure no information is released that violates privacy rights of surviving service members or their family members. Home addresses must never be released.

LOCALIZE AND REWRITE

In the external release portion, you learned that in a PA shop you not only send out news stories, but you also receive releases from outside sources. Before you publish this information, you must localize and/or rewrite the release to meet the needs of your audience. The principles of localizing and rewriting are the same as those for newswriting. The following are six reasons for localizing and/or rewriting:

- To localize general information
- To improve poor copy
- To update material
- To transform informal reports into properly written news stories
- To combine two or more stories
- To change story emphasis.

Once you identify a story that may be of interest to your readers, it's time to begin the localization and rewriting. Localizing straight news stories means gathering facts about the local news peg, writing a lead that emphasizes the local angle, then providing the other details (both local and nonlocal) in descending order of importance. Localize by gathering information from local sources, subject-matter experts at your command who can help tell how the story affects your audience.

For example, when the Navy released information about the rolling out of the new working uniforms, MCs fleetwide contacted local uniform shops and command leadership to find out when the uniforms would be available in their area and what local policies would be set regarding the wear of the new uniforms.

Attributing sources – Readers want to know the source of the material they're reading, so they can trust in it. So, be sure to credit the news service material you localize. You can do this by including a tagline at the end of your story. For example: (Information from a Navy message was used in this story.)

Remember that just because you are crediting the news release does not mean you will always use all of the information verbatim. The majority of the information will be rewritten and reorganized to best serve your audience.

Quotations – Direct quotations from the original news release, however, should be used verbatim, but make sure you accurately adjust the source's identification information for use in your publication. For example, in a news release with a Washington dateline, a source identified as Navy Capt. John J. Smith, the director of emergency services here, should be rewritten to properly ID where Capt. Smith is located. In your updated article for a Norfolk publication, you would list him as Capt. John J. Smith, the director of emergency services in Washington, D.C.

FOLLOW-UP STORY

A follow-up story is one that ties back to a previous story and informs the reader of the most up-to-date information. A follow-up story is only released when new information is available. For example, information received about a Sailor previously listed as missing has been found calls for a follow-up story.

When writing the follow-up story, the new information becomes the lead emphasis and a new lead is written surrounding this information.

Original release:

NORFOLK – A search is underway today off the coast of Cape Hatteras, N.C., for a USS Mitscher (DDG 57) Sailor who was reported missing today after not showing up for a 12:15 p.m. muster.

Follow-up story:

NORFOLK – A Sailor assigned to USS Mitscher (DDG 57) was rescued at 5:40 p.m. today after spending five hours in the water off the coast of North Carolina.

The Sailor, whose identification is being held pending the notification of his next of kin, was reported missing following a 12:15 p.m. crew muster.

If you are following up on an accident story to identify people who were killed or injured, you must ensure that all next-of-kin notifications have been made and you meet the 24-hour requirement. The names of the killed and injured are typically found in the bridge of the story. However, if 10 or more people were involved you may want to consider waiting until the end of the release. No matter where you place the information, it is important to list the individuals in alphabetical order.

SPORTSWRITING

The straight sports story is no more than a straight news story about a sports event. The same rules for accuracy, brevity and clarity apply. The summary — although it contains seven elements — should summarize the story.

- Who played whom
- What sport did they play
- What was the score (who won)
- Where did the event take place
- When did it take place
- How was the contest won (last-second field goal, etc.)
- What happened.

EXAMPLE:

MUNCIE, Ind. (AP) — Junior Chandler Thompson poured in 32 points and hauled down 14 rebounds to lead the Ball State Cardinals to their 14th straight victory, a 78-61 rout of Nebraska, in college basketball here Saturday.

In the **bridge**, you should provide a solid transition into the body. It can introduce information about the significance of the contest or add supporting facts.

EXAMPLES:

The victory improved the Cardinal's record to 21-5 and marked the third straight year they have won at least 20 games.

OR

Thompson, a 6-foot-4 forward with a vertical leap of 44 inches, has now scored 30 or more points six times this season and grabbed 10 or more rebounds 11 times.

The **bridge** in the second game story can tie back to the earlier game by recapping how game one was won. With the significance of the outcome, don't wait until the bridge to tell readers someone won the championship. This must be in the lead.

EXAMPLE:

- (Lead) Three-hit pitching by Toby White sparked Naval Station Norfolk's Sharks to a 4-1 triumph in Game 2 and a championship win over Joint Expeditionary Base Little Creek's Gators in Hampton Roads' slow-pitch softball action Wednesday night at D.B. Sailor Memorial Stadium here.
- (Bridge) In Game 1 on Tuesday night, Sharks shortstop Tom Theodonis led the lineup with three hits, including a three-run home run, giving the Sharks a 5-4 win.

The **body** should provide detailed information, inverted pyramid style. However, a new writer or non-sports fan may not be able to distinguish most important to least important, so chronological order can be used until the writer becomes more familiar with the sport.

Common sense - and that really is what sportswriting is -- should dictate what details are included. In **football**, scoring plays usually are relatively infrequent. So, you probably should mention each one, usually in a one-or two-sentence paragraph.

In **basketball**, on the other hand, individual scoring plays are numerous. To recount how every point was scored would require a small booklet. The story, consequently, should include key scoring plays and a listing of collective scoring contributions for both teams.

True sports fans greatly appreciate a **box score**. Sports fans are statistic-oriented, and the more statistics, the better. A box score is usually added at the end of the story in bold type smaller than regular copy type.

The **sports headline**, like its straight news counterpart, is a "superlead" condensed summary of who-beat-whom-by-how-much. Usually there isn't room to get into the How element in a headline, but if the room is there, it makes for stronger headline content. *(We will talk about headlines in a subsequent chapter of this module.)*

Sharks clip Gators 7-6

Unlike many other areas of potential coverage, there's usually a lot more sports at the average installation than the newspaper has the staff to cover or the space to print. So some selection process is necessary.

Your unit, for example, probably has six to 12 slow-pitch softball games on tap Mondays through Thursdays during the softball season. To cover each game with a story and photos would require a huge sports staff and many pages of copy. A better idea is to select a weekly game or two to cover in complete story forms.

Criteria for picking the games might include consequence (a meeting of two undefeated teams or even two winless teams) or prominence (the defending unit champions against last year's runners-up).

Other games can be covered by publishing results in "line score" form. Included at the end of the synopsis could be the schedule for upcoming weeks.

Some knowledge of the sport you're going to write about is necessary. No matter if you are a sports' fan or not, research of the subject should be conducted before heading for the ball diamond or gym. Read the news, check out the sports chapter in the AP Stylebook, and watch television to learn about sports.

The guideline for coverage is the newspaper audience. If enough people at your command participate in an activity, they deserve space in the sports pages. If someone relevant to the readership wins a marksmanship contest, races go-carts, runs the Boston Marathon or once played against LeBron James, that someone is an excellent subject for the sports page in the form of a feature.

Whatever the sport, enough research material is available to enable the writer to write a good story. Remember, the sports story is just a straight news story about a sports event.

Sports verbs

The basic sports story is about someone losing and someone winning. To make that worth reading, sports writers and their editors have developed synonyms without end for **win** and **lose**. Still, working against a deadline, writers are likely to go with a handful of old favorites. Some guidelines and an incomplete glossary of accumulated sports slang below may be helpful in preventing such embarrassments.

- Avoid kill, murder, assault and the like. These are serious criminal offenses and are not appropriate for describing sporting events
- Take care with names that have other meanings: O'Rourke crucifies St. Paul
- Intransitive verbs need no object and make shortest heads
- Be precise. When the score is 4-2, the verb is not smash, slaughter or skunk.

— **WIN**: win, rip, nip, axe, bag, top, set, get, nail, lead, trim, beat, best, clip, down, dump, fell, lead, lick, post, sink, slam, whip, score, upend, topple, defeat, subdue, sew up, outrun, deliver, advance, overhaul, overcome, outclass, pull off/down, outpoint, outfight, knock off/out/over, clinch title, turn back, polish off, advance on/over, nail down (a championship).

— **CLOSE WIN**: nip, trim, clip, snip, edge, squeak, slither, hold off, eke/edge/nose out, outlast, stagger in, squeeze by/through, come from behind.

— **SURPRISE WIN**: foil, halt, stun, upset, shock, stupefy, surprise, roll/turn back, overturn, bring to a halt (a winning streak).

— **EASY WIN**: push/walk over, coast past, romp/waltz/breeze in, romp/waltz home.

— **BIG WIN**: zap, ruin, whip, drub, romp, rout, bury, blast, sting, whomp, crush, wallop, riddle, smash, whack, wreck, punish, roll to/over/post, thrash, squash, sweep, shellac, dazzle, plaster, clobber, explode, mop up, humble, burn up, overrun, trample, flatten, ca-

kewalk, triumph, triumph over, humiliate, trounce, clean up, annihilate, slaughter, pulverize, wipe out, mow down, massacre, bulldoze, steam-roll, romp/bowl/trample over, overwhelm, overpower, embarrass, exterminate, walk/climb all over, run/walk away with, give a plastering/shellacking/trimming.

— **PREVENT SCORING:** zip, ace, deny, sack, blank, skunk, choke (off), shut off/out/down, hogtie, whitewash, paralyze, goose egg, short-circuit, scuttle.

— **TIE:** ("ed" verbs need two subjects) tie, draw, break even, stalemate, deadlock. Also: even series at, break even with, deadlock with.

— **FAIL TO SCORE:** draw a blank, lay a goose egg, blanked, shut off/out/down (Use suitable verbs from PREVENT SCORING list and make passive).

BROADCAST WRITING

As an MC your first encounter with broadcast writing will be as a radio or television newswriter or the editor of an electronic newsgathering package. In one of these assignments your job will be to meet the deadlines and rigid standards of the electronic media with the Navy's news story.

Radio news style is dictated by the need for grabbing and holding the attention of an audience. When scripting broadcast copy, you will face many subjective choices that can only be made by using your own common sense. For copy to serve any worthwhile purpose, it must be the kind of news story or radio spot the individual radio stations in your geographical area desire and are able to use.

Initially, be aware that writing for broadcast media is not the same as writing for print media. While the same rules of SAPP apply, there are a number of differences, particularly in writing style. Broadcast copy is written and designed for the ear, so the listener becomes involved and feels as though he is a part of the event being reported.

Each line of broadcast copy, or 10 words, equals approximately four seconds on air. Therefore, you will need seven to eight lines, on average, to produce a 30-second piece.

THE SIX C's

Broadcast copy must measure up to the following six C's: Clear, Concise, Complete, Conversational, Current and Correct

Clear

Clear copy is written in a simple, easy-to-understand manner. It is developed in a logical way, flows smoothly and is easy for the listener to follow. Even the simplest story may be misunderstood on the basis of one's hearing. The listener's attention may be divided between any number of distractions. Therefore, a radio news story should be perfectly clear to avoid misinterpretation.

In broadcast writing, simple words say it best. Choose words that everyone will understand—the announcer as well as the listener. Do not ignore colorful or descriptive words. However, steer clear of flowery phrases and clichés that simply take up time and are of no value. Avoid slang and always translate military, technical, legal and foreign terms into simple language.

Concise

Avoid jamming too many thoughts or numbers into one sentence. Generally, sentences that are more than 25 words contain more than one thought and should be rewritten into separate sentences. The same principle applies to dependent and independent clauses. They are often very cumbersome, so write them as separate sentences. You have concise copy when all unnecessary words have been trimmed away and only those words essential to convey your thoughts remain.

Complete

For the broadcast story to be complete, you must include in it at least four of print journalism's five "Ws." You will normally state what happened in your lead sentence, to whom it happened, when it happened, and where it happened. Why and how generally are not critical, although to be complete, some stories will require this information.

Conversational

Like good conversation, broadcast writing is informal and free-flowing. Write the way you talk. Let the story tell itself. Conversational tone sounds "right" to the audience and allows the announcer to easily decipher the idea of the story. Do not include hard-to-pronounce words or combinations of words that are awkward to the ear. Also, rid your copy of words that might be unfamiliar to your listeners.

Current

News of a perishable nature is usually hard news. If you have a story of immediate news value, you should expedite its completion and delivery to the media. By the same token, if there are new facts or circumstances relevant to your initial release, a follow-up story should be provided (and marked as an update). The new or changed elements of the story should be identified to reduce possible confusion with information in the original release.

Correct

The hallmark of writing, whether print or broadcast, is the accurate presentation of facts. Your finished product must correspond accurately with the facts of the story. In the field, you will follow every possible lead to get the facts as well as report them.

BROADCAST COPY FORMAT

When writing broadcast copy, start with a general "what-happened" lead followed by a body of significant facts. This body of information does not have to include all the facts of the story, since including the who, what, where, when, why and how in the lead would be too cumbersome. The lead sentence must gain the attention of the listeners and orient them on the facts that will follow in the body of the story.

When you begin a story with a person's name or a number, you risk the possibility of that information escaping your listener. It is much better to say, "A San Diego Sailor was cited for heroism today," than to say, "Seaman Phillip Jones was cited for heroism today." Start the story with a general "what happened" lead; then mention the recipient by name.

Names and Titles – In the case of names and titles being used together, titles should precede names. It should be "San Diego Mayor Jerry Sanders" not "Jerry Sanders, San Diego Mayor." Alert your listener to whom you are about to name by prefixing the name with the person's title.

You should refer to federal office holders by title or as "mister." For example, you would use "President Obama" or "Mr. Obama," "Mr. Biden," or "Vice President Biden," "Senator Sanders," or "Mr. Sanders."

If a difficult name is unessential, use only the person's title, such as "The Ambassador from Nigeria ..."

Initials – Generally, it is better to omit middle initials unless it is a well-known part of the person's name, such as William F. Buckley or John F. Kennedy. In the case of former president George W. Bush, using his middle initial is crucial so that he is not confused with his father, former president George H.W. Bush.

Words – In broadcast writing, you must be aware of certain categories of words that are potential trouble areas. These categories are explained in the following text.

- **Contractions** – In day-to-day conversations, contractions are used liberally. Therefore, you should use contractions whenever possible to add to the "conversationality" of your broadcast copy
- **Pronouns** – Using personal pronouns in broadcast copy can cause confusion. When you use "he," "she" or "they," make certain there is no doubt in the listener's mind to whom you are referring. The ear cannot go back and pick up the identification. Repeat the noun if there is any question
- **Alliterations** – Beware of alliterations. When you compose a sentence consisting of several words beginning with the same vowels or consonants, you have alliteration, and the announcer may have a problem. For example, "**THE WESTERLY WIND WHISTLED WILDLY.**"
- **Sibilants** – Beware of too many sibilants, or "s" and "sh" sounds, as they tend to create a hissing sound when read aloud
- **Phonetic Spelling** – If you are concerned about mispronouncing names and places, you can limit the possibility by writing the phonetic spelling of the word in parentheses immediately following the troublesome word. For example: **CAPTAIN ANTOINE (AN-TWAN) SPOKE TODAY ...** The Associated Press online offers phonetic spellings and pronunciations of items of news interest
- **Numbers** – Numbers present special problems to the broadcast writer. For the sake of clarity, broadcasters have developed their own style with numbers. Any number that begins a sentence is always written out
- **Conversational Numbers** – Make numbers conversational. Round out figures unless the exact figure is essential to your story. For example, \$1,527 would become 15-HUNDRED DOLLARS. However, exact numbers must be used if your story deals with deaths or other subjects requiring exact statistics
- **Dates** – Write dates as **OCTOBER 1ST, 2ND, 3RD, 4TH** and **31ST**, and use four-digit numerals for years, such as **1979** or **1994**.

BROADCAST COPY STYLE

The most successful broadcast writers write the way people talk in their daily conversations. They write as if they were telling the story to a friend. As an experiment, start noticing the lengths of sentences used in normal conversation. You will even find that we do not always talk in complete sentences. Quite often we speak in fragments, especially if everyone engaged in the conversation is familiar with the subject matter.

Uppercase vs. Lowercase – Broadcast copy is written in all capital letters or uppercase and lowercase. There are merits for each style. We are used to reading in uppercase and lowercase, and the patterns of words are easier to distinguish. If both uppercase and lowercase are used, you can also use caps for emphasis. However, the wire services use all caps and the all-capital style conforms to that format. Your job is to determine the best style for your releases and use it. Sticking to one style only, within the context of a story, also is important. Be consistent!

Present Tense – Using the present tense in broadcast news gives the copy an air of immediacy and it gives the listener a sense of participation. However, the verb tense that is most natural to a situation will be the most effective. Every story does not have to sound as if it happened the moment before the newscaster went on the air.

Active Voice – Write your broadcast copy in the active voice. Active voice provides impact, which is extremely important to a broadcaster. Passive voice can weaken the impact of a sentence. Look at the following example:

MILITARY POLICE SEIZED THE EVIDENCE. (Active)

THE EVIDENCE WAS SEIZED BY THE MILITARY POLICE. (Passive)

Do not confuse the active voice with past tense. The active voice can apply to past, present and future tenses. Active voice does not necessarily mean the present tense! Subject-verb-object is the best indicator of the active voice structure.

Punctuation – Punctuation in broadcast writing is used to help the announcer read the copy aloud.

The Period – The period indicates the end of a sentence or thought. More periods are used in broadcast writing because broadcast writing sentences are generally shorter and more conversational.

The Comma – Use a comma to indicate a pause shorter than that of the period. Do not use a comma unless you want the announcer to pause.

The Hyphen – Use the hyphen to help announcers in phrasing difficult words and to instruct them on how to pronounce individual elements distinctly. Note the following examples: RE-ADJUSTED, RE-EVALUATE, CO-OPERATE, RE-ALLOCATE, W-C-O-A, F-B-I, Y-M-C-A

COPYEDITING

Learning how to write for publication or broadcast is only the beginning of telling your story. Before you send copy to your editor, you have to check and recheck your work. This is called copyediting. The ability to copyedit is the cornerstone of all public affairs products – your command newspaper, a news release for the external media, public affairs guidance, the unit website or any other

product your shop produces. Every time you produce a product, you are putting your credibility on the line – your credibility with your commander and your customers, those who use your product.

When the paper looks bad and contains a lot of errors, the trust is gone – both from your commander and all of your various audiences. Stories are harder to come by because potential sources are afraid to talk to you. When you need subject-matter experts to brief the news media or handle a tour through their units, they may be less inclined to support.

You need to learn to write in a manner that conveys what you want to say quickly and clearly. To do that, you need to be able to copyedit.

Helpful tips when copyediting:

- When submitting your copy for editing
 - Put your last name on the draft at a minimum.
 - Include "more" at the bottom center of each page; "30," "USN," or similar command-specific notification at the bottom center of the last page. This lets the editor know to expect more or not when he reaches the end of each page.
- Try reading and copyediting the text using a step-by-step method
 - Read copy once without making any changes.
 - Read copy backward, focusing on the spelling and usage of each word. When you find a synonym, you will need to read the sentence forward to ensure proper usage.
 - Read the copy forward, sentence by sentence, checking for errors in grammar, punctuation and logical flow.
 - Read one more time for missed errors.
 - Send to editor.
- Read out loud
- Copyediting is employing a combination of good English skills and simple common sense. Put punctuation where it belongs, remove unnecessary punctuation, eliminate wordiness, make sure sentences make sense, and watch for misspellings, typos and other errors. If the story sounds good when you read it aloud, you are on the right track
- Copyediting isn't easy for everyone though. If you do not have a natural eye for errors in grammar, spelling, punctuation, style, etc., you may want to ask someone else to copyedit your story. However, you should copyedit the piece as well, and then compare notes. This helps you hone your copyediting skills as well as your writing skills
- Do not copyedit immediately after you finish writing your story, put the story down for a bit and come back to it to copyedit. Give your mind a rest.

Before you sit down to copyedit, it is imperative that you have a dictionary, the AP Stylebook, a copy of the Navy Style Guide, your local style guide if you have one and other supporting references with you. This will ensure you are consistent in your copyediting.

To help you with your copyediting, here are a few grammar and style rules you won't necessarily find in the AP Stylebook.

Editorializing

To report news accurately, you must keep yourself detached from the story. Whether you are doing interviews, writing your story, or conducting research, you must keep your objectivity throughout. Your job is present unbiased facts. When you are copyediting, always check for lack of objectivity and editorializing. Don't forget attribution!

Word Choice

Word choice (also known as syntax) in your writing goes hand-in-hand with accuracy, brevity and clarity as well as with SAPP. Therefore, the words you choose should not leave any doubt in your reader's mind as to what you are saying, nor should they offend or confuse your readers. This is especially true when writing an accident story or a news feature following an incident, accident or tragedy. Some important word choice examples:

- Death may occur following an operation or during an operation, but not as a result of an operation. The latter implies negligence
- Accidents happen and explosions occur; neither "takes place," because they are not scheduled events
- Ultimately, everyone dies of heart failure, not of a heart ailment
- A fire is not a conflagration; it's a fire. A bruise is a bruise, not a contusion, etc.

In addition, watch for wordiness and passive sentences. If you see a sentence that begins with "there is," "there are," or "it is," take a second to see if you can rewrite. For example:

- **Unnecessary** – There are some recent movies that have become classics already
- **Better** – Some recent movies have become classics already.

Contradictions

Sometimes a writer may contradict himself and not even realize it. For example, what if an MC wrote about a Sailor's recent promotion to E-4, referring to the Sailor as a 16-year veteran? With today's high-year tenure regulations, a Sailor should not be a 16-year third class petty officer. This could have been a typographical error or misinformation. Either way, as the copy editor, you should find inaccurate facts such as this.

Incompleteness

With experience, an MC will be able to gather all the facts necessary to tell the story. As the copy editor, it is your job to ensure the writer answered all the pertinent questions. Remember the 5 W's and H, and read the story as if you are the intended audience. If the MC failed to answer ques-

tions you have, chances are your readers will have the same questions. Return to the MC to complete the story at this time.

Proper Names and Figures

As discussed several times throughout this manual, accuracy is the key to being a good reporter of facts. The copy editor is counting on the writer to have proper names spelled correctly. But, how do you know that the name IS spelled correctly? One helpful method to ensure accuracy and avoid confusion is to have the writer draw a box around the name and make tick marks with his or verification of each properly placed letter. This works for statistical data as well. Better safe than sorry!

Spelling

Mentioned above in your list of "gotta-have" references to have available during copyediting is a dictionary and your style guides. These are a must, because spelling rules have many exceptions, and spell check doesn't always catch misspellings. Knowing a word's correct pronunciation will help you when you are looking up the word as well.

Punctuation

Punctuation serves the same purpose in writing as voice inflection does in speaking. Proper phrasing avoids ambiguity, ensures clarity and often lessens the need for unnecessary punctuation. The AP Stylebook contains a thorough section on punctuation. You should have this section bookmarked and study it often. Mastering punctuation will go a long way in any writing you do for the Navy.

Capitalization

Knowing what to capitalize and what not to capitalize is also specific in newswriting. Again, the AP Stylebook and U.S. Navy Style Guide are important tools to help with capitalization.

Acronyms and Abbreviations

One of the chief complaints of civilian editors and Navy family members who read military news is the excessive use of abbreviations and acronyms for titles and organizations. Acronyms and abbreviations (making a word or phrase shorter by leaving out or substituting letters) are used throughout the military and are necessary when trying to keep your writing brief. Some titles and terms are so long that abbreviation is a must. However, on first reference most acronyms and abbreviations must be spelled out. The AP Stylebook and Navy Style Guide contain abbreviations and acronyms and rules to whether they must be spelled out on first reference. A local style guide is important for your internal audience as well. Remember, brevity is important, but so is clarity.

Sentence Structure

Words, sentences and paragraphs are the building blocks of writing, and to be a good writer you need to know how to use them to build your stories. Each must be well chosen, effective and grammatically correct with a goal of clarity, emphasis and interest.

Sentence Fragment

Sentence fragments are incomplete sentences. For a sentence to express a complete thought, it must contain two necessary parts – a subject and a predicate (or verb). It is possible, however, for the subject to be understood, but you should be sure in such cases that the subject is clearly defined.

An incomplete sentence often results from the writer's failure to recognize that a modifying phrase or clause is really part of another sentence. For example, "The cruiser was headed east. Steaming through the Caribbean."

As a copy editor, however, you may not be aware that the writer, especially in feature writing, is using a fragment purposely, purposely for effect. In this case, the writer should leave a message for you that he or she is doing that.

Run-on Sentences

Another common error in sentence structure is the punctuation of two or more sentences as if they were one. This usually occurs with sentences that are closely related in thought. For example, "The ship's crew had its first swim call, the water was four-miles deep." These are two completely separate thoughts. "The ship's crew had its first swim call. The water was four-miles deep."

Dangling Modifiers

A writer's misplacement of a modifier will confuse the meaning of a sentence, often with silly results. Modifiers should be positioned close to the words they modify; otherwise, they may seem to modify something else. This error is common when using participles with other adjectives or with ab-verb modifiers.

For example, "Returning to the ship, the package was found on the bunk." In this example, you are saying the package was returning to the ship. A better way would be to say: "Returning to the ship, he found a package on his rack."

The word "only" is also often misplaced. By moving the word around in a sentence, you can change the sentence's meaning.

- Only he could read the unfamiliar dialect (Nobody else could?)
- He could only read the unfamiliar dialect (He could not write or speak it?)
- He could read only the unfamiliar dialect (He couldn't read other dialects?)
- He could ready the only unfamiliar dialect (Only one dialect was unfamiliar?).

Misplaced Correlative Conjunctions

Correlative conjunctions, such as not/only, but/ also and either/or, are often misplaced. The correct position is just before the words or groups of words they are connecting.

- **Misplaced** – The Navy letter form not only omits the salutation but also the complimentary close
- **Correct** – The Navy letter form omits not only the salutation but also the complimentary close.

Other frequently used correlative conjunctions are *both/and*, *neither/nor* and *whether/or*.

Split Infinitives

Before you can understand what a split infinitive is, you need to know what an infinitive is. An infinitive is a verb paired with the word "to," like to leave, to run, etc. A split infinitive, then, occurs when you add an adverb between the word "to" and the verb, *to quickly leave*, *to vigorously run*, etc.

Although many editors stand true to not splitting infinitives, some believe it is necessary for emphasis. Best rule of thumb, however, is to hold to tradition and keep the adverb out of the way.

Errors in Agreement

As you have read in this section, a sentence is a complete thought when it contains a subject and a verb. This subject and verb must agree with one another in number. For example, if you have a singular noun, you must pair it with a singular verb; with a plural noun, a plural verb.

- A Sailor runs
- Sailors run.

In a compound subject with "and" as the connector, the sentence takes a plural verb. When you use "or" or "nor" as a connector, the verb should agree in number with the last noun in the subject.

- The propeller and shaft were damaged
- Neither the propellers nor the rudder was damaged
- The cat or the dog sleeps on the back porch.

Again these are simple, sentence-construction examples. Most errors in subject-verb agreement occur with more complex sentence structures that contain more than one noun. Many writers mistake a noun not acting as the subject as the verb, because the noun is the closest in proximity.

- **Incorrect:** The primary duty of the staff dental officers are very similar to that of the district dental officer
- **Correct:** The primary duty of the staff dental officers is very similar to that of the district dental officer.

NOTE: *The subject here is "duty," therefore, the subject must be singular.*

In addition to errors in subject-verb agreement, many writers have trouble with noun-antecedent agreement. A pronoun is a word we use to take the place of a noun (he, she, it, they, we, us, them, etc.), and a pronoun functions as a noun. The replaced noun is the antecedent. The antecedent controls what number (singular or plural) of pronoun you use.

Collective nouns and pronouns cause error in agreement as well. Collective nouns are nouns that refer to things or people as a unit. Examples are family, class, teams, crew, etc. Collective nouns can be used in both the singular form and the plural form. Singular collective nouns refer to one unit of people or things; they take a singular verb. Plural collective nouns refer to two or more units of people or things, and they take plural verbs.

If you are unsure of a sentence's subject-verb or pronoun-antecedent agreement, break the complex sentence down to its foundation and take it from there.

Gerunds

When a verb ends in "-ing," it may be a gerund or a present participle. It is important to understand that they are not the same. When we use the -ing verb like a noun, it becomes a gerund: Fishing is fun. When we use the -ing verb as a verb or an adjective, it is usually a present participle:

- John is fishing.
- John has a boring teacher.

The above-mentioned items are but a few grammar and style issues you will run into when writing and editing. Get into your stylebook, your dictionary and other grammar and punctuation handbooks to help hone your skills.

Copyediting vs. Proofreading

Copyediting as mentioned above is the tedious, but important, job of going word-by-word, sentence-by-sentence, through text to ensure adherence to SAPP and the ABCs of journalism. This process takes place following production of the product, before it is sent to the publisher to be set.

Proofreading, on the other hand, is the final check after the article has been set into publication. Traditionally, proofreading was done during review of newspaper galleys (proofs not yet made into pages). Final corrections for typos or errors get a final look here.

Today, these words are often used synonymous. Overall, they have the same purpose of ensuring accuracy.

Copyediting/Proofreading Marks

When copyediting or proofreading your work or the work of a Shipmate, corrections are made by using copyediting or proofreading marks. Most copyediting marks are universal across newswriting lines. On the next page, you will find one example of copyediting marks; however, the AP Stylebook offers another example. Following the copyediting marks, the last page of the chapter contains a chart of proofreading marks from [Merriam-Webster](#). Whatever marks your shop decides to use, keep them consistent. Refer to Figures 5-2 and 5-3.

Copyediting Marks

SYMBOL MEANING	EDITED COPY	EFFECT
Insert quotes, apostrophe	"We believe..."	"We believe..."
Insert exclamation point, question mark	Wow!	Wow!
Delete punctuation	white) and blue	white and blue
Transpose letters	captain	captain
Transpose words	run fast	fast run
Transpose sentences, paragraphs	Apply same principle as above, or circle first item and draw arrow to desired position; note with (1)	
Abbreviate or spell out	Doctor Dr. ninety-two 92 more	Dr. Doctor 92 ninety-two
More of story to come		
End of story	-30-, -end- or -un-	
Not a new paragraph	battle. Sailors are	battle. Sailors are
New paragraph	battle. Sailors are	battle. Sailors are
Correct as written	Jane Austen	Jane Austen
Let it stand as before corrected	the F-14 Tomcat	the F-14 Tomcat
Center in column (heads and subheads)	Navy Day	Navy Day

SYMBOL MEANING	EDITED COPY	EFFECT
Capitalize	north island	North Island
Make lower case	the commander	the commander
Make caps and lower case	JOHN PAUL JONES	John Paul Jones
Insert letter	news stories	news stories
Change letter(s)	action photo	action photo
Delete letter, close up	typewriter	typewriter
Delete letter, leave space	petty officer	petty officer
Insert word	news photos	news and photos
Change word	record pictures	record pictures
Delete word, close up	news worthy	newsworthy
Delete word, leave space	the men	the men
Insert space	news photos	news photos
Close up	news paper	newspaper
Insert period	the end. The	the end. The
Insert comma, colon, semicolon	three, four and	three, four and
Insert hyphen	re-enter	re-enter
Insert dash	fact--for example	fact--for example

Figure 5-2, Copyediting Marks.

PROOFREADERS' MARKS

Symbol	Meaning	Example
↵ or ♂ or ¶	delete	take it out
⊞	close up	print as <u>one</u> word
⊟	delete and close up	close up
^ or > or ˆ	caret	insert here <i>(something)</i>
#	insert a space	put on [#] here
eg#	space evenly	space [^] evenly [^] where [^] indicated
stet	let stand	let marked text stand as set
tr	transpose	change / order the
/	used to separate two or more marks and often as a concluding stroke at the end of an insertion	
[set farther to the left	L too far to the right
]	set farther to the right	too I far to the left
ˆ	set as ligature (such as)	encyclo ^ˆ pædia
≡	align horizontally	align [≡] ment
	align vertically	 align with surrounding text
x	broken character	imperf ^x ct
□	indent or insert em quad space	
¶	begin a new paragraph	
SP	spell out	set <u>5 lbs.</u> as five pounds
cap	set in CAPITALS	set <u>nato</u> as NATO
sm cap or s.c.	set in SMALL CAPITALS	set <u>signal</u> as SIGNAL
lc	set in lowercase	set <u>South</u> as south
ital	set in italic	set <u>oeuvre</u> as oeuvre
rom	set in roman	set <u>mensch</u> as mensch
bf	set in boldface	set <u>important</u> as important
= or -/ or ⌵ or /M/	hyphen	multi-colored
¼ or en or /N/	en dash	1965–72
¾ or em or /M/	em (or long) dash	Now—at last!—we know.
ˆ	superscript or superior	2 ^ˆ as in π ²
ˆ	subscript or inferior	2 _ˆ as in H ₂ O
◊ or ×	centered	◊ for a centered dot in <i>p · q</i>
⸣	comma	
⸢	apostrophe	
⸣	period	
⸣ or ⸣/	semicolon	
⸣ or ⸣	colon	
⸣ or ⸣	quotation marks	
(/)	parentheses	
[/]	brackets	
OK/?	query to author: has this been set as intended?	
↓ or ⊥ ¹	push down a work-up	an unintended mark
⊞ ¹	turn over an inverted letter	inve [⊞] ted
wf ¹	wrong font	wrong si ^{wf} ze or styl ^{wf} g

Figure 5-3, Proofreaders' Marks.

SUMMARY

In this chapter you learned about taking the fundamentals of public affairs you read about in previous chapters and applying them in writing for publication or broadcast. You also learned that strong writing skills are essential to a successful career as a Navy MC or as an editor of others' work. In the next chapter, we will move from the news story to accompanying items – headlines and captions.

CHAPTER 6

WRITING HEADLINES AND CAPTIONS

Learning Objectives: Upon completing this chapter, you should be able to do the following:

- *Recognize the functions, components and attributes of a headline.*
 - *Write a headline.*
 - *Identify components of a photo caption.*
 - *Write a photo caption.*
-

INTRODUCTION

You have just delivered a story to your editor that is the best you have ever written with accompanying imagery that is some of the best you've ever taken. However, the story and imagery might vanish into obscurity on any newspaper or Internet page if the accompanying headline or caption does not entice or inform the reader. Headlines serve to grab the reader's attention and to quickly find the stories of interest to them. Photographs have unique storytelling abilities, but that story can often be lost without a caption that allows your reader a glimpse behind the scenes.

In this chapter we will discuss the elements of headlines and captions and how each enhances your media products.

HEADLINES

Headlines use words to sell a story and a variety of sizes and shapes to gain the reader's attention and improve publication design. Some headline writers use varying type fonts, sizes and forms to create a visual impact your eyes can't miss.

Headlines are powerful tools you simply cannot neglect. They set the tone for your entire publication (and, therefore, your entire unit or organization).

In a print publication, headlines set the look for the entire paper. Headlines are sometimes as important for how they make the page look as for what they say; they dress up a page, catch the readers' eyes and make it look and "feel" more accessible.

Just as the inverted pyramid helps emphasize the important information up front in news and allows readers to decide if they want to or need to keep reading, the news headline tells readers what the story is about quickly and in as much detail as space will allow.

CATEGORIES

Headlines fall into three general categories: straight news, feature and editorial.

(SIDENOTE: Features will be discussed in a subsequent chapter, while editorials will be taught in the advanced manual due out late 2011. However, to give you a quick peek into editorials,

they are similar to arguments in court cases. They give commanders and readers a chance to present policies and arguments in a structured, professional manner.)

Summarize the story: Even before the lead, the headline provides a general idea of the story to the reader. Straight news story headlines tend to be written "straight" – no fluffy stuff – while feature, news feature and editorial headlines can and should be more creative, catchy and enticing.

- **Attract attention/advertise the story:** A headline helps the reader skim a page and pick out what's important to him or her. Swallow your ego; this is reality. People typically read only what they find interesting. So, if you know it's important for them to read, give it a headline that highlights why it's important to them. Here are some examples:

— *Vague: Tuesday's open forum draws 315*

— *Better: Commander: 'I'll fix the sewer problem'*

- **Dress up the page design:** Headlines add bold, dark accents to what otherwise may be dull, gray pages. Feature headlines, in particular, may add a bit more. When creating feature headlines, you should explore different fonts and font treatments as a departure from the "everyday."

HEADLINE WRITING PROCESS

Read the story: The first step to writing a good headline is to read and understand the story. Remember, you're not writing a headline based solely on the lead; you're writing a headline for the entire story. The headline must give readers an idea of what the story is about and what kind of story it is: breaking news, humorous feature, personality profile or so on. Nothing misleads readers or angers writers more than a headline that misses the point.

Summarize the story: Once you've read and edited the story completely, summarize it into one sentence – a focus sentence. The sentence must have a specific subject and an active verb, and it must show how this particular story differs from every other.

Telegraphic English: When writing headlines, articles (a, an, the) and conjunctions are not used, because they take up too much space. The whole point is to say as much as you can in the space provided. So if you have lots of space, why is it wrong to use them? Because there is usually a better way to reword the headline to include more and better information than what is communicated by a conjunction that adds no meaning. It's a question of disciplined use of the headline space, and it makes for much better news headlines. Contrary to Associated Press style, headlines also call for using numbers in all cases and abbreviating days of the week and months. This shorthand way of writing headlines is called telegraphic English.

- Wrong: A fire destroys a house and a garage
- Right: Fire destroys house, garage
- Wrong: A gunman kills three at a school
- Right: Gunman kills 3 at school.

Headline style: From the focus sentence, you then eliminate unnecessary words such as forms of the verb to be (is, are, was, and were), leaving on the action verb to tell the story. Headline verbs are always in the present tense to show immediacy and to put the reader in that moment. This

is known as using historical present tense. If the event has not yet occurred, infinitives, the "to" forms of verbs, are used to indicate future action:

- Past: School cadre builds global relations
- Future: School cadre to build global relations
- Verb Usage.

For headlines to pack a lot of punch, the writer should use **accurate, dynamic** verbs and avoid using past tense and passive voice. If faced with passive voice, change the subject and focus on a different grammatical angle. For example:

- Passive: President killed by gunman
- Active: Gunman kills president.

Try to use SUBJECT - VERB - OBJECT construction. Historical present tense is one way to avoid past tense. **Future tense** – Congress to raise military pay.

- PAST TENSE: Fares dropped by airlines
- HISTORICAL PRESENT TENSE: Airlines drop fares
- PAST TENSE: Airplane crashed, killed 2
- HISTORICAL PRESENT TENSE: Airplane crash kills 2.

Punctuation

Again, as mentioned above, AP style and grammar are often not followed when writing headlines. This is also true for punctuation. Below are some basic guidelines.

Periods are not used at the end of a headline, but they may be used for abbreviations:

- N.C. town welcomes Fleet Week

Commas may be substituted for "and"

- Sailors make history, promote to CPO

A semicolon is used instead of a comma when a headline contains two complete thoughts (two subjects and two verbs).

- Judge suspends trial; defendant goes free

A colon may be used to indicate "said" or to create a pause for effect

- Obama: Bin Laden must go
- Chesty Puller: Not an average Marine

Quotation marks set apart direct quotes, as well as jargon quotes that are tossed around by the experts. Always, to save space, use single quotation marks.

- CVN 77 welcomes new 'fun boss'

- Lincoln: 'The war has begun'

Other types of punctuation, such as exclamation points, question marks, etc., should be used sparingly and only when necessary.

Headline Style

Many of the headline guidelines above run consistent from media outlet to media outlet; however, one thing that does vary is uppercase vs. lowercase style. The three main styles are downstyle, uppercase/lowercase and all capital letters.

"Downstyle," regular uppercase and lowercase letters used in standard sentences, is preferred and easier to read than capital letters, while uppercasing all major words takes a lot more space. However, some publications, to include Navy.mil and The Washington Post, use the uppercase method, or all caps. Regardless of the style you choose, it should be consistent with the rest of your publication.

- Downstyle: Brother and sister to reunite aboard Truman
- Uppercase: Brother and Sister to Reunite Aboard Truman
- All Caps: BROTHER AND SISTER TO REUNITE ABOARD TRUMAN.

Abbreviations and acronyms

Abbreviations save space in headlines; however, you should avoid acronyms whenever possible – especially unusual ones. Remember, your newspaper or online publication will have shadow audiences who may not understand military jargon. Use only abbreviations the general public would understand. Otherwise, the headlines indicate to your shadow audiences that the paper is an in-house newsletter and doesn't apply to them. Also, don't clutter up a headline with more than one abbreviation per line.

Bad splits

Headlines may spread over more than one line in print publications, thus running the risk of creating a bad split, a strange pause or phrase. The end of the line is a place where the reader naturally pauses; it's almost like inserting commas in a sentence. One way to keep from having a bad split is to not separate an adjective from the word it modifies or a preposition from its subject. If you wouldn't logically put a comma at the location of the split, it isn't a good place to split.

Wrong:

- Commander wants 'pot'
- program to be tough

Right:

- CO calls for change,
- Tougher 'pot' program

Types of Headlines

Although there are three categories of headlines, there are **many** types and variations of headlines. Here, we will discuss some of the more common ones. All variations are viewed in terms of their visual impact when used with basic headline styles. Some of these variants are explained in the following text.

Standing Head – A standing head (See Figure 6-1) is a label used for regular or recurring content, such as sports and chaplains' columns. It does not change from issue to issue.



Figure 6-1, Standing Head.

Jump Head – A jump head (See Figure 6-2) helps the reader find a portion of a story continued from another page. The jump head uses one or two keywords from the headline that introduced the story. It is set flush left followed by the words "Continued from Page ##" and usually set in italic type. A two-point line may be used to extend from the side of the head over the width of the article.



Figure 6-2, Jump Head.

The jump line is the line of text that appears at the point where the story has been jumped to another page. The jump head is the headline on the remainder of that story.

Overall, jumps are best avoided. Most readers do not "follow the jump" and finish reading the story; it's simply too much trouble. USA Today, a paper that prides itself on ease of reading, allows only one story per front-page section to jump into the paper.

Drop Head – Also called dropout or deck, a drop head (See Figure 6-3) is another headline below the main headline. The drop is smaller than the main headline, gives additional information and stands alone as a secondary headline.

Think of the main headline and the drop head like the lead and bridge of a story. The main line is similar to the story lead as it holds the most important information. The drop is like the bridge in that it complements the main headline without repeating the information.



Figure 6-3, Drop Head.

Crosslines – A crossline runs across more than one column. A banner headline, spoken of below, is a type of crossline.

Banner – Banner headlines (See Figure 6-4) give major news events their required importance. They are typically aligned left (flush left) and span across three or more columns of text. Modern newspapers overuse banner headlines, so they don't command the instant attention they once did. Too many banner headlines lead to a boring publication, so these headlines are often combined with drop headlines and limited to one every page or so at most.

Families affected by flooding advised to complete assessments

BY BRUCE MOODY

Commander, Navy Installations Command, Navy Family Readiness Program

WASHINGTON, D.C. — Navy personnel affected by the recent flooding in Tennessee are encouraged to communicate their needs and update their current contact information using the Navy Family Accountability and Assessment System (NFAAS). NFAAS is found at <https://www.navyfamily.navy.mil>.

"Through NFAAS, affected Sailors, Navy civilians or Navy families should provide current contact information," Mike Bruner, the Navy Family Emergency Response



"We've had earthquakes rattling all ends of the planet, tsunami warnings, volcanic clouds over Europe, flooding, and June 1 is the start of the hurricane season. The ideal time to log on is now."

Bruner said that people should log on, have a look at the site and see where they'll check in their family, and get familiar with how they would conduct a needs assessment.

"This won't be so easy to do when people are stressed from having to evacuate their home," Bruner said. "It's also a good idea to see if contact information needs updating, since many families are moving this time of year."

Figure 6-4, Banner Head.

Tripod Head – A tripod head (See Figure 6-5) is a single, short line of larger type set to the left of two lines of smaller type. The tripod portion (larger wording) should be twice the size of the definition or main headline. For example, a 36-point tripod would dictate the main head be set in 18-

point type to give the true tripod appearance. A colon is required when the tripod conveys a separate thought.



Figure 6-5, Tripod Head.

Wicket Head – A wicket headline is a tripod in reverse (short line of larger type set to the right of two lines of smaller type). The colon is not used in the wicket. Although seldom used, a wicket should be considered when trying to vary your newspaper design.

Kicker – The kicker (See Figure 6-6) introduces a feature article with a pun line above the main head. The information for the kicker is extracted from the bridge or the body of the story. When using a kicker, do not repeat words in the main headline. The kicker is underlined and about half the size of the main headline.

Homes receive personal touch

Fix it store helps improve quarters

Figure 6-6, Kicker.

Hammer Head – Often called a reverse kicker (See Figure 6-7), the hammer head is twice the size of the main head, set flush left, and is no wider than half the width of the headline area.

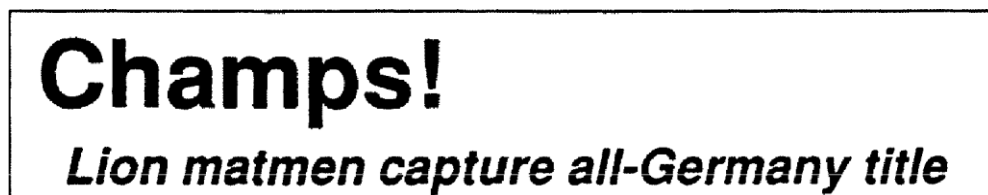


Figure 6-7, Hammer Head.

Novelty Head – A novelty head (See Figure 6-8) features typographical tricks, such as setting part of the head upside down, using an ornate typeface or substituting artwork as characters. Use the novelty headline sparingly with appropriate feature articles. Overuse of this headline may lead to your readership questioning the credibility of the newspaper.



Figure 6-8, Novelty Head.

CAPTION WRITING

In addition to headlines and leads, photo captions are among the most read items in any publication; therefore, we must take the time to discuss the anatomy and the importance of these elements. Captions are sometimes referred to as cutlines.

(NOTE: Photography will be discussed in the visual information section of the manual.)

As the old saying goes, "a picture paints a thousand words." However, most would argue that photographs are most effective when accompanied by explanatory text. Writing good captions to accompany a great photo makes all the difference in the world. A good caption supplements the photograph by explaining action, naming people and giving background information.

Caption writing is a specialized form of news writing. It answers the same basic questions as the news story. And like news stories, captions must not violate the principles of security, accuracy, propriety and policy or (SAPP), and they adhere to the Navy and AP style as well as the ABCs of journalism – accuracy, brevity and clarity.

Gathering Caption Information

Gathering information for photo captions is similar to gathering information for news. When you gather material for captions, look for the who, what, when, where, why and how of the event or situation you are shooting. The "who" information must be thorough. In other words, get the name, rank, service, job title, hometown, etc., when identifying the who of your photograph. To ensure accuracy, you should record the caption information immediately after each shot or series of shots. Do not let subjects get away without jotting down the required caption information. They may be hard or impossible to track down later, and you may forget the specifics of the photograph. ALWAYS CARRY A NOTEBOOK AND PEN OR PENCIL.

A few points to consider ...

- What element or elements of mass appeal are in the photograph (SPICE COPPS)
- Will the photograph be released internally, externally or both? Photographs for external publications may require more information and full explanations
- Will the photograph be used alone or with a story?

With these basic considerations in mind, try to stick with the five W's and the H. Find the answers to these pertinent questions, and you will have more than enough information to write your caption.

- **WHO:** Identify people in the photograph by rank, full name, title, hometown and so forth. Also note relative positions of people in the photograph when there is more than one and, if it is not obvious, who is who by action, age, gender or rank. Sometimes it is helpful to note clothing or physical characteristics of the people being photographed, such as a color of clothing, wearing of glasses, or a specific hair type or hair color. There should be no doubt in your notes as to who is whom
- **WHAT:** The "what" is the action taking place in the photograph, such as slicing a cake, performing 3M spot checks, or re-enlisting. However, the "what" can also be the subject of the photo's action. Examples are equipment, ships, aircraft or submarines, to name a few. In these instances, as with a "who," full identification is a must
- **WHERE:** The "where" includes the location of the action and should include ship's name, port of call, operating area, street names, building names or numbers, etc
- **WHEN:** "When" records the time of day and date the photo was taken. This is especially important for stand-alone photographs that will not accompany a news story or feature
- **WHY:** Unless it is obvious, record why an action is taking place. Is it part of a command basketball championship or a monthly awards ceremony? As with the "when" category, this is important for photographs that will stand by themselves
- **HOW:** If there are circumstances that led to the photograph being taken and these circumstances require explanation, make sure you make note of this.

Caption Components

Everything you have to say about the photograph should be in the caption, including the essential facts. These facts must be tied into the scene of the photograph. The length of a caption is always governed by what must be told about the photograph. Captions consist of four major components:

- The action
- The identification (persons or things in the photograph)
- The background information
- The credit line.

The Action – The first sentence of a caption is the most important. It must link with the photograph by describing its action. Often, a caption's first sentence reads like a news story's lead sentence. It describes what is going on in the photograph without repeating the obvious. The first

sentence is written in present tense and active voice, because the photo captures an exact moment in time and holds it in the present.

The Identification – The second part of a caption is the identification of who is in the photograph. The subject of the photo links to and is identified according to the action. In most cases, tell the reader the person's complete name, rank, unit, job title and hometown. When writing captions for sports imagery, military titles ranks, etc. are not needed. Instead use the player's team position, nickname or jersey number.

One exception to fully identifying your subjects occurs when you have more than three people in a photo. At that point, if the people have a commonality, such as a sports team or a division, identify them as that group. For example, if you shoot a photo of your command's culinary specialists serving lunch and there are more than three in the photo, you can write, "USS Carl Vinson (CVN 70) culinary specialists ..."

For group shots, such as sports team or command divisions, where you are publicizing the photo strictly as a roster photo, a complete listing of their names is okay. In this instance, identify the persons from left to right, front to back. If not, use a generic term, such as "Sailors," in the caption. Otherwise, the caption becomes a laundry list and will bore your reader. However, if someone of prominence is in the photo, such as the president, you should pick him out of the crowd and identify him. The rest of the group would be identified by a generic name.

The Background Information – Background is often ignored by new MCs, but it is critical to sell your work to an editor. The background tells your readers why the photo is important. A photo of a Sailor standing guard while a helicopter lands is interesting, but the background information will explain to the reader why the photo is significant.

Background information comes from the same place you get background information for all other public affairs products – Rhumb Lines, public affairs guidance, maritime strategy, Navy.mil, etc. The amount of background information required in a caption sometimes depends on where the photo will be published. For example, if you plan to publish the photo in a print product, you may be limited to the amount of space available in the publication. But, it is important to give more information than you will think you need. The editor can cut, but he can't add information if he doesn't have it.

The Credit Line – The last component of the caption is the credit line, or the identification of the photographer. There are several ways of crediting photographs. Some newspapers and magazines give photographers personal credit lines, while others use a blanket statement such as "all photos are U.S. Navy photos unless otherwise credited." However, the recommended way is to put the credit line at the end of the caption itself. Current credit line format is: "U.S. Navy photo by RANK and NAME." For example: U.S. Navy photo by Mass Communication Specialist Myra Mains. Accompanying your credit line should be the word(s) "released" or "Not for Release." Your command's designated photo release authority (LCPO, division officer, Department head) makes this determination after reviewing the photo for SAPP.

Another important element for crediting the photographer comes in the form of a VIRIN, or Visual Information Record Identification Number. The VIRIN, which comes before the photo's dateline, catalogs the visual information, assists in the rapid retrieval of that information, and identifies the photographer or videographer. More information on caption writing and creating VIRINs can be found on the [Navy Visual News Service website](#).

Note: VIRIN format has changed as of February 1, 2011. Module 2, Chapter 7 discusses the new format.

Caption Writing Guidelines

Using a caption provided by the photographer, receiving agencies (such as the various services' websites) may rewrite a caption to suit their own purposes by taking information contained in the caption and preparing a cutline. Your name is on the work, so be sure to check the accuracy of anything that is posted or published.

To create accurate and concise captions, stick to the following guidelines:

- Begin the caption with a dateline in case the editor decides to run the photograph by itself as a stand-alone image. More information on datelines can be found in Module 1/Chapter 5
- Avoid the use of military jargon and use the Associated Press Stylebook
- Never write a caption for a cropped photo unless that photo is directly in front of you at the time. (Cropping means to cut or trim unneeded portions.) Don't guess or write from memory. You may mistakenly provide information no longer seen in the image
- Captions should be simple and direct, often conversational. Make them short, but use complete sentences with a subject, verb and object. Keep them around 50 words
- Don't always begin captions with the person's name. Try to recreate conversations, colors, smells or sounds associated with the picture and the situation described
- Don't editorialize
- Avoid clichés
- Don't state the obvious.

Examples:

100714-N-VCODE-208 ATLANTIC OCEAN (July 14, 2010) Former President George H.W. Bush watches flight operations from the landing signal officer's platform aboard the aircraft carrier that bears his name, USS George H.W. Bush (CVN 77). Bush and his wife, Barbara, spent their time aboard watching flight operations, touring the ship and visiting the crew. George H.W. Bush is conducting training in the Atlantic Ocean. (U.S. Navy photo by Mass Communication Specialist 3rd Class Nicholas Hall/Released)

100727-N-VCODE-008 SEA OF JAPAN (July 27, 2010) The Republic of Korea Navy amphibious landing ship ROKS Dokdo (LPH 6111) and the aircraft carrier USS George Washington (CVN 73) transit the Sea of Japan. The Republic of Korea and the United States are conducting the combined alliance maritime and air readiness exercise "Invincible Spirit" in the seas east of the Korean peninsula from July 25-28, 2010. This is the first in a series of joint military exercises that will occur over the coming months. (U.S. Navy photo by Mass Communication Specialist 3rd Class Charles Oki/Released)

100725-N-VCODE-072 U.S. 5TH FLEET AREA OF RESPONSIBILITY (July 25, 2010) Logistics Specialist Seaman Brandon Moore, from Richmond, Va., picks up aviation parts for Strike Fighter Squadron (VFA) 37 in the maintenance support package space aboard the aircraft carrier USS Harry S. Truman (CVN 75). VFA-37 is deployed as part of the Harry S. Truman Carrier Strike Group supporting maritime security operations and theater security cooperation efforts in the U.S. 5th Fleet area of responsibility. (U.S. Navy photo by Mass Communication Specialist 3rd Class Jared Hall/Released)

Remember, photographs, despite their unique storytelling ability, are seldom effective enough to stand alone. No matter how exciting the picture may be, it fails unless the viewer understands what is going on in the photograph. The area to provide information the photograph cannot give is in the caption, or the text that accompanies the photograph. It is your responsibility as the photographer to gather the necessary information and write complete, concise and factual captions.

SUMMARY

In this chapter we discussed the importance of recognizing the functions, components and attributes used when creating headlines and photo captions. Headlines and captions accompany other products to fully tell the Navy's story. From here, we switch gears from structured writing to writing features, which allows the MC a bit more creative freedom.

CHAPTER 7

FEATURE WRITING

Learning Objectives: Upon completing this chapter, you should be able to do the following:

— Identify the basic elements of a feature story.

INTRODUCTION

As we learned in chapter 5, newswriting is an important tool in telling the Navy story to our external and internal audiences. However, newswriting is structured to report the facts in a timely manner with little room for creativity. For this reason, we can turn to feature writing and draw the human aspect of the news we are reporting. In no way does this diminish the need for newswriting; just the opposite, it enhances it.

In this chapter we will discuss the purpose for writing features, types of features, the anatomy of a feature story and tools to help you write features. *(Much of the information here is courtesy of the Defense Information School public affairs leadership and public affairs departments.)*

Feature stories boost morale and often tell the human side of the story beyond the hard facts. Research has shown that people like reading about themselves and others. In all honesty, there's probably not enough varying hard news happening within your command. You can only write so many stories about inspections, certifications, visits and port visits before the stories become redundant. Plus, most military publications are weeklies. By the time your story is printed, it's usually old news. Features can help mitigate that loss of timeliness.

A feature story can be written about anything. It can make us laugh; it can make us cry; it can teach you how to do something. What you have to decide, as a feature writer, is what kind of story works for your type of publication and for the topic at hand.

TYPES OF FEATURES

NEWS FEATURE

A news feature is similar to straight news stories in that it has a news peg, includes important W's and H, and requires primary and secondary sources. On the other hand, a news feature is different from straight news because it uses feature-writing styles and techniques. News features are especially popular in afternoon dailies or military weeklies. In both, the basic facts of the story have already been reported, so editors, through features, try to present the facts in a more interesting or more of a human-interest format. News features put the reader at the scene of a news event through narration and a more vivid description of what took place.

Human Interest Feature

A human interest feature requires primary and secondary source interviews and may include the use of research and observation as information-gathering techniques. Human interest is the broadest feature category. These features are written to inform, educate or entertain the reader. The news peg is replaced with reader interest.

Personality Feature

People are curious about other people. It's human nature. The properly written personality feature is a vivid word picture of the subject's personality traits and physical features as well as a description of the things that make the person unusual or interesting. The effective personality feature leaves readers feeling they have met the subject face to face and know that individual's personally.

A personality feature is similar to other features in that it appeals to people's interest in other people. It normally points out special achievement, success or obstacles surmounted in life and centers on a particular event or achievement. A personality feature should be one of the most enjoyable features you write. After all, you can use your job to satisfy not only your readers' curiosity about your subject, but your own.

Auxiliary Feature

The auxiliary feature is a catch-all feature short in length that makes use of numerous photographs, graphic artwork, or a combination of both. Because this type of feature is short, the writing must be written tightly. For the same reason, accompanying captions are also critical. There are, however, some features in this category that could fill an entire page, be used as a two-page feature (double truck), or even be run as a continuing series. This feature type can range from a travel story to a light-hearted approach to a common subject. Most often, auxiliary features appear in military papers published overseas because of the unique needs of readers in those areas. But there's no reason why these features couldn't appear in stateside publications. The type of auxiliary feature used is limited only by innovation and imagination.

Travel feature

Travel features are used primarily overseas, where language barriers may make it difficult for readers to learn about travel opportunities. The best way to begin work on a travel feature is to experience a trip yourself and take thorough notes. DoD Directive 5120.4, "Department of Defense Newspapers, Magazines and Civilian Enterprise Publications," states that military publications must not imply commercial endorsement. When writing travel features, be careful that you do not imply a travel location is the "best" location or that your command favors it. You can avoid implied endorsement by mentioning other similar travel opportunities. This can be done by listing other locations within your article or in an information graphic next to your article.

Local point of interest, historical feature

Similar to the travel feature, this type of feature is especially appreciated in overseas publications. It is often a vital part of the installation's community relations program. It also helps to get base personnel out of barracks rooms and family housing to partake in the host country's culture and daily life. These features must present the subject matter in good taste. The historical parts must be accurate or you could create bad relations between your installation and the host country.

Unit feature

Unit features provide in-depth coverage about one particular organization on an installation, such as the motor pool, a branch of supply, or the people who operate the fuel farm. While the mission and equipment are important, it's all too common for writers to concentrate on these and ignore the most vital aspect of the operation – the people. They are the story. Junior service members and civilians often are overlooked. Don't allow this to happen. Unit features take a lot of time to write, and they require in-depth research. These features, along with accompanying photos, often fill one or

two pages. They are sometimes used to boost unit morale or as a way to highlight a particular award or accomplishment.

How-to features

How-to features give your readers something they need and want. They can span the full gambit of subject matter, such as how to make a simple table for a barracks room, how to read your German telephone bill, or how to order a meal at a Japanese restaurant. Don't hesitate to seek expert help if you need it. If your how-to feature explains construction steps or contains a recipe, do it yourself to make sure the instructions are correct.

Brights

Brights are short, usually humorous features we use to break up and lighten a page of serious or somber news. They serve to entertain the readers and make the paper more attractive to them. A bright is a complete story that is short enough to be used as filler.

Seasonal/special-interest feature

This type of feature may focus on days, weeks, months or seasons. Winter fun, Black History Month, Mother's Day, and many more fit into this category. At overseas locations, it's a great way to explain the host country's holidays and celebrations. This also helps support your unit's community relations program. Let good artwork do a share of the explaining.

Picture Stories

In defining the auxiliary feature, we spoke about how photos and artwork can play a big role in helping to tell your story. A page in a publication filled with a hodgepodge of photos may not make a story, but a page of photos with continuity, purpose and a short auxiliary feature does.

Selecting and displaying just the right photographs is similar to writing your story. When the material is selected and arranged in a coherent and entertaining manner, it has impact. If poorly done, the information is submerged in the resulting clutter. A collection of pictures can be arranged as an essay or a story. Both feature a collection of photos; however, with a photo story, there is a beginning, middle and end. The photo essay tells no story; it simply highlights an event. It should also be noted that a picture story may or may not be accompanied by text other than photo captions. If the feature contains accompanying text, the photo captions bridge the gap between the photos and the accompanying text. The number of photos used in the photo story depends on the importance and complexity of the subject. The key is not how many but which ones.

Feature writing

The challenge of feature writing is to make the article irresistible to read. You must pull the reader in with words. In feature writing there are fewer constraints, but you still must make the story clear and concise, and most importantly, **factually correct**.

STORY STRUCTURE

The basic parts of a news feature (See Figure 7-1) include the lead, bridge or nutgraph, body and conclusion. If each paragraph flows into the next logically and all the readers' questions are answered, then the story is successfully organized. Feature writing adheres to the same ABCs of

journalism presented in newswriting. You must ensure that all of the information is accurate, brief and clear.

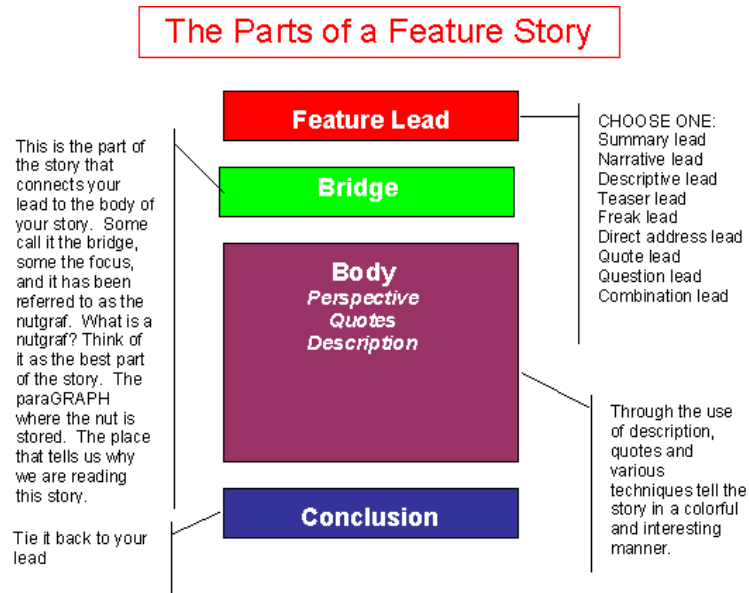


Figure 7-1, Parts of a Feature Story.

The Feature Lead

The feature lead is just like an attention step in a speech. Its purpose is to draw you into the feature, making you want to read more. In this chapter, we will cover nine feature leads:

- Summary

Strong winds, combined lethally with a fire in a Queens high-rise building Thursday, created a "blowtorch" that roared through an apartment building and into a hallway, killing three people and injuring 22.

This lead summarizes the events with the who, what, when and where, while using strong imagery to do it.

- Narrative

Louis Chacon telephones the sheriff's office here recently and complained that there was a "big" snake in a toilet at the house he had just moved into.

Deputies investigated and found nothing in the bowl.

Chacon explained to them that the snake was very sneaky and only stuck its head out of a hole in the bottom of the commode when it thought no one was looking – that is, when a person had his back to the bowl.

This narrative lead not only tells a story, but the narrative plays out in your head like a video camera. It is chronological, suspenseful, and will certainly make the reader want to finish the story. It plays on a common irrational fear.

- Descriptive

*Instantly, the fuel mix exploded into a **tower of red, twisting flames churning wildly upward**. Soon the blaze **engulfed the building**; its **thick, black smoke darkening the morning sky**.*

A descriptive lead is colorful and uses all of your senses to describe the event. The words in bold should bring out the images in your brain.

- Teaser

*It is mid-afternoon on a Sunday in August, and **the fog hugging the Golden Gate Bridge** and rocky coastline finally has lifted. Tourists escaping the cable-car routine, locals **fleeing cramped apartments**, surfers who **live on the edges** of the city – they're all drawn here for one thing: Ocean Beach.*

*With the **long expanse** of fine sand and the **lull of crashing waves**, it looks like a California postcard.*

And that is what makes this such a perfect place to die.

At this point if you're not feeling an overwhelming curiosity on why a beach is such a beautiful place to die, then you must be dead already! Where is this story going? Is this a story on suicides? Is this a story on a beachfront cemetery?

The line, "And that is what makes this such a perfect place to die," is the perfect line to make the reader turn the page.

- Freak

John Scheer has been designing women's clothes for more than half his life. He is now 10.

In your brain you should be going, "Ten? You mean, he started at 5 years of age? How is that possible?"

- Direct Address

You would not think that a Hollywood-perfect small town would go gaga over garbage cans, sparking a trend in trash that some predict will sweep the nation.

You also would not think a 66-year-old photographer and artist who wears rainbow-colored suspenders would be San Francisco's latest trendsetter.

But then, you've never met Dick Horn – lover of rainbows, loather of over organization and painter of garbage cans.

The writer is addressing "YOU," yes, you. The start of every direct address lead is the subjective personal pronoun.

- Quote

Imagine your story starting out this way.

"Sometimes history is written in hot, little dusty places on the Earth," Maj. Gen. James N. Mattis, commander of the 1st Marine Division, told his troops when the mission to escort him into the city was done. "That's what we did today, and it's good history."

Quotes should only be used sparingly as leads and must be strong enough to carry your reader into the story.

- Question

Where are the scariest, most scream-inducing, gut-wrenching roller coasters in the world?

If you are a lover of roller coasters, you just might like the above lead. The lead makes you ask yourself the question, "You know, I never thought about it before, but where are the scariest, most scream-inducing, gut-wrenching roller coasters? I really would like to know!"

As with the quotation beginning a lead, a question must also be effective enough to truly grab the readers' attention and arouse curiosity. Some readers may not care what the answer is and move on to the next story.

- Combination

Take blood from the dead and give to the living?

In Russia they do.

Sgt. Cynthia P. Clinger, a medical sergeant from Fort Knox, Ky., says there is not a need for blood drives like there is here. They take living blood cells from cadavers, and as long as that person was healthy, they can use the blood for transfusions.

Is this a combination question/narrative lead? It's each of them and it works.

Bridge/Nutgraf

Once you have a great lead and you have grabbed your reader's attention, it's now time to tell your reader just what the feature is going to be about. You do this through the bridge, which, in feature writing, is also called the nutgraf. This part of the feature tells the reader why he should read the feature in the first place. If you want to keep your reader long enough to read the body, then make sure you place the bridge high in the story. Beyond the fourth or fifth paragraph, your reader could get frustrated and bored and ask himself why he is still reading. The nutgraf is the "what's-in-it-for-me" hook to keep the reader interested.

- Descriptive Lead and Nutgraf

Victoria Marriot wakes up every morning at 5:30 with her gunnery sergeant husband, and for the next 12 hours, she will be at home and at work.

Although her first child will not arrive until 6:45 a.m., the early morning allows her time to do paperwork, clean the house and cook breakfast.

This has been her lifestyle for the last three years as a licensed child care provider, one of the most demanding jobs as more and more dual-income military families try to find affordable alternatives to institutional care.

- Summary Lead and Bridge

The winner was weeping, the loser was seething, and the last-place finisher was accused of influencing the outcome.

The fans? Well, they just went back to their reading.

Such was the scene Wednesday morning at the Indiana University Track Stadium following the women's race-walking event in the Pan American Games.

Body

The body of a feature further reflects the focus of the story using creative writing techniques and attribution. The body should follow on a chosen organizational pattern. Ultimately, however, if each paragraph flows into the next logically and all the readers' questions are answered, then the story is successfully organized.

- **Chronologically.** Organized by time or sequence. Any story that would be interesting told from beginning to end, start to finish, such as a story about a finger-painting contest for 4 year olds at the child care center. This feature could take advantage of suspense by doing a play-by-play of the contest before finally revealing the winner
- **Topically.** Break a subject up into topics and discuss each. Example: A story about an upcoming exercise might be divided into sections on purpose, schedule and troop reaction. Most speeches and papers are organized this way; you have probably produced outlines for them. Topical organization is the most common organization pattern and is also used in inverted pyramid
- **Spatially.** Explained in a logical sequence, having to do with physical arrangement. Example: Left to right, near to far, top to bottom, front to back. You could use spatial organization to organize a story about a base deployment exercise, moving from the gate to the various locations in camp
- **General to Specific (or vice versa).** Especially when introducing the reader to something new or technical, present general (or background) information the reader can understand before becoming to specific. Example: This is a good way to introduce a new weapon system, base telephone exchange; it's also helpful in "how-to" stories of all kinds
- **Functionally.** Tell what something does and relate it to the larger function. Break a whole down into its individual parts. Example: A story about a new computer system in your command could be organized by each of the ways in which it will be used
- **Descending Order of Importance.** Used most often with feature stories containing strong news pegs and interesting detail. Example: A story announcing and explaining an upcoming exercise (or giving its results afterward) or a wrap-up of a six-month deployment. This pattern is most often used in a story that has significant news content.

FEATURE CONCLUSIONS

Straight news stories have no conclusive endings. The writer simply stops writing after the last detail is provided. Cut the last graph — or even the last few graphs — and the reader still gets the complete story. A feature, however, is the skilled telling of a complete story and, like any other story, needs a strong feature conclusion where the writer makes or reinforces a point. The type of ending used depends entirely on the nature and angle of the story itself. The writer must choose the style most appropriate to the story that both satisfies the reader and clearly signals the end of the story. Remember, however, that the conclusion should complement the lead, not compete with it.

Types of Conclusions

Summary

- Summarizes the points of the story
- Keys in on impact, effects or outcome
- Last chance for the writer to make his or her point
- Usually found in news features.

Tie-back

- Completes a fact, idea or scene planted in the lead
- Returns the reader back to the point he or she was put in at the lead
- The conclusion needs the same settings, actors or ideas introduced in the lead
- Key to tie-back is to make it recognizable by bringing the reader full circle.

Wrap-up

- Ties up loose ends, solves problems, or answers questions from the lead and makes a strong point
- Powerful quotes can be used for wrap-up endings
- Quotes should be thought-provoking and provide significant insight.

Climax

- Brings the adventure, day, method, etc., to a close and ends the story at the same time
- Naturally lends itself to chronological stories.

Unending

- Turns the reader's attention to the future, saying that "life goes on."
- Challenges reader to look at his or her own future or the future of the characters in the story in a new light, based on the story focus.

Stinger

- Surprise conclusion designed to jolt the reader
- Must be worked up to gradually
- Reader should almost feel he or she knows the inevitable ending
- Stingers are not common endings. Contrived stingers are very obvious.

Combination – Combination of two or more of any type of conclusion.

EXAMPLES of CONCLUSIONS

Sample lead

The 6-foot, 3-inch man wears a black belt as a result of seven years of Marine Corps Martial Arts Program training. His home is protected by an electronic surveillance system, a no-nonsense, 52-pound, muscular pit bull mix named Chesty and the vigilance of his Meade Heights neighbors, most of them military families. His children know they should never provide personal information to callers or strangers on the street. He always keeps his 2010 Hummer in perfect running order.

Each member of his family carries a cell phone at all times to call for help in emergencies. He owns two registered weapons – a shotgun, which is in as pristine condition as when his great-grandfather bought it a century ago, and a custom-made pistol.

The sleek, Austrian-made handgun is placed securely by his bedside, the shotgun within short reach in a vault in the master bedroom's small office. Today, Eddie Lancaster is in the intensive care ward of Johns Hopkins, the victim of multiple stab wounds after being attacked while he walked from his car to his dry cleaners in Odenton. The knife-wielding attacker surprised Lancaster from behind, stabbing him repeatedly in the neck and back and disabling him before he could defend himself.

Summary conclusion

The attack on Eddie Lancaster is not an isolated incident, even for service members. County police statistics show that Anne Arundel County residents, like all Americans, spent about \$350 more per family for personal and home security last year than in 2009. At the same time, the reports said, violent crime rose nearly 6 percent in most central Maryland counties. No one is immune to this danger.

Tie-back conclusion

A number of service members like Eddie Lancaster, who are dedicated to preserving freedom, have been the victims of random violence in a country they've sworn to protect. Many people are frightened – for themselves and their families – and they barricade themselves in their homes instead of confronting the problem. Rather than give in, Lancaster's family said they believe society must work as a whole to make America safe again.

Wrap-up conclusion

"Poor Eddie," says Andrea Lancaster, as she holds the hand of her comatose husband. She battles to stem the tide of tears, her lips quivering in a sad dance of despair. "He really believed that he had every possibility covered and that we were completely safe."

Climax conclusion

The world outside Johns Hopkins continues its daily schedule, and the monitors in Eddie Lancaster's room continue their steady hum. His chances for survival have improved since he was first brought in Wednesday, but the doctors still cannot make any promises to his wife and family.

Unending conclusion

Andrea Lancaster and her children keep a silent vigil at the hospital, hoping their love is strong enough to keep their husband and daddy alive. Whether he lives or dies, they know that none of them will ever feel completely safe again.

Stinger conclusion

The fact that most victims of violence have met their attackers, even if only in passing, makes the issue even more frightening. The victim in this story had also met his attacker, many times. Eddie Lancaster was stabbed by the panhandler whom he gave a dollar to every day outside the convenience store where he bought his morning coffee.

USEFUL TOOLS

As written above, feature stories blend the elements of news with creative writing tools. In this section, we will discuss these tools.

Syntax

Syntax describes the way we put together words to form phrases, clauses and sentences. Proper syntax means sentences do not sound awkward or confusing — they are easy to read and flow together smoothly. It means choosing the right words, the appropriate words, for the piece we are writing.

Transitions

One way to improve the copy in the body of your feature is to use transitions. Transition literally means movement from one place to another. In a feature story, transitions carry the reader into a new sentence or paragraph.

Here are some examples useful transitional words arranged according to functions:

Time	Contrast	Cause/Effect	General to Specific
Then Now Next First Second	However Nevertheless Yet Even through despite	Therefore Thus Hence Consequence so	In fact Especially For instance For example
Reference	Summary	Attitude	Addition
The former The latter The following	In summary To sum up In conclusion	Fortunately Unfortunately naturally	Also Too Furthermore Moreover

Personification

Personification means giving human characteristics to non-living objects, ideas or things. Take one of the most familiar symbols in our country – Uncle Sam. Uncle Sam is a personification, representing our country by a tall lanky fellow, not unlike Lincoln. In the past "Uncle Sam" has been depicted in cartoons as compassionate, but not unwilling to roll up his sleeves and get into a fight.

Other examples:

- The moon winked at me from the clouds above
- The flowers danced in the breeze
- The wind howled
- Time marched on slowly.

Similes

A simile is a stated comparison between two or more objects using "like" or "as." Most often, the simile is used to make writing more interesting or more entertaining. Some examples:

- His face was as ugly as old running shoes
- John Smith had a mind like a computer
- That idea went over like a lead balloon
- Your explanation was as clear as mud.

Metaphor

A metaphor is the comparison of one thing to another without the use of "like" or "as". You should use metaphors ONLY for the sake of beauty, necessity, polish or emphasis. It should bring something to your story and help to provide a way for the reader to visualize or see the story play out in more colorful terms.

- Time is a thief
- Time is money
- Life is a journey
- The teenage boy's stomach was a bottomless pit.

Hyperboles

Hyperboles emphasize something by deliberately exaggerating or understating it.

- Jerry can run rings around a cheetah
- Mark Twain wrote a couple of stories about life in the South
- He is older than dirt.

Anecdotes

Anecdotes are short, entertaining stories within a story that give insight to the subject. They give an example or capture the essence of a point. Usually, they are personal or biographical accounts of certain happenings.

Let's say you're doing a story on the small portions that are given by upscale restaurants. Your story might include the following anecdote:

"While attending a private dinner party one evening, Alfred Hitchcock, whose famously portly profile portrayed a certain fondness for food, was dismayed to find that the portions being served were far from adequate.

"At the end of the evening, the host bid Hitchcock farewell. 'I do hope you will dine with us again soon,' she added.

"By all means," Hitchcock dryly replied. 'Let's start now.'"

The key is to make the anecdote relevant and interesting enough that it enhances the point of your story. Encourage your interview subject to provide anecdotes, especially those that involve them personally.

Varied sentence structure

One of the most basic rules in the English language is to use simple sentence construction – **subject-verb-object**, or "who did what" – whenever possible. However, using a preposition or clause to start a sentence often adds variety to your feature. In feature writing, if you strictly follow the subject-verb-object construction, your writing will become boring.

SUMMARY

In this chapter, we discussed features and how you can use features to tell the Navy story. We also compared newswriting with feature writing and broke down the anatomy of features. But, this information only skims the surface. Writing features is an art, one that must be practiced and refined. You should seek out books, magazines, online blogs, etc., and stay up-to-date on what is being printed in the world of newswriting and features.

CHAPTER 8

INFORMATION AND NEWSGATHERING

Learning Objectives: *Upon completing this chapter, you should be able to do the following:*

- *Conduct research in preparation for interviews.*
 - *Coordinate interviews.*
 - *Conduct interviews.*
-

INTRODUCTION

As you have read throughout this module, your role in reporting the news and telling the Navy story is an important one. Simply stated, you serve your country, the Navy and your commander, and your objective is to act as a conduit of command information between your commander and your command's audiences.

In previous chapters, we have discussed the fundamentals of public affairs, the nature of news, news and feature writing, and headlines and captions. In this chapter, we'll discuss the organization of typical newspaper and broadcast staffs and methods of gathering information to use in your various products.

The first step to gathering information is to know your community and audiences well. One journalist philosopher said, "The role of the press is to keep a community in conversation with itself." If a community is to function, the media must keep community members talking with one another. They must understand what interests their community, and then report on what is important. As an MC, you are the internal media for the Navy.

The key to being an effective reporter serving your community is knowing what to look for, where to look for it, and how to use your time effectively. You should become familiar with your command's organizational structure, key offices and helpful points of contact. Much of this information you will learn through networking and through your fellow MCs.

ORGANIZING COVERAGE

Beat System

Most command newspapers and broadcast detachments use a beat system through which reporters make regular visits to a specific source or area to gather news.

One type is the "geographical beat," whereby the reporter is assigned to cover a specific area of the installation or, perhaps, a particular department or division.

The "functional beat" system is one in which a reporter is responsible for covering any event pertaining to his "functional" area. Under this system, if you write about sports, you go to all the games and related activities.

Categories of reporters

Civilian newspapers and networks use beat systems, but they also categorize reporters. General assignment reporters cover a variety of assignments regardless of subject. Special assignment reporters cover stories for which they are especially adept, such as legal, consumer, science health, etc. If your paper or broadcast detachment uses a geographical beat system, you are a general assignment reporter. If it uses the functional beat system, you are a special assignment reporter.

Stringers

Most military public affairs offices have a limited number of personnel who can't be everywhere at once, thus hindering the mission of telling the Navy story. To help fulfill the mission, you can employ stringers – fellow Sailors, civilians or family members – as part-time reporters who write or provide story information about events in their organizations or communities. Stringers should be trained to determine news value, prepare copy for submission, and identify the importance of deadlines. Stringers are compensated for their services through bylines and recognition from the command.

TYPES OF NEWS SOURCES

For an energetic and resourceful writer, avenues for finding news stories are limitless. In reality, however, you will find that your job in the Navy does not give you the luxury of spending days, or even hours, tracking down elusive leads that may eventually result in one story.

Your job as an MC is to tell the Navy story. That means you must write positive copy about your command and its people (exception: adverse news situations). This is especially true regarding ship or station newspapers for which you may be writing. Their purpose is to inform, educate and entertain their readers and to provide a means of recognizing the achievements of the personnel in the organizations they represent.

Written Communications

Typically you will find the primary sources of Navy news come from messages, directives, e-mail and official correspondence. This can include news of coming events; current fleet exercises and operations; search, rescue and salvage operations and countless other occurrences.

Messages – When a message arrives aboard ship or at a shore activity, they are made and distributed to various departments. The PAO normally gets copies of all message traffic that might be of interest in carrying out PAO duties.

Information contained in a message is seldom detailed enough to be used for writing a comprehensive story. However, the basic facts are included and they provide a good starting point for you to develop a story.

Directives – Directives provide another source of Navy news for release to the civilian news media. You will find that much of the information they contain is intended for use by Navy personnel. Information about pay and allowances, uniform changes, advancements and promotions, service members' and dependents' benefits, training and educational programs, new regulations, morale, leadership, charity drives and similar subjects are put out in directive form. When analyzed and written in news form to play up local interest or some other news peg, information of this type makes

good copy for command newspapers and other publications written primarily for a Navy-oriented audience.

Official Correspondence – Official correspondence between commands, whether written on official letterhead or sent by e-mail, often provides tips for worthwhile stories. Also, products from the Navy Chief of Information, such as Rhumb Lines, provide Navywide themes and messages, which can be turned into stories of interest to local Sailors. Keep in mind, security is an important factor for you to consider before using any information. If the material is classified, you must not use it.

NOTE: *Remember, when you receive news or items of news value in written form as above, you must localize and rewrite the information to meet the needs and interest of your audiences.*

NEWSGATHERING

The most common methods of gathering news are interviews, observation and research. With each project, you may employ all three and more than once.

INTERVIEWING

Interviews are the foundation of news reporting, and the act of interviewing is an acquired skill that must be practiced, practiced and practiced. About 90 percent of everything in a news story is based on some form of interviewing either in person, by telephone or occasionally, by correspondence. Whenever possible, you should always conduct interviews in person.

Interviews can be either planned or unplanned. Planned interviews are always recommended; however, you may find yourself in the middle of a news event and you need to conduct an impromptu, unplanned interview. With planned interviews, you have time to conduct research prior to sitting down with your subject-matter expert. In an unplanned interview, you must think on your feet. Using the five W's and H should get you started with the basic questions.

As an MC in search of information, you must learn who to get information from and how to record facts. You must learn techniques for handling different kinds of people, how to draw some out, how to keep others on the topic, and how to evaluate the motives or honesty of others. In short, you must learn how to get along with people and how to treat them with tact and understanding while still accomplishing your purpose.

Basic Interviewing Techniques

The success of an interview depends on the writer's preparation, professionalism and "people skills." You have to be able to ask the right questions in the right way at the right time. Much of it is something that cannot be taught - only learned through experience. But if you can remember the fundamentals of interviewing, you will continue to develop. Interviewing enables writers to not only get information, but to add color and dimension to stories while also establishing a network of contacts.

An interview is a form of two-way communication. Its purpose is to investigate, explore and reconfirm facts surrounding a news story, event or topic. It also offers expert opinions on the facts that are the framework of the story and adds dimension that would be hard to produce strictly from facts.

We find the experts and ask the questions interested readers would ask in order to write a thorough, informative story. Although an MC should know a little about the interview topic, it's not necessary to be a subject-matter expert to conduct a good interview and write a good story.

You must keep in mind that you not only represent yourself, but also your publication, your command and the Navy. It's vital that you act professional and maintain your military bearing while interviewing any person - regardless of rank or position. As discussed in Chapter 1 of this module, being an MC means being squared away – proper haircut, shined shoes, and neatly pressed uniform with fresh ribbons and other insignia. It also means to be well spoken.

Before the Interview

When possible, take time to prepare for the interview. The first step in the interviewing process is defining the purpose for the interview. Identify the information you want and who can provide it. This will form the foundation for your interview preparation. Identifying your subject-matter expert (SME, pronounced "smee") is key. Don't be afraid to interview persons other than the leadership. Sailors on the deckplates are closer to the information on a daily basis, just be wise and think professional when choosing your SME. Also, prepare to interview more than one person. Don't limit your news or feature to only one person's point of view.

Once you identify your SME, contact him or her and set up a time and location for the interview. Be punctual. Picking the location is as important as picking the SME. Be aware of distractions.

Research comes next. Research is nothing more than digging out information from files and reference works. Research prepares you for the interview, allows you to verify and amplify facts, and gives depth to your products. Below are possible research avenues:

- Military and public libraries (books, consumer magazines, trade magazines, etc)
- *Newspaper morgues* – A morgue contains previously released editions of a publication. Within morgue files, you can retrieve historical and background information as well as ideas that can be refreshed for upcoming stories
- Public affairs guidance, Rhumb Lines, fact files, quick responses, messages, etc
- Maritime strategy
- Fellow MCs who have covered similar or previous events
- *Biographies* – command leadership typically keep their bios up-to-date. Also, these items, as you may remember, are found in welcome aboard and media kits. Flag officer bios can be found in the [Navy leadership](#) section on [Navy.mil](#).
- *The Internet* – One of the most common sources of information today is the Internet. Nearly every Navy command has its own official website. These sites provide valuable information on the makeup of the command, command history and special events. An advantage to using the Internet is that the information is updated regularly and remains more current than other sources. Examples of Navy websites to help in your research:
 - [U.S. Navy](#)
 - [History and Heritage Command](#)
 - [CHINFO](#)
 - [Navy Personnel Command](#)
 - [Naval Education and Training Command](#)

—[Non-Resident Training Courses](#)

—[Defense Media Activity](#)

For a list of all official Navy websites:

—[Links of interest](#)

—[Alphabetical listing of Navy websites](#)

When conducting research, you may discover that the best way to gather information about your topic is through **observation**. For example, you may be writing a feature story about the base gym's new cardio room. Best way to record the sights, sounds and smells of the gym is to go to the gym and observe for a while. Great writers gather not only information from SMEs, but they also look for the colorful, the dramatic or the unusual in any situation. The difference between a good story and a poor one is often in the skill of the observer. Skilled observers use their eyes, ears, minds, notebooks, pens and digital recorders.

In addition to research and observation, you should plan possible questions prior to interviewing your SME. Start with the 5 W's and H, and then build from there. Without good questions, getting the information readers want is nearly impossible.

This is the best time to put together the items you will need for the interview as well. Your interview kit should include at a minimum a notepad and writing utensils. If you plan to use a recording device, ensure it is charged and you have spare batteries.

During the Interview

The time has come for you to conduct your interview. You have planned properly and are ready to gather the information for your story. Well-prepared MCs know planning will be fruitless if the interview itself falls short, however.

Immediately upon greeting your SME, introduce yourself and thank your SME for taking the time to speak with you. This will set the tone for the interview.

Before you jump into your planned questions, break the ice with a few questions to help the SME feel more comfortable going into the interview. Talk about the weather, a recent sporting event, an upcoming command event, etc. Don't dwell too long with the icebreaker questions however.

Other important interviewing techniques:

- Ask for permission to use your recording device. Even if using a recorder, you still need to take notes. With experience, you will develop your own shorthand transcription
 - Listen effectively during an interview. Your body language and eye contact should convey interest and make the interviewee feel at ease
 - Remember you are in control of the interview. You are there to accomplish a purpose and get the information you need to report the story. However, leave your interviewees plenty of latitude to introduce additional ideas.
- Ask open-ended questions, questions that keep the SME talking. Avoid questions that will only elicit a yes-or-no answer, unless you are asking a clarifying question to clear up something.

- Do not interrupt your SME. Let him or her speak. However, if your SME veers off on a tangent, politely steer him or her back on track. If, while on that tangent, your SME brings up something of interest or news value, make note of it. Then, ask the SME if you can schedule a separate interview at another time to cover that topic.
- Don't be afraid to get away from your prepared questions. Use the source's responses as a springboard to additional, follow-up or clarifying questions.
- Ask for clarification. Don't be afraid to ask the interviewee to explain, elaborate or restate important points. Be alert for vague words and follow up by asking specific questions.
- Confirm facts. Read numbers, names and facts back to the interviewee to check your notes.
- Pay attention to the time. Most people take time out of their busy schedules for interviews. Try to stay within the allotted time, but don't be a compulsive clock-watcher. Otherwise, the SME may think you are not interested in what he or she is saying.

After the Interview

Just as a story has a beginning, middle and end, an interview should have a well-executed closing.

- Make an effort to complete the interview on time, but carry on if the interviewee agrees and seems eager to offer other information. To signal your intent to close, review your notes and ask if he/she has any final thoughts or anything to add
- Thank the SME once again for taking the time for the interview
- Leave your business card or contact information and request contact information in return. Ask for the best way to get in touch with him/her for more information or to clear up any facts. Always leave a "foot in the door"
- Review and fill in your notes as soon as possible after the interview. Don't wait or you'll forget what was said and won't be able to decipher your shorthand. It also helps to outline your notes by highlighting good quotes or important points
- You may need to follow-up to fill in "holes" in your story. Ask your subject to confirm, correct or elaborate information missing or unclear in your notes. Remember, the success of an interview depends on the MC's preparation, professionalism and "people skills."

As you progress in your career, you will hone your interviewing skills. The ability to ask questions and listen effectively to the responses will make your stories more informative and interesting, which in turn will increase your readership's interest in your publication.

Personality Interviews

Personality interviews are those conducted for personality features as discussed in Chapter 7. When conducting personality interviews you merge the techniques and processes listed above for interviews and observation. During the personality interview you should make a special effort to observe the subjects appearance, mannerisms, environment and character while asking questions to get into the subject's personality. A good personality feature then blends the results from the interview with your preliminary research and secondary interviews to bring the individual to life.

Telephone Interviews

As discussed, face-to-face interviews are always best. However, there may be times when that may not be possible. In this situation, you may have to conduct a telephone interview. Telephone conversations may range from full-scale interviews to brief queries to verify or amplify information. But regardless of how often you use this method of newsgathering, you should keep the following points in mind:

- Know what information you want before you dial
- Keep your pencil and paper handy
- Be polite and businesslike
- Make sure you get your facts straight. Confirm any questions you may have before you hang up and re-check your information by reading it back to the person who has given it to you
- Ask the other person to repeat figures or spell out names
- Avoid three-way conversations among yourself, the person on the telephone, and somebody else in your office.

Although a telephone is a very useful instrument, remember it is not the only, and not necessarily the best, method of gathering news. It should supplement, but not replace, all other methods.

Prepared-Question Interview

When direct person-to-person or telephone interviews cannot be arranged, some journalists resort to the prepared-question interview, or the sending of questions to the source via e-mail or through assisting personnel (aides). This is typically restricted to interviews with senior leadership, such as the commanding officer. The success of this interview depends on the quantity and quality of information collected from the written interview and your sense of news value and writing ability. A word of caution must be given here. DO NOT use this interview technique without permission from your supervisor or chief. A face-to-face interview is ALWAYS the best method!

News Conference

Since the 1960s, one of the most popular methods of gathering news is through a news conference. By presenting news conferences "live" on television, President John F. Kennedy raised this newsgathering technique into one of the most potent forces in the public exchange of opinion between the people and the government. Today, we use news conferences whenever there is a news event of great importance to the local public or when a prominent official who wants to address the media visits. News conferences establish public esteem, clear up misunderstandings, erase controversy and show the transparency of the Navy by disseminating the same information to the media at the same time.

If you are assigned to cover a news conference, you should treat it like any other newsgathering process. Preliminary groundwork to include research of the person giving the news conference is still a must. During the news conference, you may only have the opportunity to ask one question, so you pay close attention to all other questions and answers being communicated.

Man-on-the-Street Interview

Man-on-the-street interviews (See Figure 8-1) can be used for print or broadcast. During this type of interview, you ask several subjects the same question. This method gives your audience a voice on a particular subject, such as new uniforms, physical fitness, seasonal celebrations, etc. This interview must be accompanied by a still or video camera to show the people being interviewed.

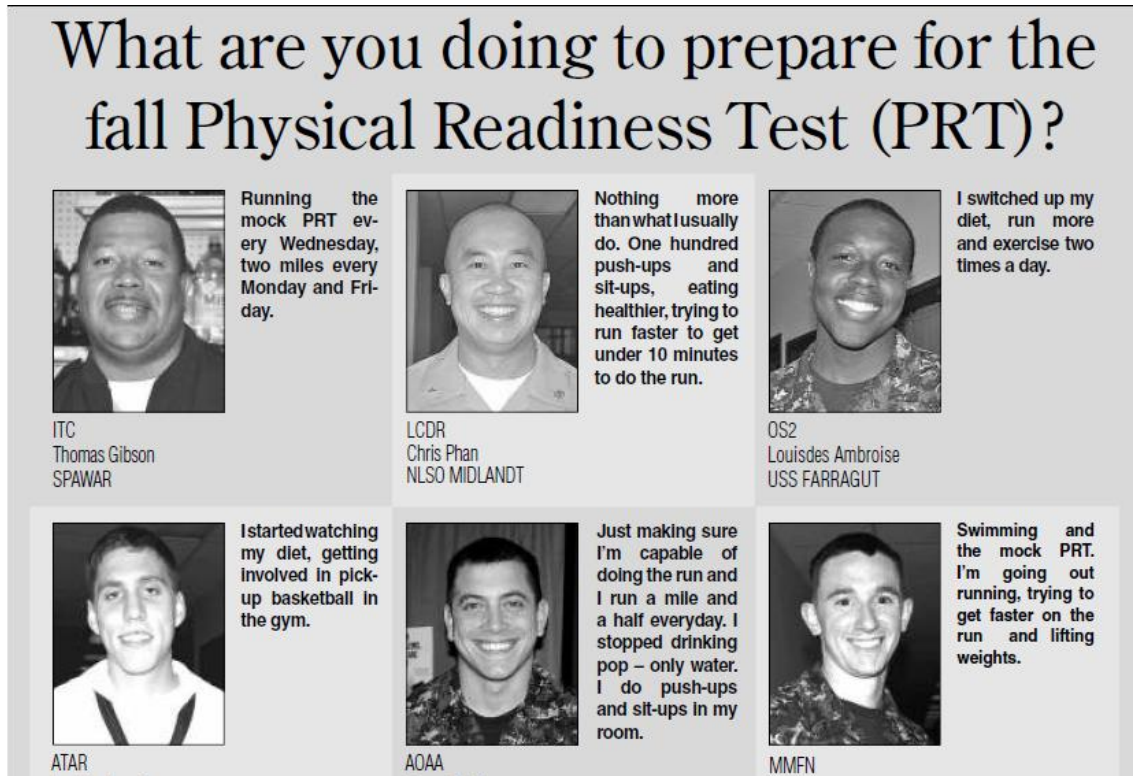


Figure 8-1, Man-on-the-Street.

Multimedia Interviews

Building upon what you have learned in this chapter, you can take these techniques and apply them to interviews to be used on your ship's SITE system or for an All Hands News Update (see Chapter 4). These interviews should be properly and thoroughly planned interviews. The only real difference in this interview is that you will have a video camera through which you will record the subject and/or yourself, depending on the setting. Location is extremely important when shooting a multimedia interview. You may shoot on location or in a studio. However, interviewing in a confined studio space may make your subject uncomfortable.

Remote Interview

The remote interview is conducted on location at a specific event and can be a multimedia or man-on-the-street interview. The major disadvantages of a remote interview are the limitations in station equipment and the lack of control over the environment. Nevertheless, this type of interview gives you the advantage of timeliness.

Sources for Sportswriting

Writing sports is similar to writing news, and so is gathering information for your sports news, with one exception – your sources. Like news writers, a problem for many beginning sports writers is knowing where to gather the needed information. Consider the following sources and note that officials are omitted from the list because they are seldom, if ever, a source of information:

- *Morale, Welfare and Recreation* (MWR) for the ins and outs of recreation, intramural and youth programs, including rules, schedules and official scorebooks
- *Coaches and managers* for details about team members, lineups and rosters, game plans, quotes and information about a contest, especially a contest you did not cover yourself
- *Team members* for accounts of what happened in the game. Be cautious. Many losing teams tend to blame the loss on the officiating, whether they lost by one point or 30 points
- *Official scorers* for game statistics and scorebooks. If you run a box score of the game, be sure your stats match those of the official scorer
- *Fans* for color and sidelight information, where appropriate. Often used in sidebar stories, fan reactions can help tell the story of a team's success or misfortune.

Officials are impartial and usually refuse to comment. If an official's call is vital to the story, do not expect him to explain or justify it unless it is a matter of rule interpretation. Never ask an official about judgment calls (balls and strikes, close calls on the bases, whether a receiver was in or out of bounds when he caught a pass, whether a basketball player traveled, etc.). Officials are, however, legitimate subjects for personality and rules clinic features.

Additional sports coverage guidelines (including help on compiling statistics) can be found in the latest edition of the AP Stylebook.

SUMMARY

In this chapter, you learned about news staffs and about newsgathering. Newsgathering is the foundation of reporting and should become part of your everyday life as an MC. But with anything else, it takes practice.

This chapter also wraps up the public affairs module. The information you have read within these pages is just the beginning. From here, we will shift gears and move on to the visual information side of the MC rating. Module 2 builds upon what you have learned here.

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APPENDIX I

MC ACRONYMS – MODULES 1 & 2

AAC	<i>Advanced Audio Coding</i>
AFRTS	<i>Armed Forces Radio and Television</i>
AIFF	<i>Audio Interchange File Format</i>
ARPA	<i>Advanced Researched Project Agency</i>
ASD(PA)	<i>Assistant Secretary of Defense for Public Affairs</i>
AU	<i>Encoded Audio Format</i>
AVCHD	<i>Advanced Video Coding High Definition</i>
AVI	<i>Audio/Video Interleaved</i>
BMP	<i>Bitmap Image</i>
BNC	<i>Bayonet Neill-Concelman</i>
CBT	<i>Computer Based Training</i>
CCD	<i>Charged Coupled Device</i>
CCU	<i>Camera Control Unit</i>
CD-ROM	<i>Compact Disc Read Only Memory</i>
CE	<i>Civilian Enterprise</i>
CHINFO	<i>Chief of Information</i>
CMY	<i>Cyan, Magenta and Yellow</i>
CMYK	<i>Cyan, Magenta, Yellow & Key (black)</i>
CODEC	<i>Coder-Decoder</i>
COMCAM	<i>Combat Camera</i>
CP10	<i>Continuing Promise 2010</i>
CSS	<i>Cascading Style Sheets</i>
CU	<i>Close-Up</i>
DIMOC	<i>Defense Imagery Management Operations Center</i>
DINFOS	<i>Defense Information School</i>
DMA	<i>Defense Media Activity</i>
DNS	<i>Domain Name Server</i>
DoD	<i>Department of Defense</i>
DoN	<i>Department of the Navy</i>
DPI	<i>Dots Per Inch</i>
DSLR	<i>Digital Single Lens Reflex</i>
DTP	<i>Desktop Publishing</i>

<i>DTS</i>	<i>Direct to Sailor</i>
<i>DV</i>	<i>Distinguished Visitor</i>
<i>DV</i>	<i>Digital Video</i>
<i>DVD-ROM</i>	<i>Digital Versatile Disk-Read Only Memory</i>
<i>ECU</i>	<i>Extreme Close-Up</i>
<i>EEFI</i>	<i>Essential Elements of Friendly Information</i>
<i>ELS</i>	<i>Extreme Long Shot</i>
<i>ENG</i>	<i>Electronic Newsgathering</i>
<i>EOD</i>	<i>Explosive Ordnance Disposal</i>
<i>EV</i>	<i>Exposure Valve</i>
<i>FFS</i>	<i>Full-Figure Shot</i>
<i>FFT</i>	<i>Fast File Transfer</i>
<i>FHTNC</i>	<i>Fleet Hometown News Center</i>
<i>FOIA</i>	<i>Freedom of Information Act</i>
<i>FPS</i>	<i>Frames Per Second</i>
<i>FTP</i>	<i>File Transfer Protocol</i>
<i>GBS</i>	<i>Gigabytes</i>
<i>GIF</i>	<i>Graphic Interchange Format</i>
<i>GN</i>	<i>Guide Number</i>
<i>HTML</i>	<i>Hypertext Markup Language</i>
<i>IBC</i>	<i>Internet-based capabilities</i>
<i>IP</i>	<i>Internet Protocol</i>
<i>IPC</i>	<i>Intermediate Photojournalism Course</i>
<i>IPTC</i>	<i>Information Interchange Model Caption</i>
<i>ISA</i>	<i>Interservice Support Agreement</i>
<i>ISO</i>	<i>International Standards Organization</i>
<i>ISP</i>	<i>Internet Service Provider</i>
<i>JFC</i>	<i>Joint Force Commander</i>
<i>JIRSG</i>	<i>Joint Interservice Regional Support Group</i>
<i>JPEG</i>	<i>Joint Photographer Experts Group</i>
<i>K</i>	<i>Kelvin</i>
<i>LaDR</i>	<i>Learning and Development Roadmap</i>
<i>LS</i>	<i>Long Shot</i>
<i>MBs</i>	<i>Megabytes</i>
<i>MC</i>	<i>Mass Communication Specialist</i>
<i>MIDI</i>	<i>Musical Instrument Digital Interface</i>

MILPERSMAN	<i>Military Personnel Manual</i>
MOA	<i>Memorandum of Agreement</i>
MOU	<i>Memorandum of Understanding</i>
MOV	<i>Quick Time Movie</i>
MPEG	<i>Moving Picture Experts Group</i>
MS	<i>Medium Shot</i>
MWR	<i>Morale, Welfare and Recreation</i>
NAVCO	<i>Navy Office of Community Outreach</i>
NAVINFO	<i>Navy Offices of Information</i>
ND	<i>Neutral-Density</i>
NJROTC	<i>Navy Junior Reserve Officers Training Corps</i>
NECs	<i>Navy Enlisted Classifications</i>
NEOCS	<i>Navy Enlisted Manpower and Enlisted Classification and Occupational Standards</i>
NKO	<i>Navy Knowledge Online</i>
NPASE	<i>Navy Public Affairs Support Elements</i>
NRTC	<i>Nonresident Training Course</i>
NVNS	<i>Navy Visual News Service</i>
OIC	<i>Officer In Charge</i>
OPDOC	<i>Operational Documentation</i>
OPREPS	<i>Operational Reports</i>
OPSEC	<i>Operational Security</i>
PAG	<i>Public Affairs Guidance</i>
PA Regs	<i>Public Affairs Policy and Regulations</i>
PA/VI	<i>Public Affairs and Visual Information Team</i>
Pixels	<i>Picture Elements</i>
PNG	<i>Portable Network Document</i>
POD	<i>Plan of the Day</i>
POD	<i>Print on demand</i>
POM	<i>Plan of the Month</i>
POW	<i>Plan of the Week</i>
PPI	<i>Pixels Per Inch</i>
PSD/PSP	<i>Photoshop/Paint Shop</i>
RC	<i>Resin Coated</i>
RDT&E	<i>Research, Development, Test and Evaluation</i>
RGB	<i>Red, Green, Blue</i>

<i>RIMPAC</i>	<i>Rim of the Pacific</i>
<i>RMVB</i>	<i>RealMedia Variable Bitrate</i>
<i>RSS</i>	<i>Really Simple Syndication</i>
<i>SAPP</i>	<i>Security, Accuracy, Propriety and Policy</i>
<i>SDII</i>	<i>Sound Designer II</i>
<i>SDV</i>	<i>SEAL delivery team</i>
<i>SECDEF</i>	<i>Secretary of Defense</i>
<i>SECNAV</i>	<i>Secretary of the Navy</i>
<i>SDMI</i>	<i>Secure Digital Music Initiative</i>
<i>SITE</i>	<i>Shipboard Information, Training and Entertainment</i>
<i>SITREPS</i>	<i>Situational Reports</i>
<i>SLR</i>	<i>Single Lens Reflex</i>
<i>SME</i>	<i>Subject-Matter Expert</i>
<i>SMPTE</i>	<i>Society of Motion Picture and Television Engineers</i>
<i>TCP/IP</i>	<i>Transmission Control Protocol/Internet Protocol</i>
<i>TECDOC</i>	<i>Technical Documentation</i>
<i>TIFF</i>	<i>Tag Image File Format</i>
<i>TTL</i>	<i>Through The Lens</i>
<i>URL</i>	<i>Uniform Resource Locator</i>
<i>VI</i>	<i>Visual Information</i>
<i>VIDOC</i>	<i>VI Documentation</i>
<i>W3C</i>	<i>World Wide Web Consortium</i>
<i>WAV</i>	<i>Waveform Audio Format</i>
<i>WMA</i>	<i>Windows Media Audio</i>
<i>WMV</i>	<i>Windows Media Video</i>
<i>WWW</i>	<i>World Wide Web</i>

APPENDIX II

REFERENCES USED TO DEVELOP THE TRAMAN

Adobe® Systems Creative Suite 3 Dreamweaver User's Manual

Adobe® Systems Creative Suite 3 InDesign User's Manual

Adobe® Systems Creative Suite 3 Photoshop User's Manual

Ang, Tom. "Digital Photography: An Introduction." ISBN 0789499762

Associated Press Stylebook and Briefings on Media Law

Blair, Raymond N. (Graphic Arts Technical Foundation). "The Lithographer's Manual (9th edition). ISBN 088362169X

CHINFOINST 5720.8 Public Affairs Tactics Manual

DINFOS Bindery Handout

DINFOS Broadcast Writing Style Guide

DINFOS Color Management

DINFOS Digital Imagery Enhancement and Editing

DINFOS Computer Fundamentals

DINFOS Digital Audio and Video Editing

DINFOS Digital Color and Page Design

DINFOS Handout Reference for Electronic Presentations

DINFOS Input and Output Devices

DINFOS Intermediate Photojournalism Course Handbook (Functional Area 1)

DINFOS Multimedia Authoring

*DINFOS Public Affairs Leadership Department Training Resources Web page
(<http://www.dinfos.dma.mil/Dinfosweb/Students/pald.aspx#>)*

DINFOS Telecommunications and Web Design

DINFOS Vector-Based Graphic Design

DINFOS Video Production Student Guide FA I (Foundation of Video Concepts)

DINFOS Video Production Student Guide FA II (Foundation of Videographic Production)

DINFOS Video Production Student Guide FA III (The Art of Videographic Production)

DINFOS Video Production Student Guide FA IV/V (The Art of Video Documentation and Culmination)

DOD Directive 5230.16 Nuclear Accident and Incident Public Affairs Guidance

DODINST 5040.02 Visual Information

DODINST 5040.05 Alteration of Official DOD Imagery

DODINST 5040.07 Visual Information Production Procedures
DODINST 5120.2 Armed Forces Radio and Television Service
DODINST 5120.4 Department of Defense Newspapers, Magazines and Civilian Enterprise Publications
DODINST 5400.13 Public Affairs Operations
DOD Principles of Information
DOD Webmasters Guidance (<http://www.defense.gov/webmasters/>)
JOINT PUB 3-61 Joint Public Affairs Doctrine
Naval Enlisted Manpower and Personnel Classifications and Occupational Standards
NAVEDTRA 14208 Photographer's Mate Advanced NRTC
NAVEDTRA 14209 Photographer's Mate Basic NRTC
NAVEDTRA 14321 Journalism Basic NRTC
NAVEDTRA 14332 Illustrator Draftsman (Equipment)
NAVEDTRA 14333 Illustrator Draftsman (Executionable Practices)
NAVEDTRA 14334 Illustrator Draftsman (Presentations Graphics)
NAVEDTRA 14335 Journalism Advanced Nonresident Training Course
NAVPERS 15560D Military Personnel Manual
Navy Visual News Training (<https://www.chinfo.navy.mil/visualnews/training.html>)
NIKON® Autofocus Speedlight SB-800 Instruction Manual
NIKON® Digital Camera D300 User's Manual
OPNAVINST 3104.1 Navy Visual Information Program Policy and Responsibilities
OPNAVINST 3104.3 Navy Combat Camera Program Policy, Responsibilities and Procedures
OPNAVINST 3432.1 Operations Security
OPNAVINST 5510.1 Department of the Navy Information and Personnel Security Program Regulation
OPNAVINST 5720.2 Embarkation in U.S. Naval Ships
OPNAVINST 5726.8 Outreach: America's Navy
Sabin, William A. "The Gregg Reference Manual: A Manual of Style, Grammar, Usage, and Formatting (10th Edition)" ISBN 0073545430
SECNAVINST 5211.5 Privacy Act Program
SECNAVINST 5720.42 Freedom of Information Act
SECNAVINST 5720.44 Public Affairs Policy and Regulations
SECNAVINST 5724.3 Fleet Hometown News Program Policy and Regulations
SECNAVINST 5420.47 Navy Policy for Content of Publicly Accessible World Wide Web Sites
SECNAVINST 5870.4 Copyright
U.S. Counterfeit Detection Act of 1992 (http://www.secretservice.gov/money_illustrations.shtml)
U.S. Navy Regulations

U.S. Navy Style Guide (http://www.navy.mil/submit/view_styleguide.asp)

U.S. Navy Website (<http://www.navy.mil>)

U.S. Rehabilitation Act (Section 508) (<http://www.section508.gov>)

U.S. State Department Guidelines for Producing High Quality Photographs for U.S. Travel Documents

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Assignment Questions

Information: The text pages that you are to study are provided at the beginning of the assignment questions.

ASSIGNMENT 1

Textbook Assignment: *“The Navy Mass Communication Specialist”, Chapter 1.*

1-1. Which of the following is the main function of a Navy MC?

1. Ensure bylines are published in command publication
2. Publish internal products on Navy.mil
3. Tell the story of America's Navy
4. Volunteer for community-service projects to get the good assignments

1-2. Which of the following is NOT one of the Navy's key audiences?

1. International allies
2. U.S. public
3. Command personnel
4. Navy personnel around the fleet

1-3. Which of the following personal traits are essential to becoming a successful MC?

1. Appearance, intuition and voice
2. Appearance, military bearing and voice
3. Appearance, investigative skills and military bearing
4. Appearance, intuition and writing skills

1-4. Where do you find a listing of Navy enlisted classification codes for MCs?

1. Public Affairs Regulations
2. Uniform Regulations
3. Navy Enlisted Manpower and Enlisted Classification and Occupational Standards Manual
4. Navy Rates and Ratings Manual

1-5. What NEC is earned through completion of the Digital Multimedia course at DINFOS?

1. 8147 – Photojournalism Specialist
2. 3251 – Broadcast Manager
3. 8151 – Graphic Illustrator
4. 8193 – Electronic Imaging System Specialist

1-6. Where can you find rating-specific guide to help you navigate your career from E1 to E9?

1. Navy College Office
2. MCs Talk Shop
3. Learning and Development Roadmap
4. All Hands Owner's and Operator's Manual

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ASSIGNMENT 2

Textbook Assignment: “Principles, Fundamentals and Organization”, *Chapter 2*.

2-1. Which of the following principles DOES NOT drive Navy public affairs and visual information?

1. Accountability to the public
2. Expeditious release of information
3. Message Alignment
4. Protection from release of damaging information

2-2. Navy public affairs is founded upon which of the following governmental standard?

1. Navy Public Affairs Regulations
2. DoD Principles of Information
3. Federal Release Guidelines
4. Privacy Act of 1974

2-3. Which of the following answers best outlines the cyclical process that serves as the foundation of public affairs?

1. Research, planning, implementation and evaluation
2. Research, planning, interviewing and examination
3. Planning, research, guidance and evaluation
4. Planning, implementation, lessons learned and survey feedback

2-4. Who is overall responsible for establishing Navy public affairs policy and directing its implementation?

1. Chief of Information
2. Secretary of the Navy
3. Secretary of Defense for public affairs
4. Chief of Naval Operations

2-5. Who is responsible for coordinating, planning and implementing the Navy's public affairs policies and programs?

1. Chief of Information
2. Secretary of the Navy
3. Defense Media Activity
4. Chief of Naval Operations

IN ANSWERING QUESTIONS 2-6 THROUGH 2-8 SELECT THE CHINFO FIELD ACTIVITY THAT MATCHES THE DESCRIPTION GIVEN AS THE ANSWER.

2-6. Headquartered in New York and provides coordination support for publishers?

1. Fleet Hometown News Center
2. Navy Office of Information (East)
3. Navy Public Affairs Support Element
4. Navy Visual News Center

2-7. Provides expeditionary support with scalable, deployable forces?

1. Fleet Hometown News Center
2. Navy Office of Information (East)
3. Navy Public Affairs Support Element
4. Navy Visual News Center

2-8. Coordinates support with film and television companies?

1. Defense Media Center
2. Navy Office of Information (West)
3. Navy Public Affairs Support Element
4. Navy Visual News Service

2-9. At any given command, who typically serves as the command spokesman and media liaison?

1. Executive Officer
2. Public Affairs Officer
3. Senior MC
4. MC on assignment

2-10. Which of the following public affairs principle is based upon the fundamental of an empowered public?

1. Accountability to the public
2. Expeditious release of information
3. Full disclosure of information
4. Protection from release of damaging information

ASSIGNMENT 3

Textbook Assignment: “Policies and Guidance”, Chapter 3.

3-1. Which of the following CHINFO divisions is responsible for providing access to P-A Net?

1. Social Media
2. Community Relations
3. News Desk
4. Policy, Doctrine and Technology

3-2. What document has been described as the “gold standard of news writing”?

1. Gregg’s Reference Manual
2. U.S. Navy Style Guide
3. Associated Press Stylebook
4. Public Affairs Tactics Manual

IN ANSWERING QUESTIONS 3-3 THROUGH 3-5 SELECT THE POLICY, INSTRUCTION OR GUIDANCE THAT MATCHES THE DESCRIPTION GIVEN AS THE ANSWER.

3-3. The “how-to” partner to the PA Regs.

1. Public Affairs Tactics Manual
2. Rhumb Lines
3. Joint Public Affairs Doctrine
4. Public Affairs Guidance

3-4. Brief summary of a specific issue/incident and gives responses for media queries.

1. Public Affairs Tactics Manual
2. Fact File
3. Quick Responses
4. DoD Principles of Information

3-5. Tailored to specific events or issues to ensure message alignment.

1. Public Affairs Guidance
2. Navy Visual Insider
3. Public Affairs daily report
4. Fact File

3-6. In which of the following situations would certain information not be releasable to the media?

1. All facts are not available
2. Information available could cause embarrassment
3. Information could threaten national security
4. Never

3-7. In what publication would you find specific statements for release during a nuclear accident or incident?

1. DoD Principles of Information
2. Nuclear Accident and Incident Public Affairs Guidance
3. Rhumb Lines
4. Freedom of Information Act Guidance

3-8. What number is the maximum amount of days allowable for the Navy to respond to a Freedom of Information Act request?

1. 5
2. 10
3. 12
4. 30

3-9. Which of the following instances DOES NOT fall under the Fair Use Doctrine for acceptable reasons for not obtaining copyright use approval?

1. When reviewing a book, movie or television program.
2. When using a copyrighted work in a commentary to refute a point
3. When using portions of a copyrighted work to support a news article
4. When contact information of the copyright information is not known by the potential user

3-10. Which of the following best describes the term defamation?

1. Legal argument to protect Freedom of the Press
2. Violation of the Fair Use Doctrine
3. Spoken or written words that harm one's reputation
4. Failure to comply with a Freedom of Information Act request

IN ANSWERING QUESTIONS 3-11 THROUGH 3-14 SELECT THE RELEASE OF INFORMATION VIOLATION THAT MATCHES THE DESCRIPTION GIVEN AS THE ANSWER.

3-11. Information released violates operational security

1. Accuracy
2. Policy
3. Propriety
4. Security

3-12. Photographs released are not in good taste?

1. Accuracy
2. Policy
3. Propriety
4. Security

3-13. Information released is not factual?

1. Accuracy
2. Policy
3. Propriety
4. Security

**3-14. Name of injured personnel released
before next of kin notified ?**

1. Accuracy
2. Policy
3. Propriety
4. Security

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ASSIGNMENT 4

Textbook Assignment: *“Public Affairs Functions”, Chapter 4.*

4-1. What are the three functions of public affairs?

1. Community relations, newsgathering and photography
2. Internal information, public information and community relations
3. Newswriting, photography and multimedia production
4. Community relations, internal information and social media

4-2. What public affairs approach requires you to plan ahead and be prepared for command events and day-to-day activities?

1. Reactive
2. Crisis
3. Semi-reactive
4. Proactive

4-3. What is the foundation of successful public affairs?

1. Planning
2. Research
3. Crisis Management
4. Research and evaluation

4-4. Which of the following print publications are printed at no cost to the Navy and contains a maximum of 60 percent advertising?

1. Family newsletters
2. Media information kits
3. Civilian enterprise newspapers
4. Cruisebooks

4-5. Which of the following is NOT a goal for the dissemination of internal information?

1. Reaching a shadow audience
2. Recognizing achievements
3. Helping Sailors/Marines understand their roles in Navy mission
4. Linking Sailors/Marines with leadership through free flow of information

4-6. Aboard ship, which of the following is the least effective means of disseminating internal information?

1. Command newspapers
2. E-mail
3. Morning quarters
4. SITE-TV

4-7. What is the intended copy-to-reader ratio when distributing All Hands Magazines?

1. 1:1
2. 1:3
3. 1:6
4. 1:10

4-8. Which of the following traits must be established and maintained in order to build a strong public affairs program?

1. Credibility
2. Personality
3. Hospitality
4. Respectability

IN ANSWERING QUESTIONS 4-9 THROUGH 4-10 SELECT THE NAVY PRODUCT THAT MATCHES THE DESCRIPTION GIVEN AS THE ANSWER.

4-9. Thirty-minute monthly news feature produced and distributed by the Defense Media Activity

1. All Hands Update
2. Navy Visual News
3. Any Day in the Navy Updates
4. All Hands Television

4-10. Daily one- to two-minute news packages used to highlight the goings on around the fleet

1. All Hands Updates
2. Navy Visual News
3. Any Day in the Navy Updates
4. All Hands Television

4-11. While on deployment, which of the following reasons should encourage you to utilize the Fleet Hometown News Center (FHTNC)?

1. Reduces shop's workload
2. Proven method for getting news to hometown newspapers and wire services
3. Civilian newspapers not authorized to communicate with deployed assets
4. Provides hometown news to deployed Sailors/Marines

4-12. Coordination with FHTNC should begin how many days prior to a unit's scheduled deployment?

1. 15
2. 30
3. 45
4. 60

4-13. What number of days following a unit's deployment will FHTNC maintain the unit's hold file?

1. 15
2. 30
3. 45
4. 60

4-14. Which of the following documents best describes a reporter's request information?

1. Impact request
2. Quick response
3. Media query
4. Call-out memo

4-15. Which of the following items are NOT required in a media information kit?

1. Brief description of command's mission
2. CO, XO and subject-matter expert biographies
3. Copy of welcome aboard brochure
4. Complete listing of command personnel's e-mail addresses

4-16. Which of the following activities are NOT aimed at communicating with the general public?

1. Tours
2. Speakers bureau
3. Band performances
4. SITE-TV

4-17. Which of the following community outreach programs takes Navy assets and personnel to America's heartland?

1. Navy weeks
2. Habitat for Humanity
3. Project Handclasp
4. Distinguished visitor embarks

4-18. Which of the following groups are considered internal publics?

1. Midshipmen, Navy families and local government officials
2. Navy families, ROTC members and media
3. Midshipmen, Navy families and Navy civilians
4. ROTC members, media and local government leaders

4-19. During a media visit to your command, a reporter asks you for an exclusive. In which of the following situations would you be permitted to grant this request?

1. When the request is based upon a reporter's original idea
2. When you can keep it secret from the other visiting media
3. When the requesting reporter covers events at your command more often than the others
4. Never

4-20. Which of the following personnel make the best tour guides when giving tours in an international port of call?

1. Duty section Sailors not scheduled to stand a watch during tour hours
2. Sailors who speak the host country's language
3. Junior officers working on their warfare qualifications
4. Flight deck personnel

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ASSIGNMENT 5

Textbook Assignment: *“Introduction to Newswriting”, Chapter 5.*

5-1. Which of the following is not an element of mass appeal?

1. Timeliness
2. Progress
3. Brevity
4. Conflict

IN ANSWERING QUESTIONS 5-2 THROUGH 5-6 SELECT THE ELEMENT OF MASS APPEAL THAT BEST MATCHES THE DESCRIPTION GIVEN AS THE ANSWER.

5-2. First female Sailors report to USS Submarine (SSBN 123).

1. Suspense
2. Oddity
3. Consequence
4. Sex

5-3. 100-percent advancement to MC1.

1. Prominence
2. Oddity
3. Consequence
4. Sex

5-4. Hour-by-hour account of missing Sailor from USS Destroyer (DDG 456).

1. Prominence
2. Oddity
3. Sex
4. Suspense

5-5. Breaking News.

1. Immediacy
2. Oddity
3. Sex
4. Progress

5-6. Annual Army-Navy football game.

1. Oddity
2. Conflict
3. Progress
4. Proximity

5-7. What is the importance of adhering to the ABCs of journalism ?

1. Eases copyediting
2. Adheres to SAPP requirements
3. Builds trust and credibility
4. All of the above

5-8. What are the three elements of an inverted pyramid-style news story?

1. Lead, bridge and body
2. Lead, body and summary
3. News peg, bridge and summary
4. Headline, lead and body

5-9. What, if any, is the maximum length of a summary news lead?

1. 15 words
2. 30 words
3. 50 words
4. None

5-10. What is the most common type of news lead?

1. Feature
2. Background
3. Summary
4. Direct address

5-11. Which of the following definitions best describes a story's news peg?

1. Story filename
2. Proposed headline
3. Most significant fact
4. Primary source

5-12 What are the primary parts of an impersonal who?

1. Rank and last name
2. Job title and unit
3. Full name and job title
4. Rank and unit

5-13. What number of days is included in a publication dateweek?

1. 7
2. 5
3. 10
4. 13

5-14. What term is used to describe the insertion of a writer's opinion in a hard news story?

1. Attribution
2. Commentary
3. Editorializing
4. Sidebar

5-15. Where in a hard news story do you find the story's lead emphasis?

1. Final paragraph
2. Headline
3. First few words of lead sentence
4. Slug

5-16. What part of a lead sentence identifies the past, present or future of the when element?

1. Dateline
2. Object
3. Subject
4. Verb tense

5-17. A news story's bridge serves which of the following purposes?

1. Updates the reader on events related to the current story
2. Elaborates, explains or provides authority to facts in the lead
3. Provides smooth transition to the body of the story
4. All of the above

5-18. When writing a follow-up story about a news event, you need to remind the reader of the previously reported facts. You do this with which of the following devices?

1. Attribution
2. Full identification
3. Tie-back
4. The "how" element

5-19. What portion(s) of a news story are typically used to adapt the news story to a news brief?

1. Lead
2. Lead and bridge
3. Lead and headline
4. First and last paragraphs

5-20. When following the inverted pyramid style of writing, in what sequence should you present the story's facts?

1. In chronological order
2. From greater to lesser importance
3. With most interesting details presented last
4. With the story built to a climax

5-21 Which of the following answers best describes the proper use of direct quotes?

1. Direct quotes can be reworded to correct grammar errors
2. Direct quotes are paraphrased bullets sent by a subject-matter expert
3. Direct quotes do NOT always require quotation marks
4. Direct quotes must always be written verbatim

5-22. What is the primary difference between internal news stories and external news releases?

1. Audience
2. Author
3. Format
4. Length

5-23. What is the purpose of a dateline?

1. Identifies intended audience
2. Includes VIRIN information
3. Tells where the story was written
4. Tells where the news happened

5-24. Which of the following locations stands alone in a dateline?

1. Jacksonville
2. Pearl Harbor
3. Pensacola
4. Whidbey Island

5-25 Which of the following elements of an external release must be established prior to release in order to properly target story's intended audience?

1. Dateline and military tie
2. Local angle and military tie
3. Supporting photograph and dateline
4. Supporting photograph and local angle

5-26 Which of the following elements of an external release must be established prior to release in order to properly target story's intended audience?

1. Dateline and military tie
2. Local angle and military tie
3. Supporting photograph and dateline
4. Supporting photograph and local angle

5-27 What is the primary purpose of a media advisory?

1. To request media contact information
2. To send follow-up releases to media who covered previous event
3. To encourage media to cover event
4. To solicit feedback following media visit

5-28 Which of the following elements of an external release must be established prior to release in order to properly target story's intended audience?

1. Dateline and military tie
2. Local angle and military tie
3. Supporting photograph and dateline
4. Supporting photograph and local angle

5-29 What is the goal for the timely release of information following an accident or incident?

1. One hour
2. Six hours
3. Within 24 hours
4. When all facts are available

5-30 Which of the following items of information must be included in an initial accident or incident story?

1. The cause of the accident/incident
2. A statement from leadership
3. Names of all persons involved
4. An investigation status statement

5-31 Which of the following elements should be included in an external news release in order to properly target a hometown audience?

1. Dateline and military tie
2. Local angle and military tie
3. Supporting photograph and dateline
4. Supporting photograph and local angle

5-32 Where in a sports story should the final outcome of the sporting event be placed?

1. Lead
2. Bridge
3. Final paragraph
4. Photo caption

5-33 On average, how many lines of broadcast copy are needed to produce a 30-minute piece?

1. 2-3 lines
2. 5-6 lines
3. 7-8 lines
4. 9-10 lines

5-34 Which of the following is NOT one of the six C's of broadcast writing?

1. Clear
2. Current
3. Consistent
4. Conversational

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ASSIGNMENT 6

Textbook Assignment: “Writing Headlines and Captions”, Chapter 6.

6-1. Which of the following reasons does NOT describe the importance of headlines?

1. Dresses up an editorial page
2. Reduces cost of printing
3. Catches a reader’s eye
4. Give publication more appealing look

6-2. What are the three general categories of headlines?

1. Editorial, feature and straight news
2. Editorial, novelty and direct address
3. Feature, question and straight news
4. Feature, question and direct address

6-3. Which of the following terms best describes the journalistic writing style used when writing headlines?

1. Editorial
2. Abbreviated
3. Inverted pyramid
4. Telegraphic English

6-4. Which of the following punctuation marks replaces the word “and” in headlines?

1. Period
2. Comma
3. Semicolon
4. Ampersand

6-5. Which of the following punctuation marks is used to indicate “said” or to create a pause for effect in a headline?

1. Colon
2. Period
3. Semicolon
4. Quotation marks

6-6. Which of the following errors occurs when a headline that runs over more than one line is broken in such a way that it creates a strange pause or phrase and/or potentially changes the meaning of a headline?

1. Bad split
2. Split infinitive
3. Dangling modifier
4. Error in agreement

IN ANSWERING QUESTIONS 6-7 THROUGH 6-11 SELECT THE TYPE OF HEADLINE THAT BEST MATCHES THE DESCRIPTION GIVEN AS THE ANSWER.

6-7. Used to direct a reader to a story continued from a previous page.

1. Jump
2. Standing
3. Banner
4. Masthead

6-8. Provides complementary information when placed below a main headline.

1. Drop
2. Wicket
3. Kicker
4. Standing

6-9. Runs across more than one column and gives prominence to a major news event.

1. Kicker
2. Wicket
3. Banner
4. Tripod

6-10. Identifies regular or recurring content.

1. Drop
2. Standing
3. Crossline
4. Masthead

6-11. Features typographical tricks and ornate characters.

1. Kicker
2. Hammer
3. Novelty
4. Standing

6-12 Which of the following terms is often used synonymously with the word "caption"?

1. Cutline
2. Sidebar
3. Dateline
4. Drop headline

6-13. What are the four major components of a photo caption?

1. Action, identification, background information and credit line
2. Lead, identification, secondary facts and classification code
3. Date, VIRIN, credit line and background information
4. Who, what, when and where

6-14. During which of the following circumstances is full identification of the subject(s) being photographed NOT required?

1. When the MC does not gather the subject's identifying information
2. When subject(s) name is too long to fit into allotted space
3. When the MC only has one hour to submit photograph
4. When three or more subjects are doing the action in the photograph

6-15. What is the purpose of adding background information to a photo caption?

1. Fills editorial space
2. Aids in cataloging and filing
3. Identifies the when and where
4. Tells reader why photograph was taken

ASSIGNMENT 7

Textbook Assignment: “Features”, Chapter 7.

7-1. In weekly publications, how do feature stories assist in telling the Navy story?

1. Draws upon human aspect of news
2. Goes beyond the hard facts
3. Mitigates the loss of timeliness
4. All of the above

IN ANSWERING QUESTIONS 7-2 THROUGH 7-5 SELECT THE TYPE OF FEATURE THAT BEST MATCHES THE DESCRIPTION GIVEN AS THE ANSWER.

7-2. Hard news idea enhanced by feature-writing techniques and styles

1. Unit
2. News
3. Historical
4. Point of interest

7-3. A vivid word picture that highlights a subject's personality, physical traits and an aspect that makes the subject unusual or unique.

1. Bright
2. Auxillary
3. Personality
4. Historical

7-4. Short, humorous story that breaks up or lightens serious or somber news.

1. Unit
2. News
3. Bright
4. Special interest

7-5. Focuses on special events, holidays, celebrations and seasons.

1. Auxilliary
2. Historic
3. Point of interest
4. Special interest

7-6. Which of the following lists best describe the basic structure of a feature story, in order?

1. Lead, bridge, quotations and literary description
2. Lead, bridge, body and conclusion
3. Headline, lead, body and conclusion
4. Headline, lead, bridge and literary description

7-7. In which of the following parts of a feature does the writer tell the audience what the feature is about?

1. Lead
2. Bridge
3. Headline
4. Literary description

IN ANSWERING QUESTIONS 7-8 THROUGH 7-10 SELECT THE TYPE OF FEATURE LEAD THAT BEST MATCHES THE DESCRIPTION GIVEN AS THE ANSWER.

7-8. Chronological, suspenseful opening that tells a story.

1. Summary
2. Narrative
3. Descriptive
4. Direct Address

7-9. Creates an overwhelming curiosity that entices the reader to keep reading.

1. Freak
2. Teaser
3. Summary
4. Narrative

7-10. Speaks to the reader.

1. Teaser
2. Summary
3. Descriptive
4. Direct address

7-11 Which, if any, of the following terms serves as another term for the "bridge" of a feature?

1. Nutgraph
2. Quicklink
3. Narrative
4. None of the above

7-12 Which of the following organizational patterns presents a feature in a logical sequence in relationship to the subject's physical surroundings?

1. Spatially
2. Topically
3. Specifically
4. Functionally

7-13. Which of the following patterns organizes a feature by time and sequence?

1. Spatially
2. Spatially
3. Functionally
4. Chronologically

7-14 Through which of the following conclusions does a feature writer complete an idea, bringing the audience full circle in the story?

1. Climax
2. Stinger
3. Tie-back
4. Wrap-up

7-15. Which of the following feature conclusions solves a problem presented and answers questions?

1. Stinger
2. Wrap-up
3. Tie-back
4. Summary

7-16 Which of the following conclusions fools a reader into expecting an ending then jolts the reader with a surprise, unexpected ending?

1. Climax
2. Stinger
3. Narrative
4. Unending

IN ANSWERING QUESTIONS 7-17 THROUGH 7-20 SELECT THE CREATIVE WRITING TOOL THAT BEST MATCHES THE DESCRIPTION GIVEN AS THE ANSWER.

7-17. Gives human qualities to non-living objects, ideas or things?

1. Syntax
2. Anecdote
3. Metaphor
4. Personification

7-18 Compares one thing to another for the sake of beauty, necessity or emphasis without using the words "like" or "as"?

1. Simile
2. Metaphor
3. Hyperbole
4. Personification

7-19. Exaggerates or overemphasizes a point.

1. Syntax
2. Simile
3. Metaphor
4. Hyperbole

7-20. Short, entertaining story that gives insight into a subject?

1. Syntax
2. Anecdote
3. Hyperbole
4. Personification

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ASSIGNMENT 8

Textbook Assignment: “Information and Newsgathering”, Chapter 8.

8-1. What is the first step in gathering information for a public affairs or visual information product?

1. Draft a storyboard
2. Identify your audience
3. Schedule SME interviews
4. Format your product template

8-2. Under which of the following beat systems do reporters covers specific areas or locations?

1. Spatial
2. Functional
3. Geographical
4. Hierarchical

8-3. In which of the following beat systems would you find special assignment reporters?

1. Spatial
2. Functional
3. Geographical
4. Hierarchical

8-4. After receiving a news release from the Navy Exchange Command about the rollout of new uniforms Navywide, what must you do prior to publishing the information in your command publication?

1. Draft a quick response
2. Send out a media advisory
3. Localize and rewrite the information
4. Place information in command template

8-5. Which of the following reasons DOES NOT describe a purpose of conducting SME interviews?

1. Reconfirm facts
2. Investigate information
3. Replace need for reference research
4. Add color and dimension to news story

8-6. What are the three most common methods of gathering news?

1. Internet, research and interviews
2. Internet, morgues and interviews
3. Interviews, observation and research
4. Interviews, morgues and observation

8-7 . What percentage of information for a news story should be gathered via some sort of interview?

1. 50
2. 60
3. 75
4. 90

8-8. Upon arriving at your chosen SME interview location, which of the following actions should be completed first?

1. Thank the SME for doing interview
2. Ask permission to use recorder
3. Begin asking icebreaker question
4. Confirm spelling of the SME's name

8-9. If during the middle of an interview, your SME goes off subject and begins speaking of another newsworthy issue, which of the following courses of action should you take?

1. Interrupt SME and immediately ask another question on topic
2. Redirect the interview to the new topic
3. Steer SME back to the original topic and ask if you can return to cover other topic at different time
4. Do nothing; let the SME keep talking

8-10. While conducting a personality interview, which of the following techniques should you apply in order to capture the subject's personality?

1. Shoot photographs during the interview
2. Observe the subject's surroundings, appearance and mannerisms
3. Bring along a second MC to assist in the interview
4. Interview only the subject to ensure you capture his or her perspective only

8-11 Which of the following interview types is the best method of gathering information?

1. Telephone
2. Face-to-face
3. News conference
4. Man-on-the-street

8-12 What former U.S. President is credited with making live news conferences the potent force of information dissemination it is today?

1. Franklin D. Roosevelt
2. Dwight D. Eisenhower
3. John F. Kennedy
4. Ronald Reagan

8-13. During a news conference, how many questions do reporters usually have the opportunity to ask ?

1. None
2. 1
3. 2
4. 3

8-14 Which of the following answers serve as the best reason for conducting man-on-the-street interviews?

1. Lessens workload for MCs
2. Gives audience a voice
3. Other methods make Sailors uncomfortable
4. Increases control of subject matter

8-15. When gathering information for sports story, which of the following sources is NOT a good source of data?

1. AP Stylebook sports section
2. Officials
3. Coaches
4. Scorebooks

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MASS COMMUNICATION SPECIALIST (MC)

Module 2



VISUAL INFORMATION BASIC TRAINING MANUAL

NAVEDTRA 15011
0504LP1107087

February 2011

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Although the words "he," "him," and "his" are used sparingly in this course to enhance communication, they are not intended to be gender driven or to affront or discriminate against anyone.

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Sailor's Creed

"I am a United States Sailor.

*I will support and defend the
Constitution of the United States of
America and I will obey the orders of
those appointed over me.*

*I represent the fighting spirit of the
Navy and those who have gone before
me to defend freedom and democracy
around the world.*

*I proudly serve my country's Navy
combat team with honor, courage and
commitment.*

*I am committed to excellence and the
fair treatment of all."*

THE UNITED STATES NAVY

GUARDIAN OF OUR COUNTRY

The United States Navy is responsible for maintaining control of the sea and is a ready force on watch at home and overseas, capable of strong action to preserve the peace or of instant offensive action to win in war.

It is upon the maintenance of this control that our country's glorious future depends; the United States Navy exists to make it so.

WE SERVE WITH HONOR, COURAGE, AND COMMITMENT

Tradition, valor, and victory are the Navy's heritage from the past. To these may be added dedication, discipline, and vigilance as the watchwords of the present and the future.

At home or on distant stations, we serve with pride, confident in the respect of our country, our shipmates, and our families.

Our responsibilities sober us; our adversities strengthen us. Service to God and Country is our special privilege. We serve with honor.

THE FUTURE OF THE NAVY

The Navy will always employ new weapons, new techniques, and greater power to protect and defend the United States on the sea, under the sea, and in the air.

Now and in the future, control of the sea gives the United States her greatest advantage for the maintenance of peace and for victory in war.

Mobility, surprise, dispersal, and offensive power are the keynotes of the new Navy. The roots of the Navy lie in a strong belief in the future, in continued dedication to our tasks, and in reflection on our heritage from the past.

Never have our opportunities and our responsibilities been greater.

Center for Service Support

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PREFACE

About this course:

This is a self-study course. By studying this course, you can improve your professional/military knowledge, as well as prepare for the Navy-wide advancement-in-rate examination. It contains subject matter about day-to-day occupational knowledge and skill requirements and includes text, tables, and illustrations to help you understand the information. An additional important feature of this course is its reference to useful information in other publications. The well-prepared Sailor will take the time to look up the additional information.

By enrolling in this self-study course, you have demonstrated a desire to improve yourself and the Navy. Remember, however, this self-study course is only one part of the Navy training program. Practical experience, schools, selected reading, and your desire to succeed are also necessary to successfully round out a fully meaningful training program.

COURSE OVERVIEW: In completing this non-resident training course, you will demonstrate knowledge of the subject matter by correctly answering questions on the following subjects: The military postal service, designations and terminations, mail packaging and acceptance, domestic mail, international mail, registered mail, finance, handling and transportation, claims and inquiries, directory service, equipment and supplies, official mail, audits, reports and inspections.

THE COURSE: This self-study course is organized into subject matter areas, each containing learning objectives to help you determine what you should learn along with text and illustrations to help you understand the information. The subject matter reflects day-to-day requirements and experiences of personnel in the rating or skill area. Also, it reflects guidance provided by Enlisted Community Managers (ECMs) and other senior personnel, technical references, instruction, etc., and either the occupational or Naval standards, which are listed in *Manual of Navy Enlisted Manpower and Personnel Classifications and Occupations Standards*, NAVPERS 18068.

THE ASSIGNMENTS: The assignments that appear in this course are designed to help you understand the material in the text.

COURSE OBJECTIVE

The objective of this course is to provide Mass Communication Specialist (MC) with Visual Information (VI).

INSTRUCTIONS FOR TAKING THE COURSE ASSIGNMENTS

The links and material that you are to study are included in each chapter. Study the material and links carefully before attempting to answer the questions. Pay close attention to tables and illustrations, and read the information in the links.

SELECTING YOUR ANSWERS

Read each question carefully, and then select the BEST answer. You may refer freely to the text. The answers must be the result of your own work and decisions. You are prohibited from referring to or copying the answers of others and from giving answers to anyone else taking the course.

SUBMITTING YOUR ASSIGNMENTS

To have your assignments graded, you must be enrolled in the course with the Non-Resident Training Course Administration Branch. Following enrollment, there are two ways of having your assignments graded:

- Use the Internet to submit your assignments as you complete them.
- Send all the assignments at one time by mail to CPPD, NRTC.

Grading on the Internet: Advantages to Internet grading are as follows:

- You may submit your answers as soon as you complete an assignment.
- You get your results faster.
- In addition to receiving grade results for each assignment, you will receive course completion confirmation once you have completed all the assignments.

To submit your assignment answers via the Internet, go to the following site:

<https://www.courses.netc.navy.mil>

Grading by Mail: When you submit answer sheets by mail, send all of your assignments at one time. Do NOT submit individual answer sheets for grading. Mail all of your assignments in an envelope, which you either provide yourself or obtain from your nearest Educational Services Officer (ESO). Submit answer sheets to the following:

*Commanding Officer
Center for Personal and Professional Development
ATTN: VOLED Det. (NRTC)
6490 Saufley Field Road
Pensacola, FL 32509*

Answer Sheets: Each course includes an answer sheet for your assignments. If you are going to mail in your answer sheets, please make copies of the included answer sheet. Explanations for completing the answer sheets are on the answer sheet.

Follow the instructions for marking your answer on the answer sheet. Be sure that blocks 1, 2, and 3 are filled in correctly. This information is necessary for your course to be properly processed and for you to receive credit for your work.

COMPLETION TIME

Courses must be completed within 12 months from the date of enrollment. This includes time required to resubmit failed assignments.

PASS/FAIL ASSIGNMENT PROCEDURES

You will be given the opportunity to resubmit failed assignments. You may resubmit failed assignments only once. Internet students will receive notification when they have failed an assignment; they may then resubmit failed assignments on the Web site. Internet students may view and print results for failed assignments from the Web site. Students who submit by mail will receive a failing result letter and a new answer sheet for resubmission of each failed assignment.

COMPLETION CONFIRMATION

After successfully completing this course, you can download a copy of your letter of completion on the NRTC Web site:

<https://www.courses.netc.navy.mil>

STUDENT FEEDBACK QUESTIONS

We value your suggestions, questions, and criticisms on our courses. If you would like to communicate with us regarding this course, we encourage you, if possible, to use e-mail. If you write or fax, please use a copy of the Student Comment form that follows this page.

For subject matter questions:

Contact the Center for Service Support, Newport, RI

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Students' Comments

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CHAPTER 1

INTRODUCTION TO VISUAL INFORMATION

Learning Objectives: Upon completing this chapter, you should be able to do the following:

- Define visual information.
 - Identify policies outlined in and DoDINST 5040.02 and OPNAVINST 3104.1
 - Explain the missions of Navy Visual News Service, combat camera, and the Defense Imagery Management Operations Center.
 - Discuss the ethics associated with visual information.
-

WHAT IS VISUAL INFORMATION

Welcome to the visual information section of the Basic MC rate training manual. In this module, we will build upon the information discussed in module one, public affairs. As an MC, you will be expected to be well rounded in your public affairs and visual information knowledge, skill and technique.

Visual Information (VI), as described by [Department of Defense Instruction 5040.02 \(Visual Information\)](#), is “information in the form of visual or pictorial representation of person(s), place(s), or thing(s), either with or without sound.” Generally, VI includes still imagery, motion picture imagery, video or audio recording, graphic arts, visual aids, models, displays, visual presentation services and the support processes.

VI is an essential communication tool. Imagery is a powerful weapon in the Navy’s communication strategy and can help counter propaganda and misinformation that have significant effects in the operational environment. The capability to provide information and visual media content that contributes to accurate perceptions and favorable attitudes is critical to achieving national and military objectives.

Navy VI is also a professional visual communication capability closely associated with public affairs. VI products help tell the story of America’s Navy to all of our audiences. The instruction regulating Department of Defense (DoD) VI production procedures is [DoDINST 5040.07](#).

PRIMARY ACTIVITIES and FUNCTIONS

Navy VI translates into the following primary activity missions and functions:

- VI documentation (VIDOC), which includes combat camera documentation, operational documentation (OPDOC), technical documentation (TECDOC) and subfunctions using graphic arts, motion media, still photographic, audio and other VI systems
- VI production in support of Navy operations, training and other functions
- Support of DoD VI records centers
- Ship/shore VI activities which include: motion media production, still photographic production, graphic arts production, and other VI services needed at ship/base level.

VI ORGANIZATION

CHINFO – All aspects of Navy VI fall under the auspices of CHINFO. CHINFO as the CNO's special assistant for public affairs support is responsible for the implementation and administration of the Navy's VI Program. High-quality, timely, truthful and accurate visual communication products aid operational planning and decision making, and can achieve operational effects through its use with external audiences such as the adversary and the local populace. CHINFO also issues policies, doctrine, guidance, direction, planning, assessment, and procedures to implement the VI program:

[OPNAVINST 3104.1](#) (series) (Navy Visual Information Program Policy and Responsibilities) outlines policy for the use, management and assignment of responsibilities for VI within the Navy.

Combat camera, or COMCAM, is the operational and directed imagery component of VI and is covered in detail in the independent guidance, [OPNAVINST 3104.3](#) (series) speaks specifically of Navy COMCAM Program Policy Responsibilities and Procedures.

It is Navy policy to maintain VI and combat camera (COMCAM) resources to provide:

- Rapid deployable of COMCAM assets for the planning and execution of operational imagery documentation of force deployments and activities before, during and after military engagements, operations and emergency actions
- General purpose VI support that satisfies DON and DoD requirements for audiovisual documentation, production, distribution, records centers and installation-level support other than COMCAM
- Dedicated VI support of such activities as medical and intelligence functions and for research, development, test and evaluation (RDT&E)
- Life cycle management of VI, COMCAM and other audiovisual records.

The assistant chief of information for VI (CHINFO OI-7) reports to CHINFO on all VI matters.

Navy Visual News Service (NVNS) is a component under OI-7. Its mission is to provide imagery to national and international media outlets, DoD agencies and other federal agencies as required tell the U.S. Navy story. NVNS is the Navy's primary point of contact for requests by major media outlets for U.S. Navy visual information products both still and video.

As an organization, Navy Visual News Service provides this material directly upon request, while proactively pushing content to our external media customers as important stories and issues develop. For more information on NVNS, check out their [website](#).

Navy VI works in conjunction with Defense Visual Information, who operates the *Defense Imagery Management Operations Center* (DIMOC). DIMOC supports worldwide DoD and other U.S. government agency communication and operational missions with the right imagery in the right place at the right time by providing an enabling architecture to synchronize and integrate the various DoD imagery capabilities and centrally manage current and historical visual information. The DIMOC is an evolving, transformational agency that will move into full capability by February 2011.

To accomplish its mission, the DIMOC manages four distinct, but interrelated programs. They are the Visual Information Operations and Coordination Program, Imagery Management and Distribution, Order Fulfillment, Customer Service Programs. These functions are currently active but will have increased capabilities as the DIMOC moves toward full operating capability.

More information about DIMOC can be found at their [website](#).

Note: Registration is required for this site.

ETHICS OF VISUAL INFORMATION

The VI mission of disseminating "high-quality, timely, truthful and accurate" products looks similar to the ABCs of journalism. As with public affairs, MCs are held to a high standard and must adhere to ethics when creating VI products.

The main issues surrounding ethics in VI are still image and video post-production enhancement and alteration. [DODINST 5040.05 \(Alteration of Official DoD Imagery\)](#) is the governing regulation for VI ethics. As written in the instruction, DoD "imagery is used to make decisions and inform the public. Mission success depends on official DoD imagery being complete, timely and accurate. Anything that casts doubt on DoD imagery will not be tolerated.

Note: DODINST 5040.05, dated June, 6, 2006, officially canceled DoD Directive 5040.5.

Image Enhancement/Alteration

Electronic image manipulation is a powerful tool made available with desktop computers and image-editing software programs. These systems provide a means to effectively and ethically edit and enhance captured media. The photographer either shoots with an electronic camera or digitizes analog imagery into digital media to enter the image into the system. The image is converted into a set of picture elements (pixels) and assigned values for a position, brightness and color. These pixels are entered into the computer, which can rearrange them, change their values, duplicate them or eliminate them.

This operation can alter the image in just about any way imaginable — retouching, adding or deleting visual elements; changing positions of objects; modifying colors; and creating montages of entirely imaginary scenes. When complete, the manipulated image can be delivered as a hard-copy print.

The adoption of electronic imaging raises important ethical questions. With the ability to create images comes the ability to manipulate images easily, completely and transparently. Electronic information, unlike traditional photography, can be radically modified with no loss of resolution or evidence the information has been altered.

According to DoDINST 5040.05, alteration of official imagery is prohibited except as follows:

- Photographic techniques common to traditional darkrooms and digital imaging stations (dodging, burning, color balancing, spotting and contrast adjustment) used to achieve the accurate recording of an event or object are not considered alterations
- Photographic and video enhancement, exploitation and simulation techniques used in support of unique cartography, topography, engineering, geodesy, intelligence, criminal investigation, medical research, development, test and evaluation, scientific and training requirements are authorized if they do not misrepresent the subject of the original image
- The obvious masking of portions of a photographic image in support of specific security, criminal investigation, privacy or legal requirements is authorized by DoD instruction 5040.05

- Use of cropping, editing or enlargement to selectively isolate, link or display a portion of a photographic or video image is not considered alteration. Cropping, editing or image enlargement that has the effect of misrepresenting the facts or circumstances of the event or object as originally recorded is prohibited
- Digital conversion and compression of official DoD imagery is authorized
- Photographic and video post-production enhancement, including animation, digital simulation, graphics and special effects, used for dramatic or narrative effect in education, recruiting, safety and training illustrations, publications or productions is authorized under either of the conditions below:

— The enhancement does not misrepresent the subject of the original image.

— It is clearly and readily apparent from the context or from the content of the image or accompanying text that the enhanced image is not intended to be an accurate representation of any actual event.

Examples of the above-mentioned techniques as they relate to the ethics of VI can be found on the [NVNS training Web page](#).

Maintaining your credibility as well as the credibility of the DoD and the Navy is the bottom line. If we are perceived as trying to deceive the public, whatever we have done electronically to the image will be wrong. If we are perceived as attempting to bring the most accurate representation of reality as we can create, we will have acted ethically in behalf of our profession.

Summary

In this chapter, we introduced you to the visual information side of being an MC. Through the information received here, you now should be able to define VI and should be familiar with the instructions and policies that regulate MCs in their everyday duties in VI. Now, it's time to move on to the fundamentals of visual information. In this manual, we will discuss photography, videography, multimedia and print production. However, in the following chapter, we are going to discuss the theories of light and color.

CHAPTER 2

LIGHTING AND COLOR

Learning Objectives: Upon completing this chapter, you should be able to do the following:

- Explain the theory of light.
 - Describe the different types of photographic and video lighting.
 - Explain the differences between CMYK and RGB, as they pertain to the color theory.
-

Before you can master the VI side of being an MC, it is important to understand light and color and how each plays a part in the art of visual communication. Light is the magic ingredient that makes visual information possible. In performing your duties as an MC, you must be aware of how light is reflected, absorbed and refracted.

Color is all around us. Color is a sensation that adds excitement and emotion to our lives. Everything – from the clothes we wear, to the images and graphics we create – revolves around color. Without color, the world would be a duller place. In order to understand color, however, we need to understand light. Without light, there is no color. Without light, there can be no vision or visual information.

THEORY OF LIGHT

Light is reflected from the world around us, making things visible to both our eyes and the eye of a camera. The nature of light has a critical effect on the images you create. Few photographers and videographers actually understand much about light, but they are not alone. Scientists have never been able to agree fully about the nature of light. However, certain useful things are clear.

Science does tell us light is produced in waves. In many respects, the waves of light can be compared to sound waves. Sound waves vary in length and register as different pitches, while light waves register as different colors. Light is made up of energy waves, which are grouped together in what is called a spectrum. Light that appears white to us, such as light from the sun, is actually composed of many colors. The wavelengths of light are not colored but produce the sensation of color.

To the photographer, there are two important characteristics in the way light travels. In a given medium, light travels at a constant speed (constant) and ALWAYS in a straight line.

Visible light – The wavelengths our eyes detect are only a small portion of the electromagnetic energy spectrum. We call this the visible light spectrum (See Figure 2-1). At one end of the visible spectrum are the short wavelengths of light we perceive as blue. At the other end of the visible spectrum are the longer wavelengths of light we perceive as red. All the other colors we can see in nature are found somewhere along the spectrum between blue and red. Beyond the limits at each end of the visible spectrum are the short wavelengths of ultraviolet light and X-rays and the long wavelengths of infrared radiation and radio waves not visible to the human eye.

Incident Light – Light that falls upon a subject from another source.

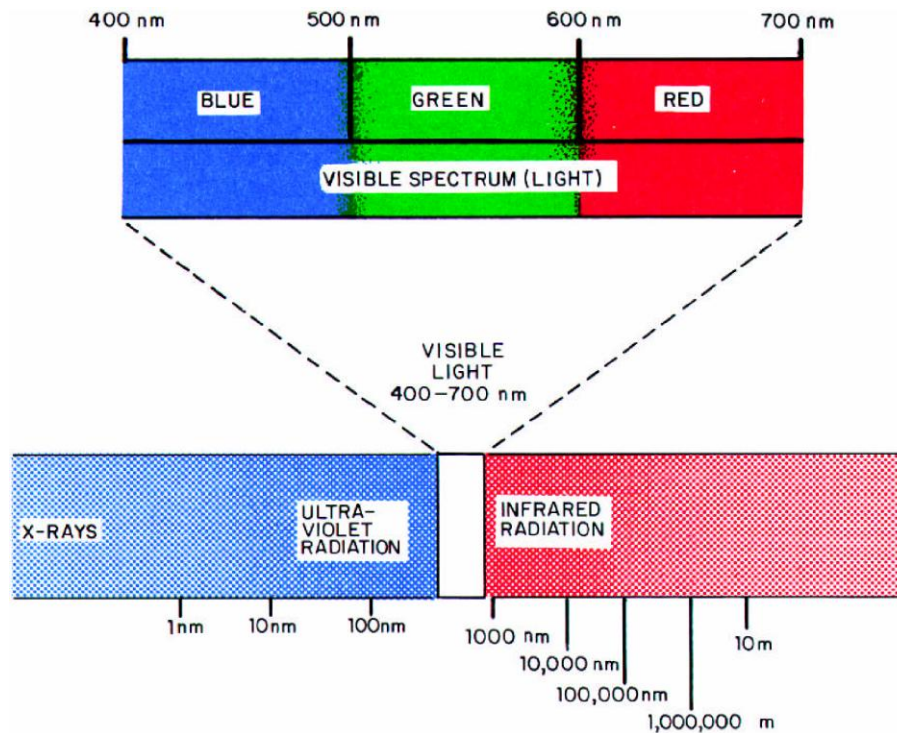


Figure 2-1, The electromagnetic energy spectrum.

EFFECTS of DIFFERENT MEDIUMS

Once light is produced, or emitted, it is no longer dependent on its source. Only its speed is affected by the many mediums (conflict) through which it can travel. When light travels from air into a denser, but transparent medium, such as a glass, it slows down. But when it leaves the glass, it returns to its original speed.

Transmission – Light is “transmitted” when it passes through a medium. Transparent mediums transmit all light striking them; you see objects behind them quite clearly. Translucent mediums, such as frosted glass, transmit only a portion of the light; an object behind them is not seen clearly.

Reflection – Light is “reflected” when it strikes an object and bounces back. There are two types of reflection – specular and diffused. Specular reflection occurs when light strikes a smooth, polished surface and reflects back at the same angle that it struck the surface. Light that strikes a rough surface is reflected back in many directions. This is diffused reflection. Diffused reflections form the middle tone areas in a photograph; specular reflections form the highlighted areas. Three factors affect reflected light:

- Intensity
- Direction
- Color

Absorption – Absorbed light is neither transmitted, nor reflected. An object that absorbs the light falling upon it is “opaque.” Absorption (the absence of light) forms the shadow areas in a photograph. Most objects are opaque. Both opaque and translucent objects have color because they

reflect certain wavelengths of light. Black objects appear black because they absorb nearly all of the wavelengths of the visible spectrum (see figure 2-2).

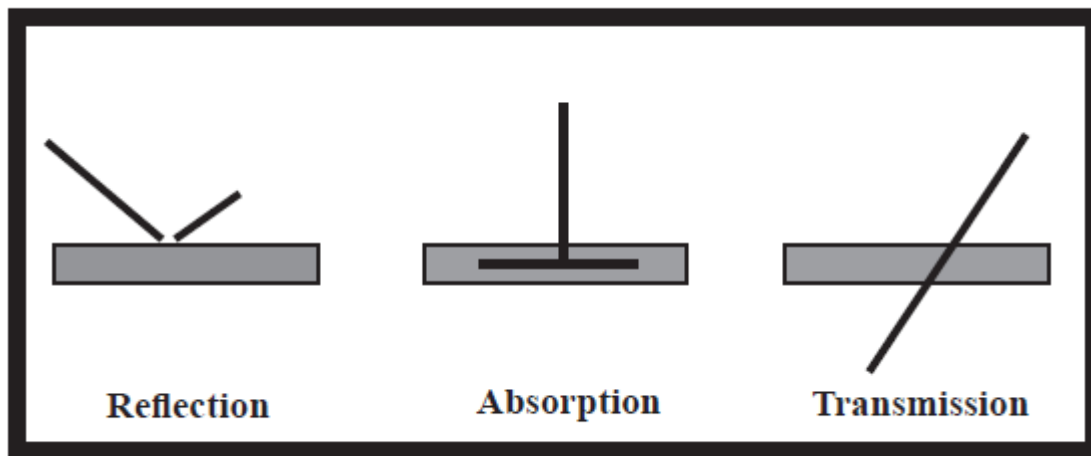


Figure 2-2, Effects of Different Mediums.

When speaking of light, black is the absence of ALL light, and white is the presence of all three colors of light (red, green and blue) in equal amounts. White items, such as snow, appear white because they reflect nearly all of the visible spectrum. No object completely absorbs or transmits all light. There is a certain amount of absorption or reflection in every object. If this were not true, we could not see the object. For example, the windows in a car appear to be transparent even though they are slightly tinted. The tint absorbs some of the energy (light) to make the interior of the car cooler. Also, since the surface of the window is highly polished, some of the light is reflected. Transmission, absorption and reflection properties of objects allow us to see objects as well as photograph them.

Bending of Light

Dispersion – Dispersion is the separation of white light into its individual colors, due to the bending of each wavelength to a different degree of angle. A prism can be used to separate white light in this manner. In nature, water droplets that produce a rainbow also cause dispersion of light. A camera lens also disperses light if not corrected. Dispersion is usually undesirable for most photographic purposes. Through the years, lens manufacturers have practically eliminated the occurrence of dispersion. As a result, you do not have to be overly concerned with dispersion.

Refraction – Refraction is the change of direction of light rays (bend) as they enter a medium of a different density. Refraction occurs when light leaves a medium, such as air, and enters a medium such as water, glass or even a vacuum. You probably have witnessed refraction of light in water. A canoe paddle that halfway in the water appears bent at the union between the water and the air. A lens bends light rays in a controlled manner allowing you to capture the scene in front of the camera, recreating it behind the lens and recording the image.

Diffraction – Light is slightly bent and scattered when light passes over the edge of an opaque object. This change of direction of light rays is called diffraction. When an opaque object is placed so that it partially blocks the path of the rays from a point source of light, you can see diffraction as a

fuzzy-edged shadow. An example of this can be seen during a solar eclipse. The outside edge of the shadow is light and indistinct; it gradually fades into the deep black of the shadow. Thus, you can see that some of the light is scattered into the shadow area. In photography, diffraction takes place as light passes over the opaque edge of a camera's diaphragm in the lens-and-shutter system. Camera operations and equipment will be discussed in a later chapter.

POLARIZATION

Energy in the form of wave motion radiates from its source and travels through a medium. For example, when a section of line is secured at one end and the free end is held in your hand and given a shake, a wave travels down the length of the line from the end that was shaken to the secured end just like an oscillator. A light source acts as an oscillator; the wave motion, the line. It does not, however, represent the true wave motion of light, because light waves move at right angles, in all possible directions.

A much clearer picture of light wave motion is demonstrated by having a number of parallel lines with each one being shaken in a different direction – one up, one down, one sideways, others at various angles in between. Ordinarily, light waves vibrate in all directions at right angles to their direction of travel. However, when light waves strike a series of parallel microscopic slots, all the light that passes through vibrates in one direction. This is polarized light. In photography, polarized filters polarize light.

Specular reflected light, from a nonmetallic surface at any angle between 32 and 37 degrees, is polarized in such a manner that the light rays vibrate in a direction parallel to the reflecting surface. Light reflected in this manner is said to be plane polarized and is seen as glare. Reflections from metallic surfaces do not create polarization. However, if you are using the panning technique while you are shooting, you will see the variable darkening of an image.

PHOTOGRAPHIC LIGHTING

By now, you surely realize that light is the most important ingredient in photography. Light makes photography possible by reflecting off the subject, entering the camera and exposing the film or charged coupled device (CCD).

The intensity of light determines the brightness of the subject in relationship to the inverse-square law, see figure 2-3. It demonstrates that light decreases as the square of the distance increases. Becoming familiar with this law will help you use light more effectively during photographic assignments.

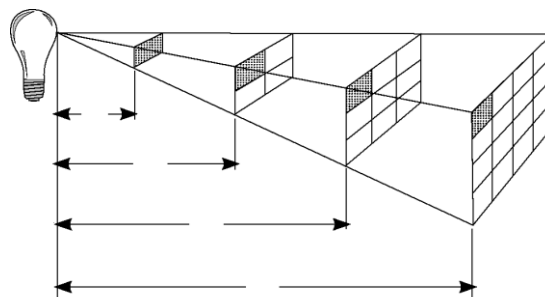


Figure 2-3, Inverse-square law.

OUTDOOR LIGHTING

Daylight and sunlight are not constant sources; they change hourly with the weather, seasons and latitude. The changes in daylight can radically alter the apparent shapes, colors, tones and forms of a scene. The color of sunlight changes most rapidly at the extreme end of the day. Strong color changes also occur during storms, haze or mist and on blue wintery days. The direction of the light changes as the sun moves across the sky. The shape and direction of shadows are altered, and the different directions of sunlight greatly affect the appearance of each scene.

The quality of sunlight depends on its strength and direction. Strong, direct sunlight is "hard," and it produces dark, well-defined shadows and brilliant highlights. Sunlight is hardest on clear summer days at noon. Strong sunlight makes strong colors more brilliant, but weak colors pale. Sunlight is diffused by haze, mist and pollution in the air. This diffused or reflected light is softer, and it produces weak, soft shadows and dull highlights. Directionless, diffused sunlight is often called flat lighting. It produces fine detail but subdues or flattens form. In weak, directionless sunlight, colors are muted, but strong, directionless, flat sunlight provides vibrant, well-saturated colors.

Take a look at the two pictures below, paying close attention to the differences in how the bricks look. The differences are created by using different lighting techniques.

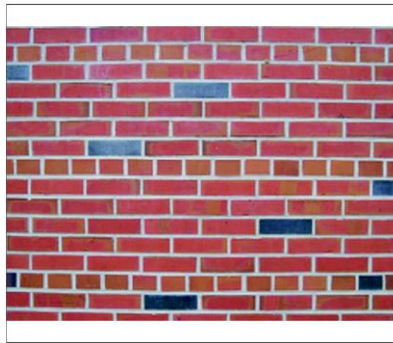


Figure 2-4, Frontlighting.

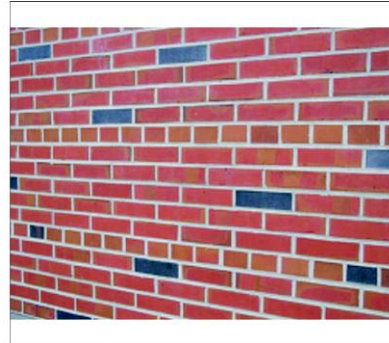


Figure 2-5, Sidelighting.

Photos by JOCS (AW) Jon Gagné (retired)

Frontlighting

The old adage about keeping the sun at your back is a good place to continue our discussion of outdoor lighting. The type of lighting created when the sun is behind the photographer is called *frontlighting* (see figure 2-4). This over-the-shoulder lighting is typically the first photographic advice amateur photographs receive. However, it may not be the best type of lighting. Over-the-shoulder lighting produces a flattened effect, doing nothing to bring out the detail or to provide an impression of depth. The eyes see in three dimensions and will compensate for unhelpful lighting. However, a photograph is two-dimensional. To give an impression of form, depth and texture to the subject light your object from the side or at an angle.

Sidelighting

As you gain experience with various types of outdoor lighting, you can achieve different effects by changing the angle of the light falling on your subject. As you turn your subject, change camera viewpoint or wait for the sun to move. Look at the brick wall photo once again. The sidelighting creates shadows in every crevice (see figure 2-5). The effect increases as the light is more parallel with the wall until long shadows fall from the smallest irregularity in the brickwork. This can give an almost three-dimensional effect to a photograph.

Sidelighting is particularly important with black-and-white photography, which relies on gray tones, rather than color, to record the subject. Shadows caused by sidelighting reveal details that can create striking pictures from ordinary objects that otherwise would not be worth photographing in black and white. Anything that has a noticeable texture — like the ripples of sand on a beach — gains impact when lighted from the side. Landscapes, buildings and people look better when lighted from the side.

In color photography, color gives the viewer extra information about the subject, making up for a lack of texture in frontlighting, but often the result is much better when lighted from the side.



U.S. Navy photo by MC3 Spencer W. Mickler

Figure 2-6, Backlighting.

Backlighting

When the sun is in front of the photographer, coming directly at the camera, you have what is referred to as *backlighting* (see figure 2-6) — that is, the subject is backlit. This type of lighting is effective for images of people outdoors in bright sunlight. In bright sunlight, subjects that frontlighted or even sidelighted may be uncomfortable and squint. Backlighting helps eliminate this problem. Backlighting may require the use of a reflector or fill-in flash to brighten the dark shadows and improve subject detail. Backlighting also is used to produce a silhouette effect. When you use backlighting, avoid allowing sunrays to fall directly on the lens (except for artistic special effects). Use a lens hood or some other means of shading the lens to prevent lens flare.

EXISTING LIGHT

Existing light, sometimes called available or natural light, is light that is already on the scene. This includes light from table, floor and ceiling lights; neon signs; windows and skylights; candles and fireplaces; automobile headlights and any other type of light that provides the natural lighting of a scene — except daylight outdoors. Moonlight is considered existing light. Existing light is found in homes, offices, hangar bays, chapels, clubs, sports arenas and so on. Outdoor scenes at twilight or after dark are also existing light situations.

Photography by existing light produces pictures that look natural (see figure 2-7). Even the most skillfully lighted flash image may look artificial when compared to a good existing light photograph. With existing light photography, the photographer has an opportunity to make dramatic, creative pictures. Existing light allows the photographer greater freedom of movement because he is not burdened with extra lighting equipment. Subject distance, when not using flash, has no effect on exposure, so you can easily photograph distant subjects that could not otherwise be photographed using flash or some other means of auxiliary lighting. With existing light you can make pictures that you could not make with other types of lighting.

For example, flash may not be appropriate during a change-of-command ceremony or chapel service. Not only might the flash disturb the proceedings, but it also may not carry far enough to adequately light the subject.



U.S. Navy photo by MC3 Marie Brindo-Vas

Figure 2-7, Existing Light.

Fluorescent Lighting

Indoor scenes illuminated by fluorescent lights usually appear pleasing and natural in real life. However, color pictures of these same scenes will often have an overall colorcast that makes them look unnatural. Fluorescent light is deficient in red light and emits primarily blue and green light. Most color photographs made without a filter under fluorescent light are deficient in red and have an overall greenish appearance. When used correctly, fluorescent light does have some advantages over other types of available light. A room illuminated by fluorescent lamps is usually brighter and more evenly lighted than a room illuminated by tungsten lamps. This higher level of light makes it easier to get enough exposure for your existing light photography and helps record detail that might have been lost in the shadow areas with other types of existing light.

When you are photographing people, fluorescent lighting often causes dark shadows under the eyes of the subject. This effect causes the eyes to appear dark, sunken in and unflattering.

ELECTRONIC FLASH LIGHTING

INTRODUCTION to FLASH PHOTOGRAPHY

A photo is created when light emits from an external source and reflects off different objects. But, sometimes, you may find yourself in a situation where you don't have enough light, such as in a dark place or at night. In this situation, you could set your camera for a longer exposure, but that is not always practical. Instead, you may opt to use a flash unit. A flash provides the necessary light for the scene you wish to capture.

Photography as we know it dates back to the 19th century. From the start, early photographers began looking for solutions to their lighting issues as discussed above. The first flashes they created were made of magnesium powders and other materials that when ignited created a short burst of light. Naturally, blowing up noisy smoky compounds for a photo was quite unpleasant. In using this "flash" mechanism, the photographer opened the lid of the lens (shutter), held the magnesium ribbon in his hand, lit it and immediately covered the lens and walked away before the people in the photo began to complain about the smoke. Today, flashes work much more efficiently and comfortably than 150 years ago.

Flash Operation

- Batteries – Flash units require an energy source, most often 1.5-volt batteries better known as "AA batteries"
- Capacitor – Most flash units have two capacitors, a main and a secondary, to store large amounts of electricity from the batteries. The power from the batteries is augmented from 1.5 volts to about 300 volts in the capacitors. While the capacitors charge, you can hear a high-pitched sound that anticipates the flash's fire
- Transformer – This device augments the power (from 300 volts to thousands of volts) and delivers the power to the flash's lightbulb
- Lightbulb – The lightbulb is a glass cylinder filled with xenon gas, which usually doesn't conduct electricity. In the flash process, electricity is conducted from the secondary capacitor with voltage of thousands of volts in order to ionize the xenon and turn it into a conductor for free electrons. After that, the main current is delivered from the main capacitor to the bulb and is converted to photons – meaning light. Naturally, this whole process happens in a "flash." After the flash is drained of power, the process repeats itself.

When the camera measures light, it accounts for the light being reflected off the subject. When using a flash unit, however, the camera shoots a tiny pre-flash before the actual flash to measure the light reflecting off the subject. The flash intensity for the flash is determined according to this measurement. This is known as through-the-flash metering, or TTL. For a detailed explanation, read about TTL in the manual that came with your flash unit.

Every flash also has a guide number (GN), which measures the intensity of the flash. The number is listed in meters according to ISO 100 (ISO = International Standards Organization's standardized industry scale for measuring sensitivity to light). To double the GN, you increase the energy fourfold.

When using a flash unit, the GN comes in handy when you need to determine the relevant working distance, or the distance your subject should be from the camera. The formula $GN \div \text{aperture} = \text{relevant working distance}$. For example, if your flash has a GN of 42 and your aperture setting is f/4, the relevant working distance is $42 \div 4$, or 10.5 meters. In other words, your camera should be no more than 10.5 meters from your subject.

NOTE: The aperture is the opening through which light passes through the lens. The aperture is controlled by an adjustable diaphragm or iris. Each setting of diaphragm is known as an f/stop (f-stop) and is always read as a number.

The relevant factors that affect exposure when using a flash:

- **Shutter Speed** – The shutter on a digital camera is a mechanical device that opens for a specific amount of time, allowing a set level of light to enter the camera through the lens. The speed of the shutter doesn't influence a subject's exposure when flash is used, because the flash is faster than the fastest shutter speed. This is why the shutter speed only affects the background exposure and any ambient light falling on the subject
- **Aperture** – The aperture is the main factor affecting the exposure with flash photography, because it determines the amount of light entering the lens. As a rule, use the widest aperture you can (the lowest F number) in order to use the flash most efficiently. If we close the aperture down too small, then the flash might not be strong enough, or it may become too strong in compensation and blind the subjects
- **Sensitivity** – ISO is the number indicating a digital camera sensor's sensitivity to light. The higher the sensitivity, the less light is needed to make an exposure. Shooting at a lower ISO number requires more light than shooting at a higher number
- **Working distance** – The distance between the camera and the subject is one of the most influential factors on exposure in flash photography. You need to keep your subject within the flash's range. In a case where several subjects are being lit, it's recommended to keep them as close to the same plane as possible from the flash in order to guarantee even lighting
- **Flash compensation** – Most advanced cameras have an option of positive or negative flash compensation. This function gives you more control on the scene's exposure by overexposing or underexposing the subject.

Synchronizing speed

When the flash unit coincides with the camera's shutter, light hits the camera's electronic image sensor. This is measured in synchronization (sync) speed. In single lens reflex (SLR) cameras, when using high sync speeds, the shutter exposes the film in several stages and not just once. This is why the synchronizing speed of the flash is limited to the maximal single exposure speed of the film/sensor. In most cameras, the synchronizing speed stands at 1/250. In some digital cameras, this problem is solved by using an electronic shutter instead of a mechanical shutter. Before using a flash, you should review its manual for information on sync speeds.

Flash photography modes

Flash units can be set to different modes, depending on how much light you want on your subject.

- Automatic flash – Automatic flash is the simplest mode for novice photographers. In this mode the camera decides when to activate the flash. It's recommend you use your judgment instead of automatic flash
- Red eye – The "red-eye" effect is the appearance of red eyes on images captured while using a flash. The light of the flash occurs too fast for the iris of the eye to close the pupil. The flash then illuminates the blood-rich retina at the back of the eye, resulting in a red appearance of the eye on the photo. The "red-eye" effect can be prevented in a number of ways
 - Moving the flash away from the camera lens (off camera flash) is the most preferable method. Using this method, the flash does not enter the eye directly. The light reflected by the retina is not be captured by the camera's lens, thus the eyes appear natural.
 - Another method is to take pictures with no flash.
 - Many modern cameras precede the flash with a period of bright light – the "anti-red-eye system" – allowing the iris to close. Professional photographers prefer the former approaches, as this system does not always prevent red eyes.
- Slow synchronization – Slow synchronization is used in night photography when you want to activate the flash and maintain a low shutter speed in order to expose the background. The regular synchronizing speed is usually at a minimum of 1/60, and longer exposures permit enough light from the background to enter the lens. When using this method, a tripod should be used
- Rear curtain – Rear curtain offers the ability to fire the flash at the end of the exposure to freeze motion. When making long exposures while firing a flash, rear curtain creates the effect of motion blur trailing the main subject
- Fill flash – Fill flash is a technique used to brighten deep shadow areas, typically outdoors on a sunny day. Fill flash is useful any time the background is significantly brighter than the subject of the photograph, particularly in backlit subjects. To use fill flash, the aperture and shutter speed are adjusted to correctly expose the background, and the flash is fired to lighten the foreground.

External Flash

Most cameras used today come equipped with a built-in flash, but you may find an external flash produces higher-quality images.

- *Power* – An internal flash is weaker compared to an external flash. This is because there is less room for the flash apparatus we learned about earlier, such as the capacitors, bulb, transformers and the batteries. A built-in flash uses battery power from the camera, while an external flash relies on its own energy source, resulting in a significantly stronger flash
- *Red eye* – An external flash solves the problem of red eye, because the distance between the external flash and the lens is great enough so the angle won't allow light to be reflected off the retina back into the lens
- *Attachment* – There are varieties of ways to attach a flash to a camera:
 - "Hot shoe" – The hot shoe is a metal groove with several contacts on its bottom to slide on the flash.

— Synchronizing cable and special flash adaptor.

- *Through the Lens (TTL)* – TTL spares us the need to manually adjust the flash before every photo. There are several variations on the method such as A-TTL, I-TTL, E-TTL etc. The differences between the methods involve light-measuring techniques. A flash working on TTL fires without a preliminary flash and measures the correct exposure, while the flash is shooting. It stops the flash when the result has been achieved
- *Zoom Flash* – Advanced flashes are equipped with zoom heads that adjust according to the lens' focal length. In a wide lens the light is dispersed in the space. In a narrow lens it is focused on a narrow area in a more efficient way to enable it to reach a longer distance
- *Fast Synchronization* – The sync speed of the camera is limited. But sometimes the need arises for faster shutter speeds, such as in strong daylight. This is why "fast synchronization" was developed. The flash emits a series of ultra rapid fires one right after the other throughout the exposure and by doing that exposes the film (or the sensor) to light in each stage of the exposure. The disadvantage of this mode is that the intensity of the flash becomes much weaker because instead of one strong flash there are a lot of short weak ones. This is also the reason why the shorter the exposure speed is in fast sync so will the flash intensity be lower (it flashes less times) until even from a distance of a meter at speeds of 1/4000 it will be difficult to achieve good exposure. In electronic shutter speeds you can use higher shutter speeds than in mechanic shutter cameras
- *Strobe* – In this mode the flash fires several short flashes for about half a second. It is a good mode if you want to see how shadows fall in the scene or if you want to achieve special effects such as motion or freezing action. In today's digital world this is a less meaningful function, because you can shoot a picture and see on the screen exactly how the shadows fall
- *Slave flash* – A slave flash is not located on the camera; it is activated as a reaction to another flash. The firing mechanism is a reaction to the light emitted from another flash or through a wire/wireless connection in more advanced flashes. The first flashes fire in a predetermined intensity while the second fires according to the light measured by the camera as the data are transferred through the wires (or air in the wireless mode)
- *Repeat* – Ultra-fast flashes are determined by the flash frequency per second and the length of the flash. For example, a frequency of 20 flashes per second for half a second will cause 10 flashes. This is used mainly for creative effects in photography, such as freeze framing.

When purchasing a flash for your camera, you should look for one from the same manufacturer as the camera since the communication between them is best. Remember, reading the manual before use is strongly encouraged.

Flash Techniques

There are two main techniques with flash photography – direct flash and bounce flash.

Direct Flash – The flash is directed straight forward toward the subject. It is characterized with harsh shadows and a little lighting from above.

Bounce Flash – To bounce your flash means to reflect it off of another surface before it flashes upon your subject. When using this technique, it is important to use surfaces light in color, preferably white, so the flash reflected will be in the color of the surface from which it was bounced. This technique is one of the better methods to illuminate a subject or scene with a single-flash unit is to

use *bounce flash*. There are times when you want a very soft light in order to lessen the tonal range between highlights and shadows and to soften harsh background shadows:

- Using a ceiling - The flash is aimed at the ceiling. An advanced flash knows that it is pointing to the ceiling and will compensate for the long way it has to go with TTL. The result if lighting from above is also called butterfly lighting, and it is soft due to the diffusing qualities of the ceiling.
- Using a wall - The flash is pointed to a bulkhead or wall. Flash measurement is done the same as bouncing off the ceiling, and the result is quality lighting from one side also known as window lighting or Rembrandt lighting.

Diffuser – A flash typically creates strong contrasts in the lighting with sharp shadows because of the small size of the light source. A good way to overcome this disadvantage is by using a diffuser. The diffuser is made of plastic and is placed on the external flash. Its job is to soften the light and create gentler shadows and soft uniform lighting. A diffuser is highly recommended in direct flash photography. Take into consideration you have to increase your flash's intensity to get the same illumination with a diffuser. In a photo studio, you can use more effective diffusing methods – umbrellas, soft boxes, etc. – to diffuse the light further and to create very soft and pleasant shadows.

OPEN FLASH – Flash photographs can be produced without the camera shutter and flash being synchronized, using a technique called open flash. In the open-flash method, the camera shutter is set at T or B, the shutter is opened, the flash unit fired, and the shutter closed. The open-flash technique is sometimes used when the level of light over a large scene is very low or at night. This method of flash photography allows the photographing of large scenes that ordinarily are quite difficult to illuminate with artificial light. The photographer can walk into a scene with the flash unit and illuminate sections of the scene or the entire scene. Any number of flashes can be used during the exposure while the shutter remains open. A silhouette of your body can be recorded if your body gets between the flash and the camera. To arrive at the exposure for an open-flash image using a manual flash, determine your flash-to-subject distance and f/stop. Keep the distance equal to the objects being illuminated when using manual flash. For example, when the f/stop for the scene is f/5.6 based on a flash-to-subject distance of 10 feet, every flash within the scene should be 10 feet from that section of the scene being illuminated. When an automatic flash is used, the flash automatically shuts off when the proper amount of light is reflected from the subject, providing the object is within its distance range. When you are using a manual flash, the exposure for open flash is determined as previously discussed. This is true unless two or more flash units with equal intensities are used at equal distances or two or more flashes from the same unit at the same distance are used to illuminate the subject.

In the paragraphs above, you learned about the importance of lighting to the photographer. The flash is a unique and advanced device that enables us to shoot in situations where the available light is working against us. We've learned how it all began, how the flash is built and how it works, what an external flash is and its advanced functions, and how to make the most out of your flash. The possibilities are endless. As always, the best way to learn is to put the theory into practice.

Before we move on to video lighting, however, it is important to take a step aside and talk about color.

COLOR THEORY

Think about a bright, red apple on a dark, green tree. Color is not an inherent property of these objects. In fact, color is not even inherent to light. What you see is a visual perception stimulated by

light. The apple and the tree are only visible because they reflect light from the sun. The apple appears red and the tree appears green, because they reflect certain wavelengths of light more than others. In this case, the human eye sees these particular wavelengths as red and green.

When we see a color, we are simply seeing light of a particular wavelength. When a beam of light has a relatively even mixture of light of all visible wavelengths, it appears as white light. When this beam of white light is passed through a prism, its different wavelengths are spread apart and form a visible spectrum. This visible spectrum is seen as a band of colors, such as violet, blue, blue-green, green, yellow, and red.

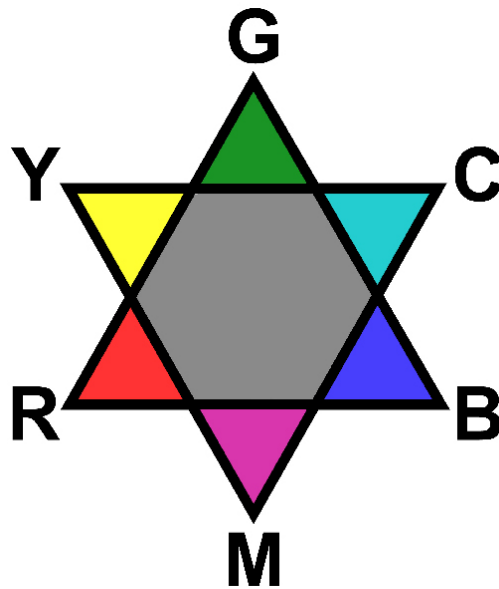


Figure 2-8, Color Star.

The color star shown here (see figure 2-8) is the foundation of color theory. The design of the star is very simple. The primary colors are R (red), G (green), and B (blue). The secondary colors are cyan (C), yellow (Y), and magenta (M). Combining the two colors on either side of the color that is to be produced can produce any color on the color star. Example: $Y + C = G$ or $G + B = C$. If a green filter and a cyan filter are placed in front of a white light the resulting light will be blue. The colors that are opposite of each other on the star are called complements (opposites). Y and B are complements, C and R are complements, and G and M are complements. When magenta is added to a print, at the same time and same amount, green is being subtracted. Complementary colors are directly related to each other.

COLOR TEMPERATURE SCALE

The color temperature of light is measured according to a scale of degrees in Kelvin ($^{\circ}\text{K}$), which indicates the proportion of red light to blue light radiated by the light source (the sun, electronic journalism lights, fluorescent lights, etc.). Daylight is a combination of all the light rays in the visible spectrum, but daylight contains a higher proportion of blue than some other sources. Tungsten halogen lights commonly used in video lighting also contain all the light rays of the visible spectrum, but with a higher proportion of red hues.

Remember ...

- Daylight ☞ Blue
- Television light ☞ Red

Color temperature is a way of measuring (in units derived from the Kelvin temperature scale) and describing the color quality of white light by comparing it to a theoretical black body heated to a specified temperature on the Kelvin scale (see figure 2-9). It's important in the design and use of computer monitors, solid-state displays and digital cameras.

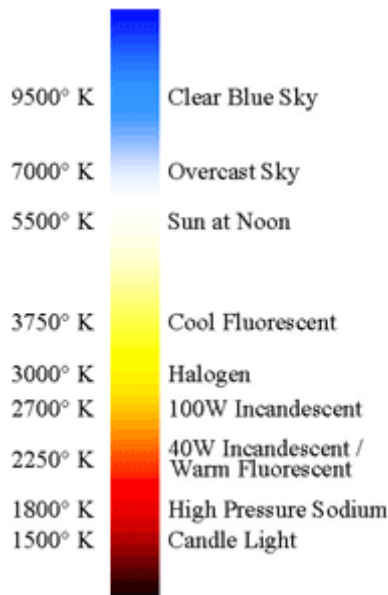


Figure 2-9, Color Temperature Scale.

As MCs, we need to understand color temperature, because we use equipment that doesn't see true colors like we do with our eyes. Knowing that outside light, inside lights and camera lights have different color temperature, you should gather that it's bad to mix these light sources. Instead, you should eliminate all but one light source when you are shooting. For example, shooting indoors near windows is challenging. The outside light creates blue light (around 5600°K), and the inside fluorescent lights are about 3200°K. To avoid having color issues with your product, you could:

- Get away from the windows (best choice)
- Match outdoor light coming in by putting blue gels on your lights, and make them match the incoming blue light
- Place an amber gel sheet over all the windows to match the 3200°K lights you're using.

Video lights normally run at about 3200°K. However, you may find that some studios lights are 5600°K, similar to lighting outdoors. The 5600°K lights often are found at indoor sports arenas, such as the Louisiana Superdome. If shooting in one of these arenas you need to use an outdoor filter on your camera for 5600°K.

Most professional grade video cameras have a filter wheel such as the found in figure 2-10. The filter wheel is used to achieve a proper white balance.



Figure 2-10, Filter wheel found on the Ikegami 201W ENG Camera.

For the camera shown in the image above, the filters are used as such:

1. Shooting indoors 3000°K (clear filter)
2. Outdoor bright sunny 5600°K (darker filter like sunglasses)
3. Outdoor cloudy/overcast 5600°K (not so dark but still like sunglasses)
4. Outdoor very bright and sunny with snow or water (rarely used).

WHITE BALANCE

The term *white balance* refers to the process of balancing color when shooting images. When white balancing, you are defining for the camera what the color white looks like in specific lighting conditions, which also affects the hue of all other colors. Usually the automatic white-balance function of a video camera operates sufficiently in the automatic position for you; however, some situations will require manual white balancing:

- When the light reflecting from the subject is different from the light that is illuminating the video camera
- When shooting a monochromatic subject or the subject is against a monochromatic background
- When recording under a sodium lamp, mercury lamp or a white fluorescent lamp
- When recording outdoors under neon lights or fireworks
- When shooting scenes just before sunrise or right after sunset.

To white balance a motion-video camera manually, you can follow a simple procedure. Normally a white lens cap, made of a diffuse plastic material, is supplied with the camera. You also can use any white object to white balance the camera, providing the white object is illuminated under

the same conditions that you will be shooting. To white balance, you simply place the white lens cap over the lens, point the camera at the light source, and press the white balance button. Remember, when in the manual white-balance mode, if the color temperature of the light changes, you must reset the white balance.

To create special effects, you may want to "lie" to the white balance sensor; for example, you may want to produce motion video that has a warm color balance, such as that which occurs at sunrise or sunset. To produce video coverage with warm characteristics, you can "white balance" the video camera on a blue object or any of the complementary colors. When you record the scene, an overall yellow cast is produced. You can also use filters to create various effects.

VIDEO LIGHTING

Now that we have discussed light and color, it's time to move on to video lighting. Knowledge of light and color is essential to every MC. When shooting video, we use lighting for visibility and quality. The images you shoot for photography and video must add to the communicative qualities of the story or spot. The light from a scene being captured with a video camera are changed to electrical impulses when exposed to a camera's CCD. Even though most modern cameras are capable of shooting in extremely low lighting conditions, you still may not produce a quality image. If the images are dark and grainy for no apparent reason, you distract from the message and lose your audience.

We cannot always create light where and when we want it, but we have tools that allow us to create lighting that does more than just provide enough light for the camera to pick up an image. Lighting schemes also enhance the communicative qualities of video. Lighting is an art form. The three main goals of video lighting are:

- Fulfill the technical requirements of the camera
- Add a three-dimensional look
- Draw attention to an object

THREE-POINT LIGHTING

The three-point lighting technique (see figure 2-11) is a proven method within the broadcast industry and is used with film, still photography and multimedia products. This method is also good for conducting on-camera interviews with one subject-matter expert (SME).

With this technique you use three lights – a key light, a fill light and a back light.

- *Key Light (Modeling light)* – The key light is the main light and is usually the strongest (about 500 watts). This rectangle-shaped light has the most influence on the look of your scene and is used to light your subject's face. The key light is placed to one side of the camera/subject, so that the side is well lit and the other side has some shadow. It's also used to control the direction of the shadows
- *Fill Light* – The fill light "fills" in shadows and provides detail to your subject's face. The fill light will not fill in all shadows, however, so you will need a slight shadow from the key light
- *Backlight* – Opposite the key light, the backlight illuminates the subject's back to separate him or her from the background, creating a three-dimensional look.

Important facts to know about three-point lighting:

- Opt for a key-to-fill-light ratio of 2:1. In other words, the key light needs to be two times more intense than the fill light. For example, your key light could be 500 watts and your fill light 250 watts
- Key light placement:
 - 35-50 degrees to the left or right of the camera
 - 35-50 degrees above the subject
- Fill Light placement – 35 to 50 degrees to the side of the camera opposite the key light side again, above the subject 35-50 degrees. Remember, you will have a shadow from the key light. A shadow is fine but make sure you lessen it with the fill light
- Back Light – 35 to 50 degrees behind and to the side of the subject. You want it the same height as your key and fill (35-50 degrees above). The back light is best used opposite the key light (see figure 2-11)

Although three-point lighting is typically the standard, there are instances when you will need to adapt your lighting technique.

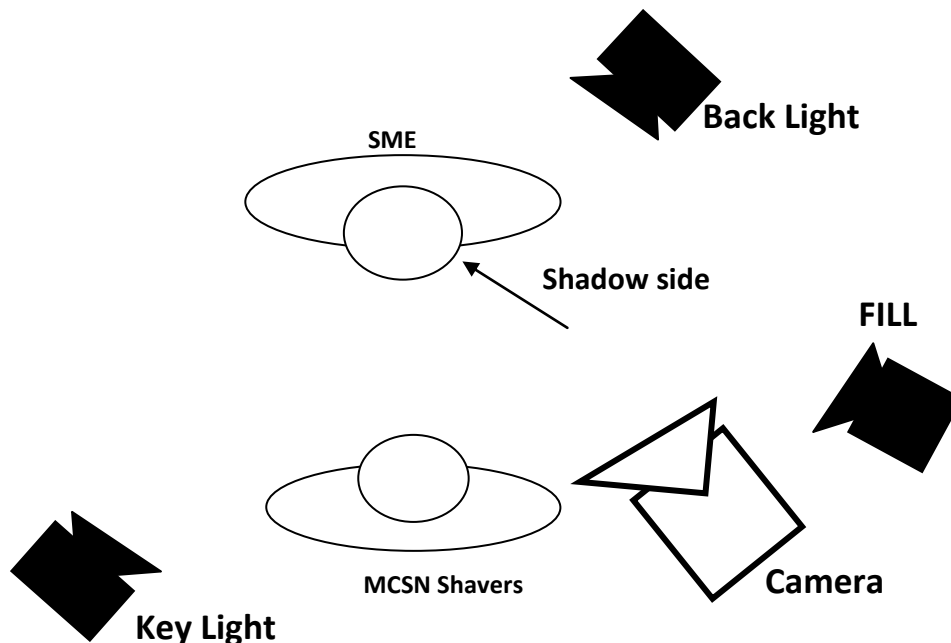


Figure 2-11, Three-point lighting.

BACKGROUND LIGHT

The third light in studio portrait lighting is the background light. A background light is usually placed on a low stand midway between the background and the subject. When adjusted correctly, the background light provides good tonal separation between subject and background. The intensity of the light falling on the background should not normally be greater than the intensity of the light from the main light falling on the subject's face. By increasing or decreasing the intensity of the light on the background, you can control the tone or color reproduction of the background in the finished print.

SUN GUN

A sun gun is the name for a light mounted on top of a camera. You also may hear it referred to as a tota light, top light or camera light. These lights sometimes come with a filter attached to it called a dichroic filter. Its purpose is to match the sunlight when used during the day. If you turn it on inside, you will see it has a bluish color as if shooting outdoors. For the best lighting at an outdoor ENG (electronic newsgathering) shoot, the talent should be placed with the sun to his or her right.

LIGHT DIFFUSION

To give your image a softer, more natural light, with undefined shadows you can use diffusion material over the lights – material such as spun glass (tough spun), heat-resistant plastic, metal window screen, and a metallic mesh (scrim). Diffusion materials reduce glare and harshness in your scene. Diffused light makes people more comfortable as well.

BOUNCE LIGHTING

The bouncing of light spoken of in the photography lighting section also comes in handy when shooting video. Bouncing light produces soft, natural lighting and reduces glare and harshness. You can bounce your lights off of walls and ceilings or use lighting umbrellas. Be careful when bouncing light; however, because if the surface is not white, your light will be mixed with another color.

No other tool at your disposal will do what light can do for the look, feel, and mood of your productions. When you apply these lessons and use your camera and light kit, you'll increase the effectiveness of your productions and the command information messages you craft.

FUNDAMENTAL PORTRAIT LIGHTING

The success of a portrait is equally dependent on lighting as on the pose of the subject. The manner in how the subject is lighted can actually set the mood of a portrait. The best portrait lighting will simulate natural sunlight. This is because we are accustomed to seeing faces illuminated from above and to one side with shadows cast downward and on one side or the other. Light coming from below eye level casts shadows upward and produces an unnatural, ghastly effect.

Good portrait lighting shows off the subject to the best advantage, emphasizing the form and expressiveness of the facial features. When lighting appears pleasing and natural in a portrait, it produces prominent highlights on the forehead, nose, cheeks, and chin with enough shadows to round out the facial features.

Lighting for a studio portrait normally requires at least two lights. One of these is the *main*, *modeling*, or *key* light; the other is the *fill* or *fill-in* light. Portrait lighting is divided into various types called lightings. Some of these lightings are as follows: broad, short, butterfly, Rembrandt, split, and rim. These names have been assigned because of the visual effects the lighting creates when it falls on the subject from a given direction.

This visual effect is derived from the modeling light. Other light sources that may be added to the *modeling light* to enhance the subject are as follows:

- *Broad lighting* – The main light completely illuminates the side of the face turned toward the camera.

- *Short lighting* – The main light completely illuminates the side of the face turned away from the camera
- *Butterfly lighting* – The main light is placed directly in front of the face and casts a shadow directly under the nose.
- *Rembrandt lighting* – This is a combination of short and butterfly lighting. The main light is placed high and to the side of the face turned away from the camera and produces a triangle of light on the side of the face in shadow.
- *Split lighting* – The modeling light is placed to light completely one side of the face while placing the other side of the face in shadow.
- *Rim lighting* – The modeling light is placed behind the subject and places the entire face in shadow.

MAIN LIGHT

The main light as mentioned above is also known as the modeling light, because it is used to model the face (or subject). The main light creates a three-dimensional effect by either emphasizing or de-emphasizing the curvature and characteristic features of the face with highlights and shadows. The modeling light should always be the one dominant light source in a portrait because it controls the direction of the shadows.

The direction of the main light establishes four basic portrait lightings – *three-quarter lighting*, *sidelighting*, *frontlighting* and *backlighting*. When reading other books on portrait lighting, you will often encounter other names depending on what the author wanted to call the lightings. You, as an MC, will mostly be concerned with three-quarter (broad and short) and front (butterfly) lighting. We also designate each of our lightings as high, medium, and low for vertical position. To go further, we designate the lighting as right or left of the subject. These lighting positions change with each subject. When setting portrait lights, you should always study the effect and view the subject from the camera position, preferably through the viewfinder.

THREE-QUARTER LIGHTING

Broad and short lighting are two types of three-quarter lighting, and they are the types that you most often use for official portraits. The only difference between the two is the position of the main light and the way it illuminates the subject.

Short lighting is used for people with a normal-shaped face or people who have a wide face. When short lighting is used, the side of the subject's face that is away from the camera is illuminated. This puts the side of the face toward the camera in shadow. By putting the side of the face toward the camera in shadow, you can provide a slimming effect.

Broad lighting is useful for subjects with a narrow face. When broad lighting is used, the side of the face toward the camera is illuminated, and the side of the face away from the camera is in shadow. This provides a widening or broadening effect of the face (see figure 2-12).



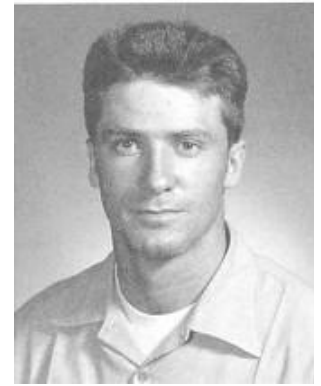
Short lighting
Main lighting only



Short lighting
with fill light



Broad lighting
Main lighting only



Broad lighting
with fill light

Figure 2-12, Short and broad lighting.

Flexibility of Three-Quarter Lighting

Three-quarter lighting can be used with almost any type of face. It is flexible because once it is set, the subject can move his head from full face to profile and the lighting remains good at any point you choose to pose the sitter. The degree of flexibility is determined by the type of light used (spot or flood) and the size and type of reflector used.

MAIN LIGHT DISTANCE

The power or intensity of the main light is not the determining factor for the distance the main light is placed from the subject. It is the visual effect the light has on the subject that determines this distance. When the main light is too high and close to the subject, there may be too much light falling on the forehead and not enough light falling on the lower part of the face. This effect can be improved by moving the main light farther away from the subject and placing it correctly. Highlights on the forehead, the upper cheeks, the chin, and along the bridge of the nose are created by the main light. These highlights give life, brilliance, and form to a portrait, and the quality of these highlights is controlled by the main light distance.

To determine the main light distance, start with the light about four feet from the subject and about two feet above the subject's eye level. The light should be about a 45-degree angle to the lens axis. Observe the forehead highlight and move the light closer to the subject. As the light gets closer to the forehead, highlights spread out to a large, flat area and begin to wash out.

Now, start moving the main light away from the subject. As you slowly move it back, you will find there is a point where the forehead highlight becomes relatively small and bright. When the light is moved back much further from this point, the highlight spreads and disappears. Between the point where the highlight is brightest and where it starts to disappear lies the range where the highlight still has character. This point is where you get the most pleasing effect. Once you have found the distance where the main light gives your desired effect, the *distance* should remain the same regardless of the *direction* you need to move the light. This main light distance should always be considered as the *starting* point of portrait lighting.

MAIN LIGHT HEIGHT

To determine the correct height for the main light, move the light directly in front of the subject while maintaining the distance determined for the forehead highlight. Raise or lower the light until the shadow cast by the nose is just long enough to touch the top edge of the upper lip. This is the height the main light should normally be no matter at what position you place it in an arc around the subject. When your subject is wearing a hat with a visor, the visor shadow should fall naturally across the face. Many photographers think the shadow cast by the visor should not shade the eyes. The shadow from the visor should shade the eyes. However, in a portrait, this shadow should not be so dark that shadow detail is lost and the eyes are hard to see. To prevent this shadow from being too dark, raise the main light to the desired height, and instead of aiming it down at an angle, aim it straight. This way the light is cast under the visor and prevents the shadow from becoming too dark.

MAIN LIGHT DIRECTION

By the time you have determined the main light distance and the height for a given subject, you should have a pretty fair idea of the direction of light from the main light. To establish the direction from which this light should come, move the main light in an arc, to the right or left, around the subject.

Remember, while moving the main light, its established distance and height should be maintained. The shadow cast by the subject's nose is your key to main light direction. The light should be moved around until the shadow cast by the nose merges with the cheek shadow and leaves a small, triangular highlight on the cheek. When this is done, the main light is in position. Remember, the main light must always be the dominant, directional, shadow pattern forming light.

FILL-IN LIGHT

Once the main light has been established, the fill or fill-in light is added. This fill light is a secondary light and must not overpower the main light. Its purpose is to fill in and soften the shadow areas, making them lighter, and to provide shadow detail. The fill light is placed slightly above the subject's eye level, on the opposite side of the camera from the main light and near the camera lens axis. The fill-in light should be less intense than the main light and of softer quality. This light is often diffused even when the main light is not. By placing the fill light slightly above the subject's eye level, you can cast a shadow under the chin. This shadow separates the head from the neck. The chin shadow should be soft and unpronounced.

The intensity of the fill-in light can be controlled by either adjusting the power setting of an electronic studio light set or adjusting the light-to-subject distance. The fill light can be moved in an arc to the side of the subject and away from the camera. The fill light must not produce conflicting shadows (shadows that point toward the main light).

CATCH LIGHT

A catch light provides a small, bright reflection of the main light in the eyes of the subject. It adds life and brilliance to a portrait and gives the eyes sparkle. There should be only one catch light in each eye, and it should be high in the iris of the eye. For broad lighting, the catch light should be approximately in the 11 o'clock position. The main light for short lighting should create a catch light at approximately the one o'clock position.

The lighting ratio for portraits should usually be about 3:1; 4:1 is maximum for good color portraits.

BACKGROUND LIGHT

The third light in studio portrait lighting is the background light, see figure 2-13. A background light is usually placed on a low stand midway between the background and the subject. When adjusted correctly, the background light provides good tonal separation between subject and background. The intensity of the light falling on the background should not normally be greater than the intensity of the light from the main light falling on the subject's face. By increasing or decreasing the intensity of the light on the background, you can control the tone or color reproduction of the background in the finished print. To reproduce the background color to its "true" color in a color print, it must receive the same amount of light as the subject's face.

When taking portraits for use on a roster board, you want the tone and color of the background to be consistent. When the backgrounds vary in color, the roster board does not appear uniform, and the attention of the viewer is distracted. When a background light is used, it is wise to position it before setting up any other light. It is easier to determine its effect without the interference of the main and fill light.

The background light should be positioned so the brightest area of the light illuminates the background directly behind the head and gradually falls off into the corners of the frame. When the background light is set in this manner, it separates the head from the body and draws the viewer's attention to the subject's face.



Figure 2-13, Effect of backlighting.

HAIR LIGHT

Once the main, fill and background lights are in their established locations, additional lights may be added to the setup to further enhance the portrait. One such light is a hair light. A hair light is usually a small lighting unit placed on a boom so it shines down from above and behind the subject. It is used to lighten the hair (or hat) and shoulders, add detail to the hair, and separate the subject from the background, presenting the illusion of a third dimension, see figure 2-14.

The intensity of the hair light varies with the subject since it is dictated not only by the color of the person's hair (or hat) but also by the amount of sheen the hair has. The hair light is usually placed on the side of the subject opposite the main light and behind the subject. It should be used from an angle about six to eight feet high and from a position close to the center of the subject area without

the light stand or boom showing in the picture. Light from this unit should not be allowed to spill over onto the forehead or tip of the nose. The hair light normally has a snoot attached so light from it does not strike the camera lens. Be sure the hair light is turned off when making any exposure readings. This light does not affect your basic film exposure, but it could influence your meter.

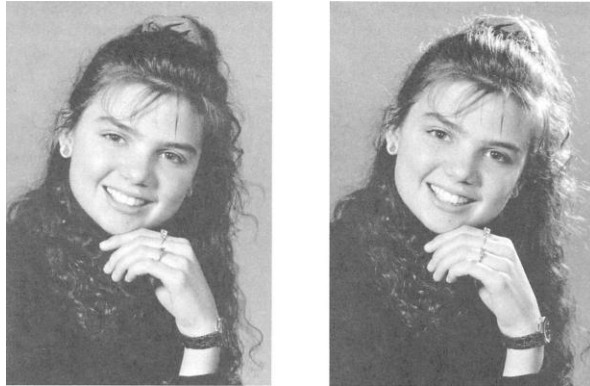


Figure 2-14, Effects of hair light.

SIDELIGHTING

With sidelighting, the face is lit more intensely on one side than the other (see figure 2-15). This type of lighting is well suited for young women WHO have smooth skin and regular facial features, or for men whose rugged character lines should be emphasized. Normally, you will not use sidelighting for official portraits.



Figure 2-15, Sidelighting.

BUTTERFLY LIGHTING

Butterfly lighting is often used when making portraits of women. To start, you can place the main light very close to the camera lens axis at about the subject's eye level. This creates a flat lighting, and facial feature characteristics can be lost. By moving the main light higher, you can create a certain amount of modeling. The light now creates a little modeling and is still very flattering and almost foolproof. This lighting is flattering because it does not emphasize lines or crow's feet around the eyes, wrinkles on the forehead, or shadows around the mouth. It does, however, emphasize eyes and eyelashes, especially in females. The main light should be just high enough to cast a shadow of the nose about a third of the distance from the nose to the top edge of the upper lip (see figure 2-16).

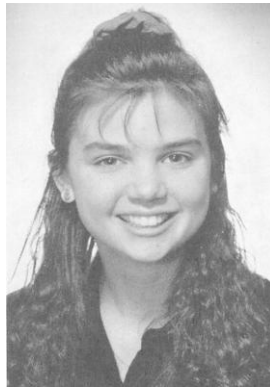


Figure 2-16, Butterfly lighting.

RIM LIGHTING

Rim lighting is often used when making profile portraits. Rim lighting is the same as backlighting, where the subject is lighted from behind causing the facial features of the profile to be highlighted (see figure 2-17).

In a profile portrait, when a person looks straight ahead, only the whites of the eyes are seen by the camera. This causes an undesirable effect. Instead have the eyes cheat. Turn the eyes slightly toward the camera, without turning the head, to show enough of the iris so the eye can be seen as an eye, not a white ball. Have the subject's head tipped back slightly. This separates the chin from the far shoulder, gives a better neckline, and reduces the appearance of a double chin. Allow more space on the side of the picture toward which the eyes are looking. This allows the subject to "look" beyond the frame.



Figure 2-17, Rim lighting.

PORTRAIT STUDIO EQUIPMENT

Barn Doors – Barn doors are made from opaque material. They are usually made of metal, painted black, and attached and hinged to the front of a light unit. They can be positioned to block or feather a portion of the light produced by the unit. Barn doors are made for both spotlights and floodlights. They are good accessories for controlling spill light.

Snoots – Snoots are cylinders, open at both ends, usually made of metal and painted black. They are used at the front of a spotlight to limit the size of the circular area projected by the unit. Short, wide snoots give a large circle of light. Long, narrow snoots give a narrow circle of light. A cardboard tube or black-rolled paper can be used for a snoot when you need to improvise.

Umbrellas – Umbrellas work much like the reflectors used on floodlights and provide an excellent means of converting specular light into soft, diffused light. Umbrellas can be used with any light source. The light unit points away from the subject; the umbrella is attached in front of the light and reflects or bounces the light back and onto the subject. The reflected light falling on the subject is softer and more diffused than the light originally emitted by the source. The reflecting surface of the umbrella determines the quality of the light. Umbrellas are usually made with a matte, white surface that provides a very soft, completely diffused light. Some umbrellas are constructed with a shiny, metalized surface. Metalized umbrellas throw a somewhat specular light, but the light is softer and spread over a larger area than the light emitted by the original light source.

Screens – Screens can be used to help eliminate strong shadows on a subject.

CORRECTIVE TECHNIQUES

Because the photogenic qualities of each person's face vary, certain corrective techniques in posing, lighting, and camera heights can be used to help depict the subject favorably and improve the quality of the portrait. Changing the camera viewpoint, combined with proper lighting and pose, can create amazing alterations in the pictured appearance of any face. Keep in mind that the most commonly made mistake is placing the subject too low in the frame.

For example, when the subject has a long nose, the light should be low to shorten the shadow. When the subject has a short nose, raise the main light to lengthen the shadow. This has a secondary effect as well. It adds form below the eyebrow and accentuates any slight hollowness in the cheeks, giving a more provocative look.

When shooting a portrait of a person smiling, you must shorten the nose shadow because the upper lip draws up and the shadow goes over the lip. The nose shadow should not extend over or touch the edge of the lip. When it does, the lip form is destroyed and it appears unnaturally small. The main light-to-subject distance is again determined using the forehead highlight test. The fill-in light is positioned directly below the main light-close to the camera lens axis and slightly above the subject's eye level. The intensity of this light should be about one f/stop less than the main light. The lighting ratio is established by moving the fill light closer to or farther away from the subject to increase or decrease its effect. Balance also can be controlled by using diffusion screens over the fill-in light. Although not as flexible as three-quarter lighting, front lighting does have some flexibility. The subject's head can be posed from full face to profile. However, the nose shadow must always remain under the nose. Therefore, the main light must be moved with the head; and as the head moves to the three-quarter or profile position, the hair light also must be moved. The fill light is not moved.

In the chart below, you will find additional techniques.

Issue	Corrective Technique
Chubby, round face	<ul style="list-style-type: none"> • Shoot three-quarter view, light side of face away from camera • Use three-quarter or sidelighting
Thin face	<ul style="list-style-type: none"> • Shoot front, full face • Use low three-quarter or sidelighting
Wide forehead	<ul style="list-style-type: none"> • Use low-camera viewpoint • Tilt chin upward
Narrow forehead	Use high-camera viewpoint
Baldness	<ul style="list-style-type: none"> • Use low-camera viewpoint • Little or no hair light • Blend head with background
Eyes close together	Shoot three-quarter pose
Eyes far apart	Shoot three-quarter pose
Small eyes	<ul style="list-style-type: none"> • Shoot three-quarter pose • Use three-quarter lighting so the eyes are in shadow
Large or protruding eyes	<ul style="list-style-type: none"> • Use high three-quarter lighting • Lower eyes slightly
Deep set eyes	<ul style="list-style-type: none"> • Use Low-camera viewpoint • Use frontlighting to keep eyes out of shadow
Uneven eyes	Turn head toward one side so natural perspective eliminates uneven appearance
Bags under eyes	<ul style="list-style-type: none"> • Use makeup • Use frontlighting
Cross eyed or defective eye	<ul style="list-style-type: none"> • Turn head so bad eye is away from camera • Light side of face toward camera to place other eye in shadow
Short nose	<ul style="list-style-type: none"> • Use front lighting • Use high-camera viewpoint
Dark skin	<ul style="list-style-type: none"> • Look for backgrounds slightly darker than the subject • Keep as much light as possible off the background • Move the subject away from the bright background • Keep subject away from a wall, desk, etc., to avoid shadows.

PORTRAIT COMPOSITION and SUBJECT PLACEMENT

As in every type of photography, in portraiture there must be one, and only one, principal point of interest. Naturally, in a portrait, this is the subject's face. You can emphasize the point of interest in a portrait by doing the following:

- Contrasting the point of interest with the background
- Giving it the strongest lighting
- Posing the subject and arranging the props, so all elements point to the point of interest
- Identifying it at a strong point within the picture area.

Where are the strong points within a portrait picture space? The principle of thirds, to be discussed in a subsequent chapter, applies to portraiture as well. These are the areas within a portrait

that attract eye attention and are the preferred locations for the center of interest. In a portrait, when the main point of interest is located at Point A, the secondary point of interest should be at Point D. If B is the point of interest, C becomes the secondary interest point. Such an arrangement obviously balances the composition. Usually in portrait composition, the eyes fall close to Points A or B.

These positions are approximations only. The final adjustment of the head depends upon:

- the eye direction
- the shape of the body
- the leading lines

No rule can be given for best portrait composition. Rules only give guidance to a rough approximation of good placement. You can only arrive at the best composition for each portrait through the feeling for balance and subject position. When the head and shoulders are placed high in the picture frame, a sense of dignity and stability is gained. Such placement is particularly appropriate when the subject is a person of importance, such as your commanding officer. However, when the head is too high, viewing the picture is uncomfortable. This creates a scenario in your mind that if the subject stood up he would bump his head. Also, when the head is too high, the proportion between head and body areas becomes awkward.

FULL-LENGTH PHOTOGRAPHS

Another type of portrait photography you will encounter as a Navy MC is full-length photographs used for promotion and other selection boards. Per the [Military Personnel Manual](#) article 1070-180 (officer photographs), "photographs are required for all officers of the Navy and the Navy Reserve, regardless of status, within three months after acceptance of each promotion." This article also provides information for you as the MC when you are shooting this type of portrait. For example, the article states that the photograph must be in color with the subject at a three-quarter view, left shoulder forward. It also spells out the required photo size and specifications for the embedded title board.

When shooting full-length photos for boards other than officer promotions, ensure you review the current instruction for such additional guidance.

Background – Since the studio setup is unique for full-length photographs, they should be scheduled at a time other than that of normal head-and-shoulders portraits. The background for full-length photographs must be a contrasting color from the uniform of the subject. Normally, white seamless paper is used because it provides the best results. When white seamless paper is used for full-length portraits, it must drape down and provide enough coverage for the subject's head and extend to the deck so the subject is standing on it. You should protect the background from footprints and tears by laying down a protective material, such as paper or acetate.

Lighting – When lighting a full-length portrait, you must light the entire body of the subject evenly and not allow objectionable shadows to show on the final product. This is best achieved when the subject is lighted with light diffused from two umbrellas. The background can be lighted evenly with two background lights you should always conduct tests to determine the best lighting setup for your studio equipment and facilities.

PASSPORT PHOTOGRAPHS

Passport photographs are special portraits required for travel outside the United States. If you are tasked with shooting passport photographs, you should familiarize yourself with the current U.S. government passport photo requirements.

Passports should only be provided to U.S. military personnel, their authorized family members, and employees of the federal government when required for executing official orders. Providing such photography for purposes and to individuals other than this is an infringement of the rights and commercial enterprise and may violate U.S. Navy Regulations.

Passport photos must portray a good likeness of the applicant as well as satisfactorily identify the applicant. Passport photographs must meet the following requirements:

- Photographs must be 2x2 inches in overall size. The image size, measured from the bottom of the chin to the top of the head (including hair), shall be not less than 1 inch or more than 1 $\frac{3}{8}$ inches
- Passport photographs must be in color (see figure 2-18)
- Photographs that depict the applicant as relaxed and smiling are encouraged. Photographs should be portrait-type prints, meeting the size and image specifications listed above. Photographs must be clear, front view, full face, eyes open with a light, plain background
- A passport photograph serves to identify the passport applicant. When glasses, a hearing aid, a wig, or similar articles are normally worn, these articles should be worn when the photograph is made. Dark glasses with tinted lenses are not acceptable, unless required for medical reasons
- Photographs should be made in normal street attire without a hat or other headgear that obscures the hair or hairline.

Up-to-date guidelines for taking passport photos can be found on the U.S. State Department page for [professional photographers](#).

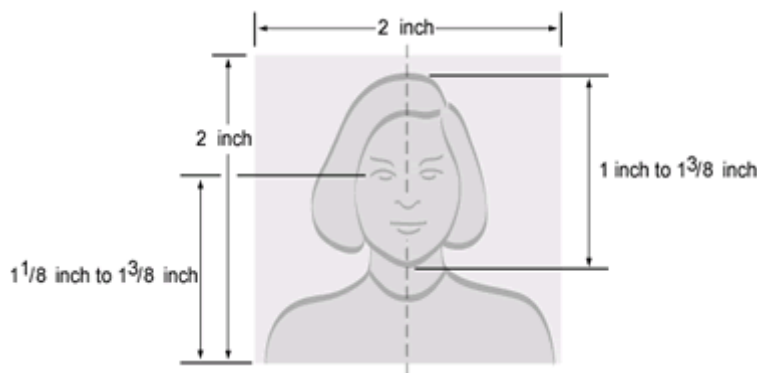


Figure 2-18, Passport dimensions.

TENTING

Photographing small products can be quite difficult if they include bright reflective surfaces. You can easily see other nearby objects reflected in them and sometimes even the whole studio. Also,

light from the lighting units may reflect off the surface very strongly at a particular point. This can create an unwanted bright highlight. There are two ways to get around these problems. You could use many lights and add reflectors to make sure the lighting is even. This may solve the problem of light from the lighting units reflecting off the subject surface, but unfortunately there are two great disadvantages: it requires more lights than most photo labs have, and you still have reflections. The other way to solve the problem is to use the tenting technique. The tent consists of a frame covered by a translucent white material that casts a diffused illumination on the subject. The lights are placed outside the tent and directed onto the translucent material. The color of the background, which is placed inside the tent with the subject, depends on the subject and the effect desired (see figure 2-19). Strips of black or colored paper taped to the inside of the tent add the necessary dark accents or "bring to life" a colorless object.



Figure 2-19, Tenting.

MULTIMEDIA

Just as MCs who shoot still and video images need to understand about lighting and color, so do those of us working with multimedia products. More specifically, you must understand the difference between RGB color and CMYK color in order to ensure the products you create look as good in print as they do projected on a screen.

COLOR MANAGEMENT

Few issues in multimedia cause as much confusion as color management and the differences between the RGB (red, green, blue) and CMYK [cyan, magenta, yellow, and key (black)] color models. These color models are opposites.

RGB, sometimes referred to as an additive color process, is what your monitor uses to send color to your eye. It combines red, green, and blue to create a whole range of different colors. CMYK is the color space used in the world of ink and paper. It is also known as a subtractive color process. Cyan, magenta and yellow inks are combined to create thousands of other colors. Black ink is added into the process, because while in theory, black can be created by combining cyan, magenta and yellow. In reality, the combination has somewhat of a tint and is not pure black. The result of this combination, in reality, is black with a tint, not pure black.

NOTE: White establishes overall color balance of your monitor.

So what does all this mean to you as an MC? For starters, RGB offers a wider range of colors than CMYK, and RGB colors tend to be more vivid than CMYK. Additionally, many RGB colors cannot be duplicated using the CMYK process.

As long as your product remains on a computer screen (website, command presentation, etc.) the differences between the two-color processes are purely theoretical. However, the moment your desktop published document makes the leap from monitor to printing press, the differences between the two color spaces become crucial. A green that looked vivid on screen can turn into a dull, khaki color when your document is printed. That charming piece of clip art of Santa's elves in bright green outfits suddenly looks like a picture of elves in Army uniforms when converted from RGB to CMYK.

Thus, if you are using a particular color, convert it to CMYK to make sure it will print the way you want it to. Note that some software does not allow users to work in CMYK.

In the early days of desktop publishing, the prevailing wisdom was that all documents should be converted to CMYK before sending them to a printer or service bureau. This allowed the desktop publisher a measure of control over color appearance. More than one desktop publisher has forgotten to convert a color, thus having a print job come back with graphic elements like lines and shaded boxes missing as a result.

Nowadays, however, some printers prefer to receive files in RGB, so they can convert to CMYK themselves using their expertise. This helps them convert the colors to their closest CMYK equivalents, while taking into account the calibration of their printing equipment. The key is to consult with your printer or service bureau ahead of time to see what format they prefer for your document.

If using your shop's inkjet printer or desktop color lasers, keep in mind that these devices sometimes convert files from RGB automatically. However, the limitations of CMYK still apply to these output devices, so design with color mode differences in mind. As with any equipment you use in your shop, always check the user's manuals and get to know your equipment.

SUMMARY

In this chapter, you learned about light, lighting techniques and color and how these processes and theories affect photography, videography and multimedia products. Lighting is critical to all visible mediums, and, as an MC, light is one of the most important tools you'll have in your toolbox. Today's MCs produce, edit and view products on light-sensitive devices that require a basic understanding of what this chapter has covered. Therefore, the discussion of color, theory of light, and multimedia in this chapter is meant to be a quick and efficient reference to the visible light portion of the electromagnetic spectrum. Remember having an understanding of how light and color affect your images and multimedia products is critical to your role as an MC.

CHAPTER 3

PHOTOGRAPHY

Learning Objectives: *Upon completing this chapter, you should be able to do the following:*

- *Identify the basic parts of a camera.*
 - *Identify the basic process of photography.*
 - *Identify camera accessories.*
 - *Identify the methods used for controlled and uncontrolled shooting.*
-

INTRODUCTION

Photography is one of the pillars of the MC rating, and every MC must possess the skills necessary to capture images in support of our mission. As you have heard hundreds, if not thousands of times in your lifetime, “a picture paints a thousand words.” Statistics show most people glance through newspapers and magazines, and rely on imagery to tell the story. Visual imagery readily tells and sells the Navy story to the media, elected officials and the public. Without imagery, we have no story.

In this chapter we will take what you learned about lighting and color and turn our focus to cameras, camera operations and basic shooting techniques.

CAMERA OPERATIONS

The basic elements of photography include:

- The Camera
- Aperture
- Shutter
- Exposure
- Depth
- Angle
- Lens
- Accessories
- Composition Techniques
- Controlled/Uncontrolled Subjects.

The CAMERA

Derived from the Latin phrase *camera obscura*, meaning dark chamber, a camera is a light-tight box used to capture images. A camera generally consists of an enclosed hollow chamber with an opening (aperture) at one end for light to enter and a recording or viewing surface for capturing the light at the other end. Though still based upon this principle, additions to the basic camera have improved focusing the image, viewing, controlling the amount and duration of light entering the box, as well as range and exposure calculations.

Today's MCs use digital single-lens reflex cameras, (DSLRs), that use a mechanical mirror system and a pentaprism that directs light from the camera's lens to its optical viewfinder found on the back of the camera. DSLRs resemble traditional 35mm format cameras.

CONTROLS AND INDICATORS

The basic DSLR camera (see figure 3-1) contains main controls and indicators, which will be discussed briefly below. However, when you begin working with a camera, you should take the time to read through the camera's manual and to familiarize yourself with your equipment. Imagery you produce will be a result of your skills and experience in using your camera. The camera is simply the tool with which you gather this imagery.

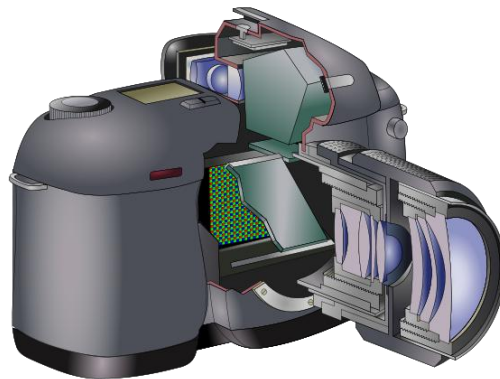


Figure 3-1, Digital Reflex Camera.

APERTURE

Aperture is the variable opening, produced by the iris-diaphragm, through which light passes into the camera. The aperture control is a ring around the lens with a scale that lists aperture numbers (2.8, 3.5, 4, 5.6, etc.), also known as "f/stops." The ring sets the f/stop on the lens to control the amount of light entering the lens.

Aperture also controls the depth of field of an image, or the range of acceptably sharp focus in front of and behind the subject of your image. The lower the f/stop, the shallower the depth of field.

On modern cameras, the aperture settings are controlled on the camera. Full stops are 1.0, 1.4, 2.0, 2.8, 4.0, 5.6, 8, 11, 16, 22, 32, 45, 64, 90 and so on. Notice that the number doubles for each two-stop decrease in size. Slight optical corrections are made for f/11 and f/45. This may seem confusing at first, but knowledge of the f/stop system is necessary to compute optical formulas used by advanced photographers. It is necessary to know that each marked f/stop on a lens, except its widest aperture, is usually a full stop — that is, it admits one-half or twice the amount of light as the adjacent stop, and the larger the number, the smaller the aperture. At first, it is perhaps easier to think of the f/stops in terms of fractions; 1/8 is larger than 1/11 which is, in turn, larger than 1/16.

Setting the Aperture Control

Adjust the f/stop on the aperture control ring on the lens, or the main control dial on the camera, depending on the specific type of camera and lens, to attain the correct exposure. Both controls can increase or decrease the depth of field.

SHUTTER

A shutter controls both the exact instant of exposure to light and the duration of that exposure. The shutter works in conjunction with the diaphragm to control the exposure. The shutter is a thin sheet that covers the charge-coupled device, or CCD (think of the CCD as film). When this shutter opens, it exposes light from the exterior onto the CCD, allowing a photo to be taken. The length of time that the shutter remains open is termed the shutter speed.

Shutter Release Button

The shutter release button opens the shutter and initiates the exposure.

Shutter Speed Dial

The shutter speed dial indicates optional shutter speeds and sets the length of time the shutter remains open during an exposure. Shutter speeds are indicated in fractions of a second; for example, 60 = 1/60 of a second (also expressed as 1/60). The higher the number on the dial, the faster the shutter speed and the shorter the exposure. Like aperture settings, shutter settings are controlled on the camera on modern cameras. Shutter speeds control the duration of time that light is allowed to pass through the lens aperture to the film. Shutter speeds are usually marked on the camera as the reciprocal of the fraction of a second that the shutter remains "open" (one is 1/1 or one second, two is 1/2 or one-half second, four is 1/4 or one-quarter second and so on).

Standard shutter speeds are B, 1", 1/2", 1/4", 1/8", 1/15", 1/30", 1/60", 1/125", 1/250", 1/500", 1/1000" and 1/2000". B is the bulb setting. Bulb setting allows the shutter actuation button to keep the shutter open for so long as the shutter release button is held.

SETTING THE SHUTTER SPEED

You may encounter situations where you need to freeze action or blur motion. In these situations you must manipulate both the shutter speed and the aperture control ring. For instance, you may set your camera at 1/60" to illustrate the speed of a runner — his legs and arms are a blur of motion on the finished photograph.

Consequently, if you want to freeze the action, you set your camera at 1/250" or higher. Then the runner's legs, arms and victory expression are "frozen." For hand-held shots, choose a shutter

speed no slower than the speed closest to the focal length of the lens. For example, you would select 1/60" for a 50mm lens and 1/250" for a 250mm lens.

To stop the movement or action in a picture, you must consider the following three factors:

- *Relative movement of the subject* — the faster the movement, the faster the shutter speed required. The term relative movement is used because if the motion of the subject is followed, that is, the action is "panned" with the camera, a slower shutter speed can be used than if the camera were held stationary
- *Subject's direction of movement* — a subject traveling at a right angle to the camera/lens axis requires a faster shutter speed than one traveling at a diagonal. Conversely, a subject moving toward or away from the camera, parallel to the lens axis, can be "stopped" with a slower shutter speed than movement in other directions
- *Camera-to-subject distance* — the closer the action is to the camera, the faster the shutter speed must be. A car traveling 60 miles per hour across the lens axis at a distance of 100 feet would be "stopped" by a shutter speed of 1/1000" (or perhaps 1/500"). However, if the camera-to-subject distance were increased to 500 feet, the action could be "stopped" with a shutter speed of "1/250" or "1/125." If the car was a half-mile away, 1/60" should be sufficient to stop the movement.

ISO Indicator

The ISO (International Standards Organization) is another method of controlling the amount of light that enters a DSLR. The lower the ISO setting, the less light available in the camera. Modern cameras can be set as low as 100 and as high as 6400.

EXPOSURE

Exposure is the amount of light falling on a unit area of the digital sensor. The intensity is the amount of light falling on this unit area during the exposure time. Thus the equation for exposure is as follows:

$$\text{Exposure} = \text{Intensity} \times \text{Time} (E = I \times T)$$

Exposure is controlled through the aperture setting, shutter speed and ISO speed. The same exposure can be given to a certain subject by using various combinations of lens openings and exposure times — a wide opening and short time of exposure may allow the same total amount of light to reach the sensor as a small opening and a long exposure time. A common rule for exposure calculation is the "sunny f/16" rule.

To use the f/16 rule, set your camera shutter speed to 1/125 and your aperture to f/16. In photography, the **sunny f/16 rule** (also known as the **f/16 rule**) is a method of estimating correct daylight exposures without a light meter and can aid in achieving correct exposure of difficult subjects. As the rule is based on incident light, rather than reflected light as with most camera light meters, the photographer compensates for very bright or very dark subjects. The rule serves as a mnemonic (or a reminder) for the camera settings obtained on a sunny day using the exposure value (EV) system.

Equivalent Exposures

Aperture and shutter speeds each have a doubling and halving effect on exposure. This doubling and halving relationship of aperture and shutter allows you to combine different f/stops and shutter speeds to alter the image, while, at the same time, admitting the same amount of exposure to the light-sensitive material.

For example, you have determined that the correct camera settings for your subject is 1/125 second, at f/16. Instead of using this combination of shutter speed and f/stop, you could double the shutter speed (to stop action) and halve the f/stop. In this example your new camera setting could be 1/250 second at f/11, 1/500 second at f/8, or 1/1000 second at f/5.6, and so on. Or when you need more depth of field, 1/60 second at f/22 or 1/30 second at f/32, and so on, can be used.

These shutter-speed and f/stop combinations are called equivalent exposures. Equivalent exposures control depth of field and stop motion. The combination of shutter speed and f/stop is used to capture the subject and effect you want to create.

Because many cameras are fully automatic, you may wonder why you need to know basic exposure. There are three good reasons for knowing an understanding the basic principles of exposure. First, you want to control the depth of field and stop action instead of the camera controlling it. Second, a light meter cannot think for itself. A light meter only responds to the light it receives. You must know when to override the camera, such as when the subject is sidelighted or backlighted. Lastly, meters are mechanical. They can be inconsistent, consistently wrong, or fail altogether. When you can workout in your head, roughly what the camera exposures should be, you will know when the camera or light meter is wrong. Knowing when a light meter is giving incorrect readings could make the difference between success and failure of an important photographic assignment.

DEPTH OF FIELD

You do not always want everything in your photographs to be in sharp focus. By using selective focus, you can emphasize the main subject and draw attention to it. "Selective focus" means the use of a shallow depth of field to isolate or emphasize the subject. Selective focus is the control of the zone of sharpness, or depth of field, in your photographs. "Depth of field" is the distance between the nearest and farthest points of acceptable sharp focus of the scene photographed.

Simply stated, depth of field increases as the focal length of the lens decreases (a shorter focal-length lens is used). As the lens aperture decreases (gets smaller in size) and as the distance focused on (focal point) increases, or both. Inversely, depth of field is less for long-focal-length lenses than for short-focal-length lenses, is less for wider apertures and is less for shorter lens-to-subject distances.

A peculiarity of the term depth of field is that it is typically used to define a condition of maximum depth of field. When the depth of field is shallow or purposely restrictive, the term selective focus is used. Selective focus is merely "selecting" a depth of field that will satisfy a requirement to have the foreground, background, or both, not in sharp focus. The use of selective focus to make the main subject stand out in the picture by being "sharp" while the rest of the image area is blurred is a good technique for gaining subject emphasis.

Camera Modes

Aperture Priority – User controls the aperture, and the camera chooses the appropriate shutter speed in order to capture correct exposure.

Shutter Priority – User controls the shutter, and the camera chooses the appropriate aperture setting in order to capture correct exposure.

Program Mode – The camera controls both shutter and aperture settings in order to capture correct exposure.

ANGLE OF FIELD

The focal length of a lens is a determining factor in the coverage of that lens. The maximum coverage at the focal plane of a lens is expressed in degrees as the angle of field. Angle of field is the widest angle at which light entering a lens produces a usable portion of the circle of illumination at the focal plane. Light around the edges of the entire circle falls off in intensity before disappearing completely. The usable portion of this circle is called the *circle of good definition*.

LENSES

As noted previously, most digital single-lens reflex cameras (digital SLR or DSLR) have interchangeable lenses. The "focal length" of a lens is the distance from the optical center of the lens to the focal plane (film plane) when the camera is focused upon an object at infinity. A 50mm focal-length lens is considered the "normal" lens, because when you look through the viewfinder, objects appear at their approximate normal size. A smaller than normal focal length (such as 28mm) means a wider angle of view. A longer than normal focal length (such as 135mm) is a telephoto lens.

The f/stop (aperture) ring controls the amount of light passing through the iris diaphragm of the lens and striking the CCD. The higher the f/stop number, the smaller the amount of light allowed to enter the camera lens. This principle works in the same manner as the iris of the human eye (see figure 3-2).

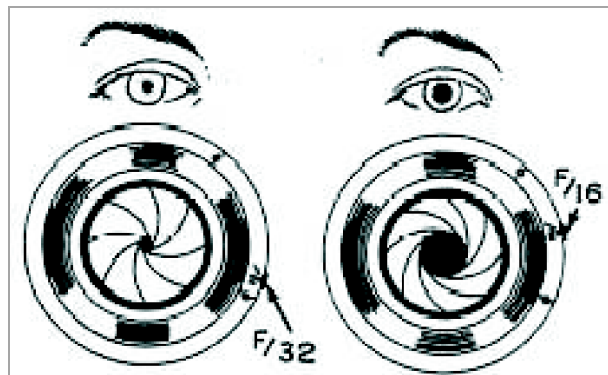


Figure 3-2, Comparison of the iris diaphragm of a camera lens to the iris of the human eye.

The types of lenses you may use in the fleet are as wide angle, ultra-wide angle, macro, normal focal length, telephoto, and variable focal-length, or zoom, lenses.

Wide-Angle Lenses – Anything less than 40mm in focal length is considered a wide-angle lens. A wide-angle (short focal length) lens is designed to take in a large view and is indispensable when working in confined spaces or when you want to cover a large area. Wide-angle lenses have their own qualities, causing apparent (REPEAT ... apparent) distortion and foreshortening of perspective, so objects close to the lens appear large, while background objects diminish in size dramatically.

Ultra-Wide-Angle Lenses – Many ultra-wide-angle, or short-focal-length, lenses are known as fisheye lenses. The ultra-wide-angle view of these lenses results in image distortion. Straight lines appear curved and curved lines may appear straight. Fisheye lenses make objects appear to diminish in size rapidly as the distance from the camera increases and objects close to the camera appear far apart.

Macro Lenses – A macro lens is used for close-up photography and is a valuable lens for any imaging facility to have. These lenses come in various focal lengths and are capable of producing up to one-half or even life-size 1:1 images.

Normal Focal-Length Lenses – The standard or normal focal-length lens for a DSLR camera is from about 40mm to 58mm (the most common being 50mm). This focal length gives you the same impression as you would get if you look at the subject with one eye. A normal lens helps you shoot photos of people when you don't want to get too close.

Telephoto Lenses – A lens with a focal length greater than 58mm is a long focal-length lens. Most modern, long focal-length lenses are called telephoto lenses because of their compact design. A telephoto lens is used from farther away to obtain the same size image that would be produced by a shorter lens at a closer distance. Any telephoto lens seems to compress the perspective of your image. A telephoto lens does not compress perspective; it only appears that way! Remember, perspective does not depend on the lens being used, but on the position of the camera.

Variable Focal-Length Lenses – A variable focal length, or zoom, lens changes the focal length by mechanically moving the elements within the lens. The movement of lens elements, in unison and in precise order, gives a smooth change of image size while maintaining acceptably sharp focus throughout the entire adjustment. The biggest advantage of a zoom lens is that you have many focal lengths in one single lens. You do not have to change lenses to use a different focal length.

NOTE: A lens used for portraits should have a longer than normal focal length. A long focal-length lens produces a large image on the film while keeping the camera at a far enough distance from the subject to prevent image distortion. Normal focal-length lenses are too short for anything but full-length portrait photography. They require the camera to be too close to the subject, image distortion becomes apparent, and working too close to the subject may intimidate him or her. Working too far from the subject with a normal lens to prevent distortion makes the image size too small. The ideal lens for portraiture should have a focal length equal to 1 1/2 or 2 times the diagonal of the film.

Optical Center

The optical center of a lens is a point usually (although not always) within the lens, at which rays of light from different sources are assumed to cross.

Astigmatism

Astigmatism is a lens aberration that causes an off-axis point to be imaged as a pair of lines at right angles to each other and in different focal planes. A lens having astigmatism is unable to image horizontal and vertical lines in the same plane with equal sharpness.

Focusing Systems

Accurate focusing and framing are essential to good images, and modern cameras have many devices to help you get good focusing and framing results. Because of the principles of depth of field,

simple cameras are manufactured without any way of adjusting focus. The lenses of these simple cameras are prefocused at the hyperfocal distance.

The hyperfocal distance for a lens is determined by the focal length and the aperture. That allows "point and shoot," ID, and passport cameras to produce photographs where everything from about one half of the hyperfocal distance through infinity are acceptably sharp. Focusing is accomplished by adjusting the distance from the lens to the film. It does not matter which of the two is actually moved, the lens or the film. With handheld cameras the lens is moved in and out. No matter what system you use to focus the camera, there must be a means for you to determine when the image is in focus. Most cameras have automatic focusing systems. Your camera's user manual is always your best point of reference. Refer to your camera's user's manual for further information.

ACCESSORIES

There are many accessories photographers use in their day-to-day work some are required or optional, but we will only mention a few to give you an idea of what they are:

- Filters
- Light Meter
- Tripod
- Monopod
- Shutter Release
- Flash
- Lens and body caps
- Lens hoods
- Memory card.

Filters

Filters are optical elements, such as glass, gelatin or plastic, dyed in a specific manner to absorb light of certain colors selectively, to emphasize or subdue certain objects and to improve the monochrome or natural reproduction of objects. The purpose of photographic filters is to alter the characteristics of light that reaches the light-sensitive emulsion. As light is transmitted through a filter, at least one of the following alterations occurs:

- The color of light is modified
- The amount of light is reduced
- The vibration direction of the light rays is limited.

With the advent of digital photography and sophisticated computer photo-editing software, the physical application of filters is almost non-existent. However, neutral-density (ND) and polarizing filters continue to be of importance when creating digital images.

Neutral Density Filters Haze Filters

Neutral density (ND) filters reduce the amount of light passing through a camera lens without changing the reproduction of colors in the scene. These filters are nonselective in their absorption of colors of light and therefore uniformly reduce the various colors of light in the spectrum. White light and colored light are transmitted through an ND filter with only the intensity of the light being affected.

This type of filter is useful in any setting where you want to use larger apertures and/or slow shutter speeds in bright conditions. When you desire to reduce the depth of field but maintain a given shutter speed, ND filters permit the use of a larger f/stop which in turn, reduces the depth of field. Neutral density filters are used extensively in motion-picture photography where depth of field is usually quite deep. ND filters are also used with mirror-type lenses where there is no aperture control.

Polarizing Filters

Polarizing filters change the way your camera sees and treats light. Their effect becomes apparent when you look at the blue sky through a polarizing filter while rotating it. As you rotate the filter, the sky appears to get darker, then lighter. Reasons for using polarizing filters:

- Reduction or elimination of unwanted reflections (glare) from nonmetallic surfaces, such as glass and water
- Exposure control, similar to ND filters
- Reducing the effects of haze
- Darkening the blue-sky image in both black and-white and color photography
- Increasing color saturation in a color photograph without altering the hues of image colors.

As discussed in Chapter 2, the term *polarize* refers to a property of light that cannot be seen – the direction in which light rays vibrate. Unpolarized light rays vibrate in all directions at right angles to the ray itself. A light ray is polarized when vibrations are in one direction only.

Any synthetic material that polarizes light may be called a polarizer, or polarizing device. A polarizing screen is a polarizer in sheet form.

Although there are many different polarizing filters, there are only two main types – one that fits over the camera lens and one for use over a light source. Since they do not affect color, polarizing filters and screens may be used for both black-and-white and color photography. A polarizing device used over the camera lens may have small posts (known as indicator handles) projecting from the rim for aligning the axis of the polarizing grid.

LIGHT METERS

A light meter measures light. As you read in the previous chapter, light is crucial to producing a quality image. The correct use of a light meter greatly increases the accuracy in determining your camera exposure. You should also understand that the incorrect use of a light meter can result in consistently unacceptable results. To assure consistently acceptable exposures, you must become thoroughly proficient with the correct operation of a light meter.

A light meter can be either built into the camera or a separate handheld unit. Both types are sensitive instruments and should be handled with care. There is little maintenance, but they do

require batteries. When you think a light meter is not working properly, have it checked by a qualified technician. Always be sure to check your equipment before leaving on an assignment. Like all camera equipment, careless handling and excessive heat and moisture limit the life of a light meter. A light meter must not be subjected to high temperatures for prolonged periods of time. Unless the light meter is designed for underwater photography, it should be protected in inclement weather.

Light Meter Readings – There are two methods of measuring light with handheld light meters. These two methods are the incident-light method and the reflected-light method.

- *Incident-Light Method* – This method requires the use of an incident-light meter. An incident-light meter has a diffusing dome that covers the photoelectric cell. When an incident-light meter reading is taken, the meter is held at the position of the subject with the photoelectric cell pointed toward the camera. The meter measures the light falling upon the scene. The incident-light method of measuring light is used extensively in motion-media photography and gives fast accurate results in all photography. Most light meters are designed for use as either incident-light or reflected-light meters. By removing the diffusion dome from the photoelectric cell, you can use the meter to measure reflected light
- *Reflected-Light Method* – When you are taking this type of light-meter reading, the diffusing dome should be removed from the photoelectric cell and the meter pointed toward the subject. A reflected-light meter receives and measures the light reflected from a scene within the angle of acceptance of the meter. The term angle of acceptance compares to the term angle of view of a lens. Both are predetermined during manufacturing
- The angle of acceptance and the distance between the meter and the scene are the controlling factors as to how much of the reflected light from the scene is measured by the meter
- When the angle of acceptance is greater than the angle of view of a lens (when using a telephoto lens for example), the meter should be moved closer to the scene. Light meters that are built into the camera are reflected-light meters
- When these meters are used, the angle of acceptance is not greater than the angle of view of the lens being used. The meter measures the light from the scene as seen by the lens. Some reflected-light meters have angles of acceptance between 1 and 4 degrees
- These meters can be used from a distance to measure the reflected light from specific objects within a scene. Exposure meters with angles of reflectance this small are called spot meters.

Light Meter Operation – You must understand the way light meters operate to determine whether the information they provide is accurate. No matter what type of light meter you use, it is an electrical-mechanical device that can only provide information for which it is designed. You are responsible for translating this information into useful exposure data.

Light meters are calibrated to see one shade only – middle gray. This means the information that the meter provides, no matter how much light is falling on the subject or what the reflection characteristics are, reads the subject the same as though it were middle or neutral gray (18-percent gray). Theoretically, if you take a reflected-exposure meter reading from an 18-percent gray card and expose your film according to the reading, the result should be a picture that matches the tone of the gray card exactly. However, when you take a light meter reading of a white or black object, the light meter still reads the objects as though they were 18-percent gray.

When you take a photograph that includes gray, white and black cards, you will see how, depending on where you take the light meter readings, they affect your photograph. For example, when you take the light meter reading from the black card, the final picture reproduces the black as middle gray, and the gray and white cards as white. When you take the reflected-light meter reading from the white card, just the opposite occurs. In your final photograph, the white card reproduces as middle gray, and the gray and black cards reproduce as black. This example demonstrates overexposure and underexposure. When the reading was taken from the black card, the meter raised the black tone to middle gray, and the gray card tone was also raised so it reproduced as white. Thus both the black and gray cards were overexposed. The opposite occurred when the exposure was based on the reading from the white card. The white tone was lowered to middle gray and the gray card tone to black, resulting from underexposure. Only a light meter reading taken from the gray card allows all three cards to be imaged at their true tone.

A more practical example on the way a light meter reads 18-percent gray is illustrated in the following example. Suppose you are going to photograph a ship alongside a pier. Bright sunlight is striking the ship from the side, causing part of the ship to be in shadow. This creates a brightness difference between the highlight area and the shadow area. Both highlight and shadow areas are equal in size and importance. When you get close to the ship and take a reflected meter reading of the highlight area alone, you expect the finished photograph, like the white card in the above example, to be middle gray. When you stop down the aperture to the recommended exposure of the meter, you are also reducing the amount of exposure from the shadow area. This results in a loss of detail in the shadow area of the ship, because it is underexposed. The opposite effect occurs when you take a meter reading from the shadow area. In this case, the shadow tones are raised to middle gray and have detail, but the highlights are overexposed and completely "washed out." If, however, there was an area in this scene whose tone was midway between the highlight and shadow areas, you could use it to take your light meter reading (like the gray card was used in the previous example).

In this example, assume there is no tone midway between the two extremes. You can still get an accurate light meter reading of the entire ship. Since the highlight and shadow areas are of equal size, the average light meter reading you get will represent a tone that is midway between the two extremes.

Reflected-Light Meter Reading

- Variations – There are variations of light meter readings used to provide accurate light meter readings of different types of scenes. These methods are as follows: the integrated, or average, method, the brightness range method, the darkest object method, the brightest object method, the substitution method, and the bracketing method
- Integrated, or average, method – The technique of making reflected-light meter readings from the camera position is called the integrated, or average, method. This method was used and explained in the examples above. This method is accurate for the majority of photographs taken
- The integrated, or average, method of measuring reflected light is acceptable for scenes that consist of approximately equal portions of light and dark areas; however, when a scene is composed of either predominately light or dark areas, the meter reading may not be accurate. The reason for these inaccurate meter readings can be more easily understood by using an example of photographing a checkerboard with alternating black-and-white squares

- When the meter is held at a distance to include the entire board, the reflected light from both the black and the white squares influence the meter, so an average reading results. The light measured from this position is the integrated sum of both the white and the black squares, as though the checkerboard were one gray tone. The light meter reading from this point should produce an acceptable image. If you hold the meter so close to one of the white squares that the black squares have no effect on the meter reading, the reading is higher than the integrated reading and the meter indicates that the scene requires less exposure. The same principle applies when a reading is taken close to a black square. The reading indicates that the scene requires more exposure. Each of the meter readings is a measurement of 18-percent gray. You can apply this checkerboard example when you photograph scenes that are predominately light or dark
- Compensation is required to expose such scenes correctly. As a general guide, you should double the indicated exposure when the light measurement is taken from a predominately light scene and detail is desired in the shadows. When you take a light meter reading from a predominately dark scene and detail is desired in the highlight areas, you should reduce the exposure by one half.

Brightness Range Method – This method requires you to take two readings from the scene – one from the highlight area and another from the shadow area. You then base your exposure on a point midway between the two readings. The brightness range method of determining exposures for most scenes usually provides detail in both the highlight and the shadow areas.

An exception to this is when the exposure latitude is not capable of recording the brightness range of the scene. This can occur with scenes that have extremely great brightness ranges. A scene brightness range is the difference between the brightest and the darkest areas of a scene and is usually expressed as a ratio. The average brightness range of a normal scene is 160:1.

When the scene exceeds a brightness range of 160:1, you must compromise the exposure. This compromise can be as follows:

- Underexpose and sacrifice shadow detail to retain highlight detail
- Overexpose and sacrifice highlight detail to retain shadow detail
- Do not compensate and expose for the midtones and sacrifice both highlight detail and shadow detail.

Darkest Object Method – The darkest object method of determining exposures is actually a variation of the brightness range method. When you desire detail in the shadow area or darkest object within the scene, you take the light meter reading from this area. This method actually overexposes the image overall, causing the highlight areas of the scene to be greatly overexposed. This overexposure occurs because the light meter averages the light reflected from the shadow area and indicates an exposure to produce middle gray. When a great amount of detail is not needed in the shadow area and you want to expose the overall scene normally, you can take your light meter reading from the darkest object or shadow area and stop down two f/stops. This method provides a good overall exposure of the shadows, midtones, and highlights.

Brightest Object Method – Another variation of the brightness range method is the brightest object method. The brightest object method of calculating exposures is used when a highlight area within a scene is the only area within the scene from which you can take a light meter reading. This method works when you want to record detail in the highlight area. In both situations, you take only one light meter reading of an important highlight area. When you do not want the highlight to record

as a middle-gray tone and desire a good overall exposure of the scene, you simply open up two or three f/stops from the indicated exposure. When you need maximum detail in the highlight area, you can use the reading that the light meter provides. This records the highlight area as medium gray. This method underexposes the film in other areas of the scene that reflect less light.

Substitution Method – With the substitution method, you replace an object within the scene with an object, such as a gray card. You then take a reflected-light meter reading from this object. You use this method when the other methods of determining exposure are not possible. Such situations may be caused by excessive distance between the light meter and the scene, barriers in front of the scene, or the size of the scene makes it impossible to get an accurate light meter reading.

The substitution method is often used in studio situations where objects may be too small to obtain an accurate light meter reading. You should select substitution objects that match the light reflectance quality of the object in the scene. For example, a white card can be used to substitute highlight areas of a distant scene. A dark or a black card can be used to substitute a shadow area, an 18-percent gray card can be used to represent middle gray or the back or palm of your hand can be used to substitute a gray tone.

When the substitution method is used, take the light meter reading from the substituted item under similar lighting conditions that exist in the scene. When the scene is in bright sunlight, the substituted object must also be in bright sunlight. Likewise, a scene in shade requires a substitute light meter reading in shade. You can use each of the methods discussed previously with the substitution method. An 18-percent gray card can be used for the integrated or averaging methods, a dark and a light card can be used for the scene brightness range method, a dark card for the darkest object method, and a light card for the brightest object method.

Bracketing Method – There are times when unusual lighting or subject brightness prevents you from getting an accurate light meter reading. In these cases, a good insurance policy is to bracket your exposure. To bracket, you should take one picture at the exposure indicated by the light meter, and then take two more exposures: one at one f/stop under the indicated exposure and another at one f/stop over the indicated exposure. When you are in doubt about the correct exposure, it is always better to overexpose than underexpose. Even though overexposure produces excess densities in the negative, it still provides a useable image that can normally be corrected in the printing stage. When underexposed, if the image does not exist on the film, no corrective printing techniques can provide image detail.

Causes of False Readings

Light meters give erroneous or bad readings that produce underexposed images for a number of reasons. You can prevent these bad readings by being aware of the conditions that cause them.

Light Entering the Viewfinder – When taking light meter readings, you must be sure the reflected light that influences your light meter is actually from the object you want to photograph. Stray light, backlighting, large dark areas and shadows can all cause erroneous light meter readings. When using a light meter, be sure that shadows are not cast from the light meter, camera or yourself.

When a handheld light meter is used, the distance of the light meter to the subject should not exceed the shortest dimension of the object. For example, when taking a light meter reading of a person's face that is approximately 9x6 inches, you should hold your light meter about six inches from the face of your subject when taking the meter reading. When using a light meter that is built into a camera, be sure to focus on the image before taking a light meter reading.

Light entering the viewfinder and falling on the viewing screen can cause underexposure. Most TTL meters read the light falling on the viewing screen from the lens. When strong lighting is coming from behind the camera, it can influence the light meter. When an occasional underexposed frame in an otherwise successful series occurs, the cause may be light entering the SLR viewfinder. Make a point of shielding the viewfinder if you do not have a rubber eyecup. When you use a tripod, have the camera set on automatic and cap the viewfinder to prevent exposure errors.

Incorrect Film-Speed Setting – When the majority of frames are consistently underexposed or overexposed, the most likely cause is you have the wrong ISO set on the film speed dial.

Bright Subject – A bright object or highlighted area can affect the sensing area of a spot or center-weighted TTL meter. This results in an underexposed image. To prevent this from occurring, you should ensure the sensor is pointed directly at a midtone within the scene, and use this as the camera exposure. When you frame and compose your image, the light meter may indicate a different setting. Be sure to leave your camera set at the indicated midtone setting. Normally, light meters that take integrated or averaged readings of the field of view cannot be fooled in this instance. But remember, even integrated systems cannot cope with extremely bright areas that take up a significant portion of the frame.

Bright Background, Dark Subject – When you are taking photographs that are backlit or against a light background, there is always the danger of underexposing the main subject (unless you use special techniques to fill in shadows, such as using a reflector or a flash unit). Be careful to take a reading from only the shadow side of the subject in these situations.

Too Little Light – The most frequent cause of underexposure is trying to take pictures when there is not enough light. Light meter readings are not very accurate at these low-light levels. When you want to make photographs under these conditions, be sure to use a tripod and bracket to provide more exposure than indicated by the light meter. You also can switch to a higher ISO.

There are several other causes that may cause your images to be exposed incorrectly. Some of the most common causes:

- Wrong camera settings are set when transferring information from a handheld light meter to the camera. This can also occur when you attempt to override an automatic camera
- Using a camera with TTL metering and placing a color filter with a high-filter factor over the lens
- Wrong aperture setting when flash is used
- Shutter speed is not synchronized with camera flash
- Aperture or shutter speed setting is knocked while carrying the camera. Always check the camera setting before taking a photograph
- Weak or incorrect battery in the light meter.

TRIPODS

The best way to support your camera is with a sturdy, rigid tripod (see figure 3-3). Tripods are three-legged camera supports with flat platforms or heads in which cameras are secured. Most tripods are equipped with a head that has an elevator center post. The camera is attached to this center post and is raised or lowered easily by cranking the post up or down. These elevators eliminate

the need for readjusting all three tripod legs for making small, last-minute adjustments to the camera height.

Tripods come in a variety of designs, sizes and weights. The heavier models are the sturdiest and provide the best support; however, if too heavy, they are not very portable. As a rule, the heavier your camera, the heavier and stronger your tripod must be. For some of the light, full-size tripods, hanging a bag of sand or another weight from the tripod head improves rigidity. This is especially useful in high winds. Another method is to hang a strap from the tripod head, and use the strap as a foothold on which to apply downward pressure.

Tabletop tripods are also available and can be used almost anywhere a flat surface is available. These small tabletop tripods can be braced against the photographer's chest. Because of their small size, they fit in a camera bag. To set up a tripod, extend one leg straight ahead toward the subject. This way the camera may be aimed by pivoting the tripod on this one leg. Extend the other two legs and adjust them to level the tripod platform horizontally.

When setting up a tripod on level ground, you can waste a lot of time trying to get the tripod level if the leg sections are not extended fully. An easy solution to the problem is to mark the tripod legs in specific increments with a marking pen, pencil, or scribe. One method is to mark short lines at one-inch intervals and long lines at six-inch intervals. Doing this reduces your frustration, saves time, and allows you to level your camera on the tripod with less effort. When a tripod is set up on an uneven surface, several adjustments of the side legs are normally necessary. Readjustment of the front leg levels the camera vertically so the platform or head is level. Most newer tripods have platforms that can be adjusted by eliminating the need for minor leg adjustments.

To mount the camera on the tripod head, you secure it in place by tightening the tripod screw into the camera tripod socket. Secure the camera by tightening the camera clamp screw locknut. After the camera is mounted on a tripod, test the camera to ensure all camera controls are accessible and function properly. The camera should be stable and not shake when the camera controls are operated.



Using a foot strap to make a tripod more rigid



Using a monopod

Figure 3-3, Tripod and Monopod use.

Monopods

A monopod is a single pole on which a camera is mounted (see figure 3-3). Monopods are useful for keeping the camera steady for location work when a tripod is too bulky or difficult to use; however, the use of a monopod is not advisable when using large, heavy cameras or when shutter speeds below about 1/15 second are used. Standing or kneeling with a monopod braced against your body or leg provides a camera the extra support and steadiness required for it to be an effective tool.

Shutter Release

A shutter release is a device consisting of stiff wire encased in an outer flexible covering, or a wireless device used to trip a camera shutter without touching the camera itself.

Flash

The electronic flash is a high-voltage light source for illuminating the scene to be photographed. It produces a momentary flash of high-intensity light. See chapter 2 for more information on flash use.

Lens and Body Caps

Lens and body caps are protective covers that keep dust and moisture away from lenses and camera openings.

Lens Hoods

Lens hoods, or shades, are used to keep strong sunlight from striking the front of the lens obliquely.

Memory Card

Memory cards, also known as flash cards, are electronic data storage device that stores digital contents. They capacities depend on the gigabytes or megabytes. Always make sure you have extras!

PHOTOGRAPHIC COMPOSITION

Photographic composition is *the pleasing arrangement of subject-matter elements within the picture area*. The camera sees and records only a small isolated part of the larger scene, reduces it to only two dimensions, frames it and freezes it. It does not discriminate as we do. When we look at a scene we selectively see only the important elements and more or less ignore the rest. A camera, on the other hand, sees all the details within the field of view. This is the reason some of our pictures are often disappointing. Backgrounds may be cluttered with objects we do not remember, our subjects are smaller in the frame or less striking than we recall or the entire scene may lack significance and life. Good photographs are seldom created by chance.

To make the most of any subject, you must understand the basic principles of composition. How are photographic composition skills developed? You look, you study, and you practice. There are no hard-and-fast rules to follow that ensure good composition in every photograph. However, principles and elements provide a means of achieving pleasing composition when applied properly.

NOTE: After reading through the various photographic compositions, check out the [Navy.mil photo galleries](http://Navy.mil/photo_galleries) and see if you can identify the many techniques used.

Center of Interest

Each picture should have only one principal idea, topic or *center of interest* to which the viewer's eyes are attracted. Subordinate elements within the picture must support and focus attention on the principal feature so it alone is emphasized. The center of interest may be a single object or numerous ones arranged so attention is directed to one definite area. A photographer usually has at his or her disposal many factors or elements that can be used and arranged within the picture area to draw or direct attention to the primary idea of the picture. Some of these elements are lines, shapes, human figures, tone, and texture. Human figures attract attention more strongly than almost any other subject matter and unless they are the main object of the photograph should probably be kept out of the picture.

Subject Placement

In photographic composition, two general rules are used to determine the best location for the center of interest – *the rule of thirds* (see figure 3-4) and *dynamic symmetry*. In the rule of thirds, the intersection of lines that divide the picture area into thirds are good locations for the center of interest in most photographs. Notice we said **THE** center of interest. Remember, have only one center of interest to a image. The principle of dynamic symmetry is a similar idea. A good location for the center of interest is found by drawing or imagining a diagonal line from one corner to an opposite corner. Then, draw a second line perpendicular to the first from a third corner. The intersections of the lines are the location for the center of interest.

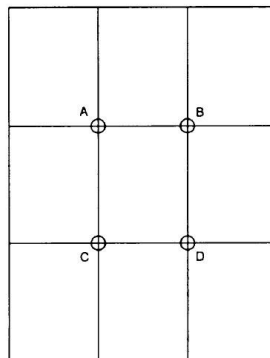


Figure 3-4, Rule of Thirds.

Simplicity

Simplicity is the key. The simpler and more direct a photo is, the clearer and stronger the resulting statement. When work toward simplicity, select a subject that lends itself to a simple arrangement or select different viewpoints or camera angles. Only after considering all possibilities should you take the photograph. Bottom line is to tell the story, while ensuring you have just the right amount of information to convey one single idea.

VIEWPOINT and CAMERA ANGLE

The proper viewpoint or camera angle is an important factor in good composition. Repositioning your subject within the viewfinder frame and changing the camera viewpoint or camera angle are two simple ways of controlling composition. The terms *viewpoint* and *camera angle* are often used in conjunction with one another and sometimes used interchangeably. They can also have

different meanings depending on how they are applied. Viewpoint is the camera position in relationship to the subject.

Low Viewpoint/ Low Camera Angle

A low camera angle is achieved when the camera angle is located below the point of primary interest and pointed upward. Low angles tend to lend strength and dominance to a subject and dramatize the subject. Low-angle shots are used when dramatic impact is desired. This type of shot is very useful for separating the subject from the background, for eliminating unwanted foreground and background, and for creating the illusion of greater size and speed.

High Viewpoint/High Camera Angle

High viewpoints and high camera angles help orient the viewer, because they show relationships among all elements within the picture area and produce a psychological effect by minimizing the apparent strength or size of the subject.

BALANCE

Balance in photographic composition is a process of making pictures appear harmonious. The subject placement within the picture area is the factor that must be carefully considered. Composition is kept in balance by two different methods:

Symmetrical (Formal) Balance

Symmetrical (formal) balance in a photograph is achieved when elements on both sides of the picture are of equal weight. The idea of formal balance can be related to a seesaw. When there are two equally weighted objects on the seesaw and they are equidistant from the pivot point, or fulcrum, the board will be in balance.

Asymmetrical (Informal) Balance

Asymmetrical (informal) balance is usually much more interesting than symmetrical balance. In asymmetrical balance the imaginary central pivot point is still presumed to be present. However, instead of mirror images on each side of the picture area, the subject elements are notably different in size, shape, weight, tone and placement. Asymmetrical balance is introduced when the presumed weight of two or more lighter objects is equalized by a single heavier object placed on the other side of the imaginary pivot.

Other Aspects of Balance

- An object far from the center of the picture seems to have more weight than one near the center
- Objects in the upperpart of a picture seem heavier than objects of the same size in the lower part of a picture
- Isolation seems to increase the weight of an object
- Intensely interesting objects seem to have more compositional weight
- Regular shapes seem to have more weight than irregular shapes

- Elements on the right side of an asymmetrical picture appear to have more weight than elements of the same size on the left side of the picture
- The directions in which figures, lines, and shapes appear to be moving within the picture area are important to balance. For example, a person may be walking in a direction, or his eyes may be looking in a direction, or the shape of some element creates a feeling of movement. When the feeling of direction is present within a scene, it tends to upset the balance if judged on the size of the subject alone.

SHAPES and LINES

Shapes and lines are important elements in photographic composition. When properly used, shapes and lines can create a desired effect.

Shape

Shape is a two-dimensional element basic to photo composition and is usually the first means by which a viewer identifies an object within the picture. *Form* is the three-dimensional equivalent of shape. The greatest emphasis of shape is achieved when the shape is silhouetted, thus eliminating other qualities of the shape, such as texture and roundness, or the illusion of the third dimension.

Lines

Lines unify composition by directing the viewer's eyes and attention to the main point of the picture or lead the eyes from one part of the picture to another. Lines that lead the eye or direct attention are referred to as *leading lines*. Vertical, diagonal, horizontal, and curved lines create different moods. Vertical lines communicate a sense of strength, rigidity, power, and solidarity to the viewer. Horizontal lines represent peace, tranquility and quietness. Diagonal lines represent movement, action and speed. Curved lines present a sense of grace, smoothness and dignity to a photograph. The most common curved line is the "S" curve.

Pattern

Creating images around repeating elements or patterns provides picture unity and structure. Pattern repetition creates rhythm that the eyes enjoy following repeated lines, tone, and color can also provide unity to your composition and combinations of these create interesting pictures. Triangles, squares, and circles are the basic shapes to look for in a pattern. Triangles and squares are usually static but can be placed to create a tension-filled, dynamic effect. Circles and curves are pleasing pattern shapes.

Volume

When photographing most subjects, you face the problem of how to symbolize three-dimensional objects in a two-dimensional picture. The solution becomes simple when a distinction is made between the two different ways three-dimensional objects appear: as positive or occupied space (volume) or as negative or unoccupied space. Positive space is where shapes and forms exist; negative space is the empty space around shapes and forms. An area of a photo absent of shapes and forms is negative space. It serves to balance the area. Areas of a picture that contain "nothing" are important visual elements that provide balance in an image.

Lighting

By controlling light and directing it where you want it, you can subdue objects or distracting elements in the scene to give more emphasis to the main point of interest. Light and shadows can be used in composition to create mood, to draw attention to an area, to modify or distort shape, or to bring out form and texture in the subject.

Texture

Texture helps to emphasize the features and details in a photograph. By capturing the texture of objects in the photograph, you create form. For example, when people observe a soft, furry object or a smooth, shining surface, they have a strong urge to touch it. Texture gives realism and character to a picture and may, in itself, be the subject of a photo. When texture is used as a subordinate element within the picture, it lends strength to the main idea. Just a little different lighting or a slight change in camera position may improve the rendering of texture in a picture.

Tone

Tone is probably the most intangible element of composition. Tone may consist of shadings from white-to-gray-to-black, or it may consist of darks against lights with little or no grays. The interaction of light against dark shades in varying degrees helps to set the mood of a composition. A picture consisting of dark or somber shades conveys mystery, intrigue, or sadness. When the tones are mostly light and airy, the picture portrays lightness, joy, or airiness.

Contrast

When we speak of contrast as it relates to composition, we are referring to both tonal contrast and color contrast. Tonal contrast is simply the difference between the light and dark areas of a photograph. Color contrast is the perceived difference in a color when surrounded by another color.

Framing

Framing is another technique photographers use to direct the viewer's attention to the primary subject of a picture. An element used as a frame should not draw attention to itself. Ideally, the frame should relate to the theme of the picture. For example, a line of aircraft parked on the flight line framed by the wing and prop of another aircraft.

Foreground

A distracting or unnecessary foreground ruins a large percentage of otherwise good images. An undesirable foreground can be eliminated by moving in closer to the subject, by making pictures with a longer than standard focal-length lens, or by changing viewpoint or camera angle. No object in the foreground should ever be so prominent that it distracts from the subject.

Background

The background is almost as important an element in good composition as the camera angle. Be particularly observant of the background to see that it contains nothing distracting.

PERSPECTIVE

Perspective refers to the relationship of imaged objects in a photograph. This includes their relative positions and sizes and the space between them. In other words, perspective in the composition of a photograph is the way real three-dimensional objects are pictured in a photograph that has a two-dimensional plane. In photography, perspective is another illusion you use to produce photographs of quality composition. When you are creating photos, the camera always creates perspective. When you know the principles of perspective and skillfully apply them, the photographs you produce show a good rendition of the subject's form and shape. The viewer is given the sensation of volume, space, depth and distance.

Linear Perspective

The human eye judges distance by the way elements within a scene diminish in size, and the angle at which lines and planes converge. This is called *linear perspective*. The use of different focal-length lenses in combination with different lens-to-subject distances helps you alter linear perspective in your pictures. When the focal length of the lens is changed but the lens-to-subject distance remains unchanged, there is a change in the image size of the objects, but no change in perspective. On the other hand, when the lens-to-subject distance and lens focal length are both changed, the relationship between objects is altered and perspective is changed.

By using the right combination of camera-to-subject distance and lens focal length, a photographer can create a picture that looks deep or shallow. This feeling of depth or shallowness is only an illusion, but it is an important compositional factor. Using a short-focal-length lens from a close camera-to-subject distance, or viewpoint, produces a picture with greater depth (not to be confused with depth of field) than would be produced with a standard lens. Conversely, using a long-focal-length lens from a more distant viewpoint produces a picture with less apparent depth.

Rectilinear Perspective

Most lenses produce rectilinear perspective typical of what the human eye sees. This is to say that lines that are straight in the subject are reproduced straight in the picture. Fisheye lenses and the lenses used on panoramic cameras produce a false perspective. With a fisheye lens, straight lines in the subject are imaged as curved lines toward the edges of the picture. A panoramic lens produces panoramic or cylindrical perspective.

Vanishing Point Perspective

In vision, lines that are parallel to each other give the sensation of meeting at vanishing points. When parallel lines, either horizontal or vertical, are *perpendicular* to the lens axis, the vanishing points are assumed to be at infinity.

Height Perspective

The higher up in the ground area of the picture (up to the horizon) that the base of an object is located, the further away it seems from the viewpoint and the greater its height perspective.

Overlap Perspective

When subjects within a photo are on about the same line of sight, those objects closer to the camera viewpoint overlap more distant objects and partially hide them.

Dwindling-Size Perspective

The farther away an object is from the viewpoint, the smaller it appears; therefore, when subjects of familiar size are included in a photograph, they help to establish the scale of the picture. Scale helps the viewer determine or visualize the actual size or relative size of the objects in the picture.

CONTROLLED/UNCONTROLLED SUBJECTS

Shooting photos typically falls into one of two categories – controlled or uncontrolled action. As the name implies, in controlled action you control all aspects of the shoot, and most aspects, if not all, are predictable. When you aren't the manager of the action or if the shot isn't predictable, you are shooting uncontrolled action.

CONTROLLED ACTION

One of the most difficult tasks of photographing controlled subjects, such as people, is directing them. Since you are the only person who can see what the picture will look like before it is taken, you must take responsibility for composition.

In Chapter 2, we discussed portrait photography, which is one form of controlled-action shooting. The paragraphs below feature further examples and techniques when shooting controlled action.

Individual Shots

As an MC you will shoot photos of individuals for a multitude of projects, such as news releases, familygrams and cruise books. Therefore, you should be familiar with the methods used to direct photographic subjects.

One way to make directing and posing easier is to give your subject an object to handle. Do not tell him to "just stand there," as though in a vacuum, with nothing to do. Men and women can hold a book, binoculars or a tool used in their work. Children will do fine with a doll or model airplane.

Another strategy is to give your subject something to lean against or sit upon. Use a chair, stool, post or tree.

If you use props in your individual photographs, make sure you do your homework. For instance, do not photograph a gunner's mate holding a three-inch shell in front of a 5-inch gun mount.

Also, pay attention to the eyes. Eyes are very important when photographing people. When the subject's eyes look straight into the camera, a strong and immediate impact is created that attracts the viewer's interest. When the eyes are directed away from the camera, the effect is less explicit and has more of an ambiguous quality. Decide on the best approach for your photograph and direct your subject appropriately.

Finally, you must be in charge of the situation. This cannot be emphasized enough. It is your responsibility as the photographer to direct the scene – tell the subject what to do, how to do it and when to do it. This applies to an admiral as well as a seaman. Just remember your military bearing and professionalism.

Many people are nervous and self-conscious in front of a camera. They try to look their best and, in doing so, often present a stilted expression or pose. It is your job to give directions regarding the pose. It is also your responsibility to make sure that coat sleeves are pulled down and wrinkles are smoothed. Make sure the subject's hat is set at the proper angle. If you ignore these potential problem areas, your photograph will ultimately suffer. Time will be wasted for yourself and for your subject.

Group Shots

Occasionally you will receive an assignment to photograph a group, which adds a degree of organizational difficulty. When shooting group shots, you should consider each person individually, but consider each individual as he relates to the entire group. Every precaution should be taken to ensure each person is shown clearly and interest is not drawn to one person by some awkward pose or expression.

Formal Group Shot

A formal group shot is one in which several people, uniformly dressed for the occasion, are seated or standing in as nearly the same pose as possible. Each member is placed in approximately the same relative position so that attention is not drawn to one person.

Customarily, in a formal group, the highest-ranking person is located in the center of the first row and other members of the group arranged alternately to the right and left, according to grade. When all members of the group are the same grade, arrange them according to height, with tall individuals either in the center or at the ends, or occupying the rear rank.

A formal group of about five people can be composed to fill the picture area very nicely. When six to 10 people are being photographed in a group, arrange them in two rows. For larger formal groups, arrange the people in as many rows as necessary to fill the frame. Avoid stringing out one long, narrow line of people across the frame.

When a large group is formed into three or more rows, you must devise some method to prevent the rear rows from being blocked from view. Furthermore, to compose the picture properly and fill it from top to bottom, you should have each row higher than the preceding one. One method is to arrange the group on the steps of a building, bleachers or terrace, so each row is higher than the preceding one. On level ground the first row can be seated, the second standing, and the third standing on benches. Another method which you can use in combination with the first is to elevate the camera so that it is pointing down at an angle on the group. This method is useful as an aid in composing and filling the picture area. A higher camera angle can be useful in eliminating an undesirable background. Remember, to get maximum depth of field, you should focus the camera one third of the way into the group. For example, if there are nine rows, focus the camera on the third row.

Informal Group Shot

The informal group is intended to depict some action or tell a story about the individuals. Although the position and pose of each member is carefully planned, the results must appear casual and realistic. Members may be seated, kneeling or standing in a variety of positions and do not have to look in the same direction.

One of the most important factors in group photography is arranging people to obtain the best possible composition. Regardless of the number of people in a group, they should be situated to fill the picture and provide the largest possible image size of each person. One exception to this general

rule is when the importance of the background is equal to or greater than the group itself. This often occurs with an informal group when the picture is actually intended to emphasize some object or piece of equipment, rather than the individuals. In this case, locate the camera for the best composition of the object; then arrange the people in the picture to enhance the story being told.

As with individual pictures, you must stay in charge. If you relinquish control, you will have a hard time getting everyone to look at the camera at the same time. Talk to the group and give them your instructions. Make sure your equipment is ready so you do not waste time and lose the group's attention.

ENVIRONMENTAL PORTRAITS

An environmental portrait is a portrait shot in someone's usual environment, such as in the home or workplace, highlighting the person's life and surroundings. When on such an assignment, place your subject in a setting that tells part her story. The background should be simple and non-distracting to the subject but compliment the essence of who you are photographing. For example, if you are aboard an aircraft carrier and want to shoot an environmental portrait of the air boss, shoot the photo in the tower, by the tower or by his aircraft. The environment adds story depth to the photo.

Candid Photography

Common perception within photography is that a candid photo is one that is not set up or the subject does not know is being taken. Photographers have learned, however, that candid techniques can be used just as effectively to make pictures of people they know, even when the people know they are being photographed. The key to a successful candid photograph is for the photographer to keep a low profile (not sneaky).

A candid shot is a candid shot, whether it is of the admiral at a news conference or a "genuine candid" of a Sailor you just happen to see out and about doing his job. The technique is the same in both cases. All that is important is for the pictures not to appear posed. The subjects of candid photographs are not posing or acting; they are simply being themselves and behaving as though the photographer is not there.

The compactness of today's digital cameras make them ideal for candid photography. SLRs with their fast, interchangeable lenses, TTL metering, and large film capacities make candid photography one of the most rewarding areas of our profession. A long focal-length lens is also a good choice for this type of photography. The long lens lets you maintain distance between yourself and the subject, and, if people are aware of your presence, they will not be as self-conscious. If you are taking "real" candid shots, a long lens is a necessity.

When people know you are shooting them, get them to occupy themselves, so they will "forget" a camera watching them. Only then, can you get a truly candid picture. When the person notices what you are doing, ask their permission before you shoot. People usually will not object, particularly if you are polite and work quickly. Stay casual and relaxed. People soon get used to seeing you with the camera, and you will be on your way to some good candid pictures.

Preset your focus and exposure whenever possible so you can respond quickly and avoid attracting attention to the camera. Estimate the likely subject distance, set it on the lens focus scale, and stop down for greater depth of field. Camera handling must be fast and smooth. Time does not allow for fumbling with camera controls, flash equipment, exposure meters, and film loading.

Keep alert, keep looking and keep shooting

Do not try to control the people you are shooting. Let them assume a natural "pose" in an appropriate setting. You may tell them, "Please do not look at the camera." Try to capture the details of their environment in your pictures. This adds interest to what they are doing. And finally, make your candid pictures reflect the people and events around you.

There are situations when you do not have the time for a candid approach, or it just is not feasible. You can still produce interesting people pictures by using the "frame approach." The "frame approach" simply means posing your subject in a situation or environment that is most meaningful to the subject or assignment. (See environmental shots above.)

UNCONTROLLED ACTION

When you photograph people in action, such as in sports or at work, the name of the game is anticipation, staying alert, and expecting the unexpected. Covering action events becomes an exercise in "guesstimating" where the action will take place and firing the shutter at the right moment. A good action photographer relies on his knowledge of the event taking place. Even if you cannot learn the game, a photographer that understands the principles of shooting people in action can do a good job by following a few simple rules: Anticipate the action. Watch for the unexpected moment. Know the mechanical functions of your camera equipment. Practice aiming, focusing, and shooting until they become reflex actions. This leaves your mind free to concentrate on the event. Learn something about the action you plan to photograph.

The best images of people usually have action, implied or apparent. The action should be appropriate to the subject of the picture. By understanding the importance of action in a photograph and the abundance of action available everywhere, you will soon become proficient at recognizing and picturing it. The blur technique has become popular for advertising and illustration use. Panning the camera with the action of a moving subject keeps the subject fairly sharp while blurring the background in a horizontal sweep, and this gives the feeling of action. A similar technique is to focus on the background instead of panning. This will keep the background sharp but show movement in the subject. A slow shutter speed is needed for both techniques.

Accident Scenes

Shooting photographs in the above-mentioned controlled- and uncontrolled-action settings focus on telling the Navy story and promoting the everyday lives of Navy personnel. However, as an MC, you may find yourself in a billet where your job is to shoot accident scenes.

If you are called to an accident scene, remember that current Navy policy specifies that if an accident or incident occurs, the surviving crew members (if physically able to do so) or the first military personnel arriving at the scene of accident must take charge until relieved by proper authority. Therefore, at the scene of the accident, you will be working for the officer in charge (OIC). You report to and receive your orders from the OIC. In many cases, it may be possible for you to accompany the crash rescue party to the accident. The sooner an experienced and qualified photographer can get to the scene of an accident, the better the possibilities of acquiring more valuable photographic evidence. You should commence taking pictures immediately upon arrival. Photographs made before extensive fire damage can reveal information that might otherwise be lost.

Safety of personnel involved is of primary concern in every accident. Rescue operations and removal of occupants from the aircraft, per se, should be among your first photographs. When medical treatment is being given to survivors of the accident, photograph it not only for documenting

the treatment but for the purpose of isolating factual information on human failure. Casualties should also be photographed in the positions they occupy when you arrive on the scene. Photographs of the dead should be made to show the location of the wreckage and the position of each body in relation to it.

You should be advised of any classified material involved, and it should be either covered or removed before photographs are made unless it is important to the accident investigation. This is a situation where close liaison with the OIC is necessary. News reporters may gather at the scene and because you, as a photographer, have something in common with them, they will naturally seek you out. Do not attempt to tell a reporter what to write. Do not make a statement, express an opinion, or provide information about the accident. You are there to document the situation only. Other MCs and PAOs will be dispatched to the scene if necessary to liaison with the media.

Equipment

After learning the nature of your photographic assignment — controlled or uncontrolled — and making a complete analysis of the assignment, you must ensure you have the proper equipment to complete the job. The variety of photographic equipment available and suited for location assignments is extremely broad; for example, the assignment may require the use of a 35mm, digital SLR, or video camera (videography will be discussed in a subsequent chapter). The lighting equipment you choose may range from a small, compact electronic flash unit to a complex array of lighting equipment and reflectors. Exposure meters, color temperature meters, tripods, and interchangeable lenses are just a few of the other accessories you may need on a location assignment.

Be prepared! At one time or another we have all heard this familiar quotation. But have you ever thought what this could mean to your assignment? For want of a gizmo, a photograph was lost; for want of a photograph, an assignment was ruined; and for want of an assignment, your reputation as a photographer was destroyed. No, we are not really concerned with gizmos here. What we are concerned with is your equipment. Do you have everything you need when you get to your assignment and does it work? Nearly all photographic equipment has one or more critical components. The failure or loss of which may put a vital piece of gear out of operation. With cameras, one of these items is the battery, because it may power both the meter and the shutter. Check the battery before you leave the shop, and **ALWAYS** carry a spare. You have a super deluxe all-powerful electronic flash unit that can light up the entire hangar deck in the wink of an eye. Or can it? Did you check it out and was it working before you left the work center? Did you remember the power cord and an extra sync cord? Speaking of synchronization did you make sure the flash was in sync with the camera shutter? Or was the shutter even working? What about the camera lens—is it clean, does it focus correctly? The diaphragm ... is it working?

In the studio, a minor failure usually only causes embarrassment and gives the impression of unprofessionalism. You can usually get a spare camera, lights and tripod into service. But when you are out on location, you are limited in what you can take with you; therefore, it is important that **ALL** your equipment be thoroughly tested and operating correctly **BEFORE** you leave the work center.

SUMMARY

In this chapter, you built upon the theories of light and color found in Chapter 2 and the theories and practices you learned in the public affairs module. You have now added photography to your MC toolbox. From here, we move into videography and discuss your role in electronic

newsgathering. Putting together all the pieces to the MC puzzle will go a long way in ensuring you have a successful career in the field.

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CHAPTER 4

VIDEOGRAPHY

Learning Objectives: Upon completing this chapter, you should be able to do the following:

- Demonstrate center of interest.
 - Demonstrate image placement.
 - Establish visual perspective (aerial and linear.)
 - Demonstrate pacing and timing.
 - Identify principles of the 180-degree rule (action axis).
 - Achieve overlapping action.
 - Record cut-ins and cutaways.
 - Achieve changes in screen direction.
-

INTRODUCTION

In today's visual society, video has become one the most important tools in the PA/VI community's toolbox. And, MCs are expected to do a lot more than shoot simple home videos. You have the important responsibility of visually telling the story of each Soldier, Sailor, Airman and Marine in the fleet or field, and you must be able to tell that story in a way these men and women deserve. This is not a task you should take lightly.

Unlike some of the older arts that take years of training to produce an acceptable product, anyone can quickly learn how to capture video. However, video techniques must be mastered before you can become an accomplished videographer. Mastery of the fundamentals is the foundation upon which you will build your professional skills as an MC. The important story you're trying to tell depends upon this knowledge. And, while the technology may change, knowing your equipment and the basics of good shooting and editing remain the same. This chapter will familiarize you with the basics of a video camera, the types you will use to do your job, and the practice of using them.

CAMERA OPERATIONS

In order to shoot the best video, under any conditions, you must have an understanding of how to use the equipment you're given. Today, videography is characterized by a rapid growth in the development of technology and ideas. Each year, millions of videos are captured and an astonishing array of new cameras and imaging systems enter the market. One of the great attractions of the video field is the ease with which basic skills can be learned.

Most professional cameras use an optical prism block directly behind the lens. This prism filters the image into the three primary colors – red, green and blue – and directs each color into a solid state (silicon resin) imaging device to translate the optical image into a video signal. These devices, either a charge-coupled device (CCD) or active pixel sensor (CMOS image sensor) are

mounted to the face of the prism. Some high-end consumer cameras also do this, producing a higher-resolution image, with better color fidelity than is normally possible with just a single video pickup.

STUDIO CAMERAS

The studio camera is the backbone of the television industry. It is mounted on a dolly pedestal so the camera operator may wheel it to different locations with relative ease during shot changes.

Television is the process of converting reflected light rays from a subject or scene into electrical impulses and reproducing these impulses at a distant receiver. Television technicians monitor and adjust the video levels of the studio camera with the camera control unit (CCU), usually located in the control room. The CCU consists of a waveform monitor (an oscilloscope that displays a video signal graphically), television monitor and shading control.

Studio cameras are expensive, ranging in price from under \$5,000 to more than \$100,000. However, the more expensive cameras deliver high-quality images in a variety of production conditions. Initial models used analog technology, but are now obsolete, replaced by digital models. Studio cameras are light and small enough to be taken off the pedestal and the lens changed to a smaller size to be used on a cameraman's shoulder, but they still have no recorder of their own and are cable-bound. Cameras can be mounted on a tripod, a dolly or a crane, thus making the cameras much more versatile than previous generations of studio cameras.



Figure 4-1, Electronic newsgathering camera.

ENG and EFP CAMERAS

ENG (electronic newsgathering) video cameras, see figure 4-1, were originally for use by news camera operators. However, these cameras have become the dominant style of professional video camera for most uses in the Navy. An ENG camera is similar to the smaller consumer camcorder, but with some notable differences:

- ENG cameras are larger and heavier, and usually supported by a shoulder stock on the cameraman's shoulder, taking the weight off of the hand, which frees it up to operate the lens zoom control. The weight of the camera also helps dampen small movements
- Three CCDs are used instead of one; one for each primary color
- ENG cameras have interchangeable lenses

- All settings, white balance, focus, and iris can be manually adjusted, and automatics can be completely disabled
- The lens is focused manually and directly, without intermediate servo controls. However the lens zoom and focus can be operated with remote controls in a studio configuration
- Professional connectors – BNC (Bayonet Neill-Concelman) for video and XLR for audio. There are at least two XLR audio inputs
- A complete timecode section is available, allowing time code presets; and multiple cameras can be time code-synchronized with a cable
- "Bars and tone" are available in-camera bars. Color bars provide an industry standard reference signal that simplifies the calibration of setting levels for cameras, monitors and recording equipment when duplicating and transmitting the picture. The color bars are SMPTE (Society of Motion Picture and Television Engineers)
- Recording is to a professional medium like some variant of BETACAM, DVCPRO, direct-to-disk recording or flash memory. If as in the latter two, it's a data recording, much higher data rates (or less compression) are used than in consumer devices
- The camera is mounted on tripods and other supports with a quick-release plate
- A rotating behind-the-lens filter wheel, for selecting 85A and neutral density (ND) filters
- Controls that need quick access are on hard physical switches, not in menu selections
- Gain select, white and black balance, color bar select, and record start controls are all in the same general place on the camera, irrespective of the camera manufacturer. Audio is adjustable manually, with easily accessed physical knobs. Changing the gain for audio and video levels can also affect picture contrast. An adjustment to gain will also increase the level of picture contrast.

VISUAL STORYTELLING BASICS

Videography is a visual art, and it follows many of the same composition basics as photography.

CENTER of INTEREST

Each shot should only have one principal idea, topic, or *center of interest* to which the audience's attention is directed. Two or more equally dominant figures, objects or actions in a single scene compete with one another for the viewer's attention, thus weakening the picture's effectiveness. Subordinate elements within the shot must support and focus attention on the principal feature so it alone is emphasized.

A shot without a dominant center of interest or one with more than one dominant center of interest is puzzling to a viewer. Subsequently, the viewer becomes confused and wonders what the shot is all about. We can prevent this confusion from occurring through the selective placement of our subjects within the scene.

The specific topic, idea or object to be portrayed must be set in your mind as you prepare to shoot a video. When there is nothing in the shot to attract attention to a particular area or object, the

eyes wander throughout the scene. The center of interest may be a single object or numerous ones arranged so attention is directed to one definite area

When the center of interest is a single object that fills most of the shot area or one that stands out boldly, such as a white sail against a background of dark water, attention is attracted immediately to it. As may be expected, not all subjects are as simple to arrange or as bold and impressive.

Image Placement

Although it's called the center of interest, you will rarely place subjects in the center of the frame. Doing so results in ineffective and uninteresting images. Placing the center of interest to one side (preferably the right, dominant side) strengthens the image and increases interest.

A simple method for placing the center of interest in a dominant position is to utilize the *rule of thirds*, (see figure 4-2) dividing the frame into three equal parts, vertically and horizontally. (*Sound familiar?*) The four points where these lines intersect are compositionally strong. Placing the center of interest at one of these areas is a good way to start composing a picture. Using only this method to compose however will produce predictable mechanically composed images. As a loose rule, though, this *rule of thirds* method helps prevent bisecting the picture.

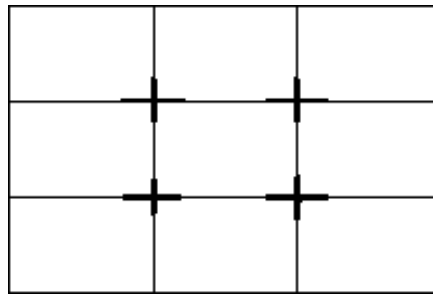


Figure 4-2, Rule of Thirds.

Image Quality

The single greatest influence on image quality is the brightness level. When the brightness level is too low, the recorded image looks grainy and flat. By familiarizing yourself with the brightness level of the subject, you can improve your recordings tremendously. In situations where the light level exceeds 100,000 lux, such as snow-covered scenes or a beach scene on a clear summer day, an ND filter is required. Under other daylight and bright, indoor conditions, the automatic iris is capable of adjusting to provide excellent results. However, in a low-light situation, such as spaces aboard ship, auxiliary lighting may be required to provide clear, sharp images. Another alternative, when available on your camcorder, is to increase gain. By increasing the gain, you increase the level of amplification of the video signal. This increases the contrast and provides a higher-quality recorded image.

In some situations, such as high-contrast scenes or backlit subjects, you must adjust the iris manually. Just like the aperture on a still camera, when the subject is backlit, open up the iris. When the subject is too bright, you must close down the iris.

FRAMING

Framing in videography is the positioning of subject matter within the frame. This definition appears to be very similar to the purpose of composition itself. Admittedly, the difference between the two is so slight that many people use the terms interchangeably. But, take a closer look. Framing is concerned with the positioning of the subject matter in the frame. Composition is concerned with the arrangement of all the pictorial elements of a scene, which includes more than just the subject itself. A scene can have the subject properly framed yet still be poorly composed. Generally, five factors affect framing: field of view, headroom, nose room, close-up and background (see figure 4-3).

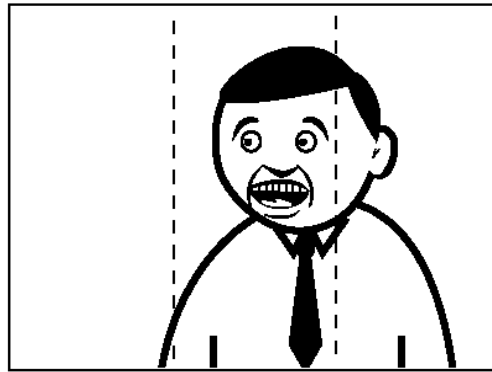


Figure 4-3, Framing

Field of View

Field of view refers to how wide or how close the subject appears relative to the camera. It is broken down into five steps: extreme long shot, long shot, medium shot, close-up and extreme close-up. When videotaping people, there are three additional ways of referring to these shots: bust shot, knee shot, two shot and three shot. Another shot commonly used in production is the over-the-shoulder shot.

Headroom

Headroom refers to the location of the subject's head within the frame. It is important to leave some space above your talent's head when composing shots, regardless of shot type. Additionally, it is important to remember that most professional video cameras lose approximately 10 percent of the image they see in their viewfinder. If a shot is composed extremely tight in the viewfinder, chances are you will actually be cutting off part of your subject when the video enters post-production (see figure 4-4).

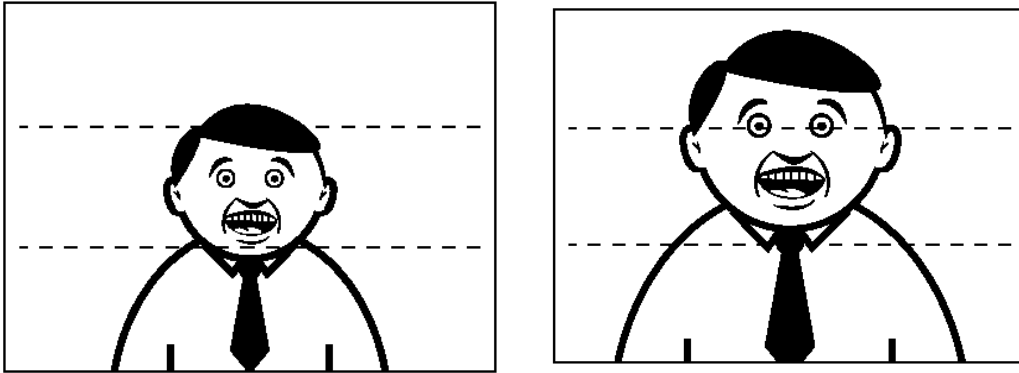


Figure 4-4, Proper (left) and Improper (right) use of headroom.

Nose room / Lead room

Nose room and lead room (see figure 4-5) refers to the fact that we must leave room in front of a person or object when they are pointing, looking or moving in a certain direction. It is especially important when showing a person as he or she moves, since it helps indicate the direction of travel. If there is no head room as a person moves, it appears as if they are bumping the edge of the frame.



Figure 4-5 – Proper (left) and Improper (right) use of nose room.

Close-ups

A close-up is a normally a full-face shot that fills the screen. When framing a close-up it is important that you take a few steps to eliminate potential confusion. Allow for headroom and show part of the subject's shoulders. When shooting tight close-ups, cut off the top of the subject's head still keeping part of the shoulder in the scene. This is a reference point for your audience.

Backgrounds

Returning after a shoot only to find that an unsightly object appears as if it is growing out of your subject's head is frustrating. Therefore, when you are shooting, always look behind your subject and main center of interest to check out your background. Look for trees, telephone poles,

streetlights, etc. Objects, such as these, in the background can ruin an otherwise perfect shot. It is also important to ensure the horizon is level when you are shooting.

Cut-off Lines

In addition to those five factors listed above, cut-off lines, or cut-off points must be considered when you are framing your shot. When photographing people, there are natural cut-off points that should be avoided – the eyes, nose, mouth, chin, neck, breasts, elbows, waist, knees and ankles. Framing a person so that any of these points sits at the very top or bottom of the screen makes it appear as if the subject's body stops at the edges of the screen. A shot framed in such a manner is very distracting for the audience.

The framing techniques listed here can also be employed when shooting still photographs and working with multimedia products (chapter 5).

VISUAL PERSPECTIVE/SCREEN DEPTH

Perspective is defined as the apparent sense of depth in a picture based on the relative distance and positions of subjects in the frame. It is the relationship of the images in your shot.

Increasing Perspective Results

To increase perspective effects and the apparent sense of depth within your frame, try the following techniques:

- Shoot from camera angles that provide the greatest number of planes or facets of the subject. Angle-on-angle shots, recorded so that the front, side, top and bottom are seen, create more depth than the same subject shot head-on. This is particularly true of large, static subjects such as machinery, buildings and signs
- Position subjects so that they partially overlap. This helps indicate spatial relationships and the audience can determine which objects are nearer by their known size
- Have subjects move between other subjects and objects so that they are partially covered at different times as they travel. Also, move the camera so that it shoots through or past foreground objects as it follows its subject
- Move the subject toward or away from the camera as opposed to straight across the screen. As the image size changes, perspective is increased.

Viewpoint and Camera Angle

The proper viewpoint or camera angle is an important factor in good composition. Repositioning your subject within the viewfinder frame and changing the camera viewpoint or camera angle are two simple ways of controlling composition. Photographing from a different viewpoint or camera angle can often add drama and excitement or even bring out an unusual aspect of a subject. Most of the subjects you photograph are three-dimensional and should be photographed from an angle (to the right or left of and/or from higher or lower than the subject) that allows the viewer to see more than one side of the subject. The photographer should study the subject from different sides and angles. Walk around the subject and look at it from all viewpoints. See it from elevated and low positions as well as from eye level to find the best composition. This greatly assists in composing the subject for the best balance and helps to select a background that compliments, not distracts from the subject.

The terms viewpoint and camera angle are often used in conjunction with one another and sometimes used interchangeably. They can also have different meanings depending on how they are applied.

- Viewpoint – the camera position in relationship to the subject
- Camera angle – the angle in which the camera lens is tilted.

A shot of Sailors marching, made from ground level with the camera held horizontal with reference to the ground, may be referred to as a low viewpoint, (or camera position); however, when this shot is taken again, again from ground level, but with the camera pointed up, it may be referred to as a low camera angle. Likewise, shooting from an elevated or high position, with the camera again held horizontal with reference to the ground, or even pointed straight down, can be referred to as a high viewpoint. If the camera is not held horizontal to the ground or pointed straight down, but pointed at some angle between horizontal and vertical, the camera position could be referred to as a high camera angle.

Eye-Level Shots

With the camera held horizontal, eye-level shots are usually made at a height of about 5 1/2 feet, the height from which the average adult sees, and with the camera horizontal. With the camera held at eye level but pointed up or down, the camera position changes and you have either a low or high camera angle, respectively.

Low Viewpoint and Low Camera Angle

Low viewpoints and low camera angles can add emphasis and interest to many ordinary photographs. A low viewpoint can be used to distort scale or add strength to a picture or to emphasize certain elements within the picture. A low camera angle is achieved when the camera angle is located below the point of primary interest and pointed upward. Low angles tend to lend strength and dominance to a subject and dramatize the subject. Low angle shots are used when dramatic impact is desired. This type of shot is very useful for separating the subject from the background, for eliminating unwanted foreground and background, and for creating the illusion of greater size and speed.

High Viewpoint and High Camera Angle

High viewpoints and high camera angles help orient the viewer, because they show relationships among all elements within the picture area and produce a psychological effect by minimizing the apparent strength or size of the subject.

Like framing, varying camera angles and viewpoints work with still photography.

BASIC SEQUENCE AND SHOT PROGRESSION

Basic Sequence

The basic sequence is the foundation for story continuity. It's a fancy term to accurately describe your video's form and function. Story continuity is the smooth, uninterrupted flow of visual and audio references, which, when assembled in order, tell a story.

Long Shot (LS)

The orderly flow of visual references starts with the long shot. The long shot introduces the scene to the audience and shows the entire area of action for a particular scene – location, people and objects. It is relative to the subject or the location. The subject must be large enough to be recognized, but small enough to establish the location. Compose the long shot loosely, so that people or objects can freely move about and indicate that there is action at the location. Although vital to establishing the scene, the long shot should be used sparingly in a television production. The small size of the TV screen makes it difficult to see everything that's included. In motion pictures, the long shot is used more frequently since the large proportions of the movie screen allow the audience to see all the detail (see figure 4-6).

Medium Shot (MS)

The next shot in the sequence is the medium shot. The medium shot introduces the subject or action by narrowing the center of interest for your audience, typically answering the "what" question of a scene. The medium shot bridges the long shot to the close-up. The subject is the same as in the long shot, now the camera is positioned closer to the subject so that it fills the frame. Like the long shot, the medium shot is composed a little looser so the subject can move if necessary. The medium shot is a transition between the long and close-up shot. It is an essential shot. Many new videographers believe that omitting the medium shot from the sequence achieves a stronger introduction to the main action. The omission shocks the viewer and sometimes is useful, but consistently ignoring the medium shot only results in confusing the audience. If the audience becomes confused, the story is lost (see figure 4-6).

Close-Up (CU)

The final shot is the close-up shot. The close-up is an important and powerful image that draws the audience into the story, focusing attention on the important subject or action. It is the culmination of the basic sequence and should not be used haphazardly. It may seem to be an obvious element to a visual story, but it took early moviemakers years to discover because it defines our subject or action. Selecting the wrong close-up will overlook the point you're trying to make with your story. Using too many close-ups will, once again, confuse the audience as to what's going on and what they should be paying attention to (see figure 4-6).



Figure 4-6, Long shot, medium shot and close-up shot (left to right).

Shot Timing

With each shot, it is imperative that you record extra footage – two to three seconds – before and after the main action. This gives editors “editing handles” before and after our edited clips to leave room for transitions. This will greatly reduce the time required during post-production, making the editing process easier.

Relativity

Relativity is the relationship between the shot you are currently recording, the shot you just recorded, and the shot you will record next. When we discuss shot relativity, we are referring to the distance within a shot that separates the long shot from the medium shot and the medium shot from the close-up. They are all relative to the subject matter being documented, not the location of the shoot (see figure 4-7).

Some believe the location of a shoot, such as indoors or outdoors dictates the distance within each shot. This is not the case. Simply because you have more shooting area outdoors doesn't always mean there will be greater distances between shots. For example, the distances between shots while shooting a parade might be greater than the distances between shots while shooting a picnic in a park. The picnic scene has less to establish than the parade. Also, simply because you have less shooting area indoors does not dictate that we will have smaller distances between shots. A mobility staging area for deploying personnel would have a greater area than that of a military member clearing a weapon. These are relative.

Subject matter dictates the relative distances between shots. For example, a physically larger subject, such as a change of command, will require composing the shot to incorporate all the pictorial elements into the frame. A physically smaller subject, such as a Sailor opening an MRE, does not require as much distance within the frame. Again, it is all relative to the subject matter. Relativity depends on how the camera operator chooses to emphasize the subject within the frame, maintaining story continuity. When we use proper shot relativity, what we see in the close-up will determine the emphasis of our story.



Figure 4-7, A DINFOS student reading his study guide here dictates the distance between the three shots above.

Static Screen Direction

Static screen direction refers to the direction the subject directs his eyes within the shot. Screen direction must be established and maintained even when the subject does not move about within the scene. The direction in which the subject looks should match throughout a series of

consecutive shots. The direction the subject faces can be different from the direction that the subject looks; therefore, the static screen direction is the direction in which the subject is looking. Subjects moving in one direction only in a series of video shots is said to be constant. To maintain static screen direction, the camera operator must remain on one side of the action axis.

Action Axis (180-degree rule)

The easiest method to establish and maintain screen direction is the use of the action axis, an imaginary line that travels across the scene. When there is only one subject in your shot, the line runs through this person and (roughly) perpendicular to the camera's line of sight. When there are two subjects, the line passes through both of them. As long as you keep your camera on the same side of this line, you can set up any shot you want and the subjects will always maintain the correct screen direction. Move across the action axis with your camera, and the screen direction will be wrong.

When the subject moves to a new location a new action axis is established using the *old* action axis as a reference. Some videographers think of the action axis as a left-to-right or right-to-left movement instead of an imaginary line. While essentially correct, it complicates shooting since the travel line must be re-examined for every new camera set-up. If the camera is *always* on the same side of the axis, *directional continuity is maintained*.

The only exception to the rule of recording on one side of the action axis is shooting a neutral shot. In this instance, the camera is placed on the action axis with the camera pointed directly toward the subject (see figure 4-8).

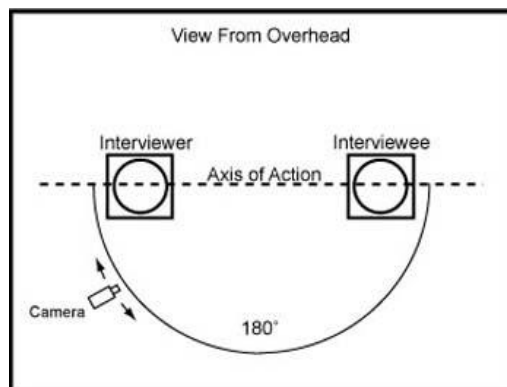


Figure 4-8, Example of moving camera along in relation to the action axis.

Overlapping Action

While watching a television show, have you ever wondered how the action can appear to be seamless from one shot to the next? The appearance of unbroken action from shot to shot can determine the success or failure of a production.

Successful continuity demands a smooth, uninterrupted flow of action from one shot to the next. Continuity is destroyed when there are sudden gaps in the movement between shots. The audience should never be aware of any change in the camera angle or image size. To achieve this smooth flow of images, you must apply the technique of overlapping action. The overlapped shots are later matched and assembled into a story by the editor.

When using a single camera, overlap is attained by *controlled action*, (a situation when all phases of the production can be thoroughly managed). If you do not have complete control over all phases of the video production, overlap may be achieved by using more than one camera. Overlapping action is the extension of activity, at the beginning and end of a scene. By overlapping action between shots you can vary image size, composition, and camera angles and still achieve perfect continuity (see figure 4-9).



Figure 4-9, Example of lack of attention to detail when creating overlapping action.

Factors Affecting Overlapping Action

Before recording overlapping action, consider these factors: the story; control of the action; the subject's action, body position and facial expressions; and dialogue.

If you are shooting from a script, the story is already written down for you. You just have to translate the written words into pictures. Sometimes though, the story is merely an idea and you make it up as you go. If you have a strong story concept, however, you have what you need to overlap the action with or without a script.

Before shooting, your subject must understand the action you desire. You must exercise complete control of your subject and the action. *Rehearsing the shot* is often necessary so the subject knows exactly what is expected from them, allowing the action to be repeated if required. If, however, a position is uncomfortable, or the action is unnatural, listen to the suggestions of the subject; they often have good ideas that will make your story better.

When shooting overlap, the subject's actions, body positions and facial expressions must exactly mirror the last few seconds of the previous scene. This is difficult if your subject isn't

completely aware of the objective of overlapping the action. Take the time to explain this to your talent beforehand and you'll find it easier for them to duplicate their actions during the shoot.

In addition to the action, the last few seconds of dialogue must be repeated. This may seem obvious, but videographers often forget to have the subject repeat their last few lines. When the story is edited later this omission creates a jump in action.

Obtaining Overlapping Action

In a controlled-action situation, obtaining overlap with a single camera is relatively easy. You dictate when the recording begins and when it ends. Since you have command of the situation, you tell the subject to start and stop the action. If there is a problem, you can re-record the scene to your satisfaction.

During the recording, the subject performs the scene according to your direction. After you have finished recording you then compose the next shot. In this shot, the subject repeats the last few seconds of action (and dialogue) from the previous shot. Many novice videographers make the common mistake of having the subject repeat the whole action from the earlier shot. This is *wrong*. This is not overlapping the action; it is merely a re-hash of action with which the viewer is already familiar.

The correct method is to have the subject repeat a small bit from the former scene then move the story along with new action. The action in each shot must reach its natural point of termination. This allows the subject to have a reference for the next shot and the overlap appears to be unforced. The keys to achieving normal overlapping action are planning and rehearsal. Describe the desired action to your subject and let them do it a few times, without recording. Once the subject is comfortable with the scene, then shoot it.

How long should overlap be? Some editors are comfortable with only two to three seconds of overlap, while others want five to seven seconds. A good rule of thumb is to pick a point where there is a natural "pause" in movement or conversation. Overlap four to five seconds of the previous scene. This guarantees editorial options without wasting a lot of videotape.

Recording overlap in a situation when you have no control of the action (uncontrolled action) is far different from a controlled action shoot. It is more difficult, but *uncontrolled action* can be overlapped. In most cases you'll shoot overlap in an uncontrolled situation by having two or more cameras shoot the scene. The videographers must coordinate their roles and actions on the set.

By using different focal lengths and camera angles, the separate cameras record the same subject at the same time, obtaining overlapping action. This can be difficult, even under the best circumstances, but videographers who fully understand their individual roles should have no problem getting all the overlap they need. Care should be used when employing two or more cameras, however. Without planning, simple continuity errors, such as crossing the action axis, can ruin a project that you can't "do over."

When documenting an uncontrolled scene by yourself, it's still possible to obtain overlap. Look for action that is often repeated, such as in the firing of a weapon. The squeeze of the trigger, the ejection of spent shells, etc. These are things that you can shoot almost any time during the action. Try to anticipate what is going to happen. If you're *reacting* to what's going on, you're too late. When possible, find out as much information about the event *before* you start shooting. It is also important to record cut-ins and cutaways to cover major jumps in action. Changing your image size and camera angle also helps mask minor jumps that often occur during uncontrolled action.

Cut-ins and Cutaways

A story that grabs the audience's attention goes beyond the basic sequence. It includes shots that pull the viewer *into* the story in addition to shots that *divert* their attention from the inessential. You are still using the basic sequence, only now you are inserting additional shots to make the story more interesting. These shots, the cut-in and cutaway are critical in maintaining story continuity. Cut-ins and cutaways preserve continuity in five distinct ways:

1. Bridging time and distance
2. Diverting audience attention from jumps in action
3. Building interest or drama
4. Replacing hidden action
5. Covering changes in screen direction.

Bridging Time and Distance

"Omit the inessential." Unfortunately, this simple rule of videography is often ignored. The audience gets bored quickly when forced to watch scenes or shots that have no bearing on the outcome of the story. For this reason cut-ins and cutaways are used to bridge time.

If you documented the construction of a bunker, for example, it would be tiresome to see every sandbag being filled and placed around the pit. Instead, adding a cut-in of a sandbag being filled and a cutaway of the LPO supervising the working party ties the establishing shot of the initial construction to the re-establishing shot of the completed bunker. This greatly condenses the time needed to show this entire action.

Distance is also affected by cut-ins and cutaways. The audience doesn't need to see every step a subject takes moving from one location to another. By inserting a cut-in or cutaway to the sequence, you can omit shots that don't add to the story. Inserting cut-ins of truck tires rolling, and cutaways of exit signs with the names of towns into a sequence of a convoy traveling cross-country, helps the audience understand that a great distance has been covered.

You can *expand* time and distance by inserting additional cut-ins and cutaways. If you want to portray a long road run by a ship's crew, adding extra cut-ins of their feet moving and of the faces of the Sailors, leads the audience to believe that the journey took longer and covered a greater distance than it actually did.

Diverting Audience Attention from Jumps in Action

A jump in action could be anything that distracts the audience from your story: a chair that changes position from one shot to the next, a clock that reads 30 minutes later from the previous shot, or a person appearing in the scene who wasn't shown in the establishing shot. These jumps are not breaks in the story continuity, but breaks in the *visual* continuity. If the attention isn't diverted from a jump in action, the audience becomes distracted and confused.

The average person has difficulty remembering more than two scenes immediately preceding the scene currently viewed. A jump in action is most noticeable in the next scene. Inserting a cut-in or cutaway masks the jump, creating a smoothly flowing scene.

Building Interest or Drama

An otherwise dull story is energized by the skillful use of cut-ins and cutaways. Cut-ins of important actions or dialogue stimulates audience interest. Cutaways of secondary subjects and bystanders reacting to what is happening helps emphasize important actions. For example, in a story of a medical assistance visit to an isolated village, a series of cut-ins showing syringes being filled and children receiving inoculations increases the interest of the audience. Cutaways of villagers watching the corpsmen work emphasizes the action, helping the audience to understand the importance of the visit.

If the story requires a sense of drama or tension, cut-ins and cutaways provide the vehicle. A cut-in to the microphone and mouth of an air traffic controller as she speaks to a pilot and cutaways to firefighters waiting along the runway create a sense of drama as an aircraft makes an emergency landing.

Replacing Hidden Action

Action, which cannot be recorded for reasons beyond the control of the videographer, can be implied by cut-ins and cutaways. As a personnel specialist types information into a computer, a cut-in of fingers dancing on the keyboard or of the clerk doing the typing indicate that administrative work is in progress. A following cutaway shows a card emerging from the printer. A few seconds of cut-ins and cutaways clearly show the process of making an identification card. This same technique may be used on any subject that cannot be recorded because there is no image or for events too dangerous to allow a camera to be present.

Controlled Action

As the name implies, in controlled action you can control all aspects of a production. This includes actors, their actions, the set lighting, and sound recording, if any. You usually work from a well-developed script that includes all the details. If the actors speak, the dialogue is in the script. If the action is described by a narrator, the narration is in the script. If the film is silent, the titles appear in the script. Examples of controlled-action films include training films, some documentaries and historical records, and many publicity or recruiting films. Controlled action, motion-media productions are most often produced by personnel with specialized "C" school or university training. As a non-specialized MC, you will be faced with uncontrolled or semi-controlled action elements of a production or film.

Uncontrolled Action

In a controlled-action situation, everything is normally written in the form of a detailed shooting script. Predictable filming is performed and there are few crises, except the occasional human oversights and mechanical malfunctions. The foundation of uncontrolled-action videography is the basic shot sequence (LS, MS and CU). The other world of motion-video recording (uncontrolled action) is full of crises and surprises. Success primarily is due to good reflexes, accurate guesswork and quick thinking. Careful planning is not the most significant factor. Most of your motion-media assignments will be uncontrolled or semi-controlled action.

Your success as a maker of uncontrolled-action video depends on your knowledge of the capabilities and operation of video equipment. You must also possess a high level of technical skill. There is neither time nor opportunity for research or practice while doing this kind of assignment. You must be prepared in advance. News, sports, special events, and on site-coverage of ongoing activities make up the bulk of this type of assignment. Another class of uncontrolled action is the documentation

of events that follow a known course or pattern, such as parades and ceremonies. These are called semi-controlled, because you know in advance approximately what is going to happen, even though you cannot influence it for recording purposes. Both types of assignments are challenging, exciting, and usually welcomed by confident camerapersons. But, they can be "unfortunate experiences" for those not properly prepared to cope with them. Remember, when shooting video without a tripod, you should deeply inhale, and then partially exhale before shooting.

Uncontrolled and Semi-Controlled Actions

Obviously you cannot develop a specific, detailed plan for shooting uncontrolled or semi-controlled action. You must get as much information about the assignment as possible and in as far in advance as possible. This information helps to provide an estimate of requirements for equipment, supplies, scheduling of personnel, transportation, camera positions, lighting, and other technical details.

Whenever you are assigned to cover distinguished visitor (DV) arrivals, award presentations or special events, you should immediately contact the person or agency in charge of the project. This person is usually the PAO. The PAO can furnish you the full scope of your assignment and provide the following basic information:

- Name and rank or title of the person(s) involved
- Place and time of arrival
- Complete schedule of activities.

When possible, you should personally inspect the location and route of the proposed action (site survey). If this cannot be done, try to get drawings, maps, plans, or photographs of the area. Eyewitness descriptions or pictures of similar events also may be helpful. Ask questions about the location of the subject, the type and direction of movement, and the sequence of actions to be recorded.

With this information, you can draft a rough plan. By working closely with the project officer, you should be kept reasonably well informed and can arrange the shoot in a logical order. Be careful, however, not to "plan yourself into a trap." Expect last-minute changes in your plan, and, therefore, keep alternative plans in mind and ways they can be put into effect quickly. Next, determine shooting requirements and the number of cameras and people you need. Check probable camera locations for the long, medium, and close-up shots. Determine the amount of tape you require, and consider the possibility of some unplanned requirements. Determine whether you will need transportation and additional equipment.

For example, your shop has received the following assignment:

The CNO and his party are expected to arrive aboard your ship tomorrow. The flag requires complete photographic coverage of all official activities of the CNO and his party while on the ship. The division chief has assigned you to cover the motion media.

After you check with the officer in charge of the event, you find that the CNO and his party are expected to arrive by aircraft at 1 p.m. local time. The party consists of the CNO and three aides. The purpose of this visit is to inspect the ship and to present several awards. The CNO and his party plan to depart at 5 p.m. local the same day.

With this information you can now plan your shooting outline. In an event of this kind, you cannot expect to stage or control many shots.

The shooting outline not only serves as a "program" for planning the sequence of coverage, but it also provides a basis for determining camera placement (SEE PREVIOUS CHAPTERS), movement, and shot framing (SEE ABOVE).

MOVEMENT

Good video needs movement — movement in front of the camera, movement of the camera itself and movement of the picture itself (one picture replacing another). The movements necessary for good television are divided into the following three categories:

- Primary movements
- Secondary movements
- Tertiary movements.

Primary Movement

Movement in front of the camera, usually by the talent, is referred to as primary movement. Primary movement toward or away from the camera is stronger than lateral movement, thus creating more emphasis. Diagonal movement is the strongest and most dramatic type of primary movement. Exits and entrances are more impressive when they occur toward or away from the camera. Remember: you should always lead the lateral movement of the talent with your camera. The viewer wants to know where the subject is going, not where he has been.

Secondary Movement

Secondary movement refers solely to the movement of the camera and is normally done in production studios. Secondary movements follow primary movements or to change or adjust picture composition. You also may use them to emphasize or dramatize a certain portion of a production. The secondary movements you will become familiar with are as follows:

- Pan – A pan is horizontal movement of the camera on a stationary pedestal. It is used to follow the primary action. When panning you should avoid *dead space* between subjects. Do this by positioning the subjects diagonally instead of laterally. Prior to making a pan with a camera on a tripod, you should ensure the tripod and camera are level
- Tilt – Tilting is simply pointing the camera up or down. The reasons for tilting the camera are similar to those for panning. For example, the height of an object can be shown by gradually tilting up or on it or by tilting down on something. This builds suspense
- Dolly – A dolly is a piece of equipment that normally requires a small crew to operate. You can dolly-in to increase the size of an object gradually on the screen or dolly-out to decrease the size of the object on the screen. Likewise, dollying decreases or increases the field of view. A zoom lens can be used for the same purpose as a dolly.
- Zoom – A zoom lens can be used for the same purpose as a dolly. During a zoom, the camera does not move; therefore, perspective does not change as it does when using a dolly

- Truck – A truck is a piece of equipment that is basically a tripod with wheels. The camera is used to follow lateral subject movement or you could truck the camera along the objects. In either case, camera-to-subject distance does not change
- Pedestal – A pedestal is used to raise or lower the camera. Pedestalling can provide the audience with a view looking down on the subject or up at the subject. A pedestal may also be used to compensate for tall or short camerapersons or subjects.

Tertiary Movement

Tertiary movement results from a sequence of shots from two or more cameras. When two or more cameras are used, the director selects from a variety of shots to determine what shot will be telecast and at what time. When more than one camera is used, the director can easily emphasize, de-emphasize, or show action and reaction in rapid or slow succession.

Recording from a Moving Vehicle

Sometimes you may have to record from a moving vehicle, such as a truck or a boat. For this type of assignment, the problem of holding the camera steady becomes even more difficult. In this situation you should handhold the camera, because a tripod transmits vibrations and movements from the vehicle to the camera. Keep your weight on the balls of your feet, and keep your knees flexed so you can sway and bend as the vehicle rolls, pitches, or bounces. Watch the horizon in the viewfinder. A tilted or wobbly horizon is very detracting when being viewed. When shooting from moving vehicles you should use a short focal-length lens and a fast shutter speed.

Covering Changes in Screen Direction

Unexplained changes in screen direction also break the continuity of your story. Cut-ins and cutaways help cover these movements. To do this, the shot must have no screen direction of its own. In these neutral shots the subject moves directly toward or directly away from the camera.

Changes in Screen Direction

If a subject constantly moves in only one direction throughout a video, the audience becomes bored from the repetition and the movement is farcical. Your stories will often call for logical and reasonable changes in screen direction.

The first key to screen direction is that *any change in screen direction must be motivated*. The usual reasons for varying direction are to show a return to the starting point, to show the subject has moved to a new location that is in another direction, or to avoid physical obstacles in the path of the subject or videographer. Regardless of the technique you employ, the two key shots utilized when changing screen direction are medium shots and close-ups. There are four ways to change screen direction:

1. Show the change on screen
2. Use neutral shots
3. Use prominent landmarks
4. Use cut-ins and cutaways.

Show the Change on Screen

The simplest way to change screen direction is showing the change on screen. If the established screen direction is right-to-left, the subject moves in that direction, and then while the camera is still recording, the subject turns in the frame and moves along a new action axis traveling left-to-right.

Use Neutral Shots

Recording a neutral shot allows you to cross the old action axis and establish a new direction of travel. If you use a tail-away shot, follow with a head-on shot to tell the audience there is more to come, unless it is the end of the story. If you use a head-on shot, however, you don't need an additional neutral shot. The next shot can be on the other side of the old action axis.

Remember: *Neutral shots must be absolutely centered in your frame.*

Use Prominent Landmark

A more difficult and rarely used technique to change screen direction involves using a prominent landmark in the background to orient the audience. This approach takes some planning and is *limited to objects that can be immediately recognized*. The static screen direction and placement of a landmark, such as a statue or building, orients the audience to the changes in dynamic screen direction of the subject.

Use Cut-ins and Cutaways

Cut-ins and cutaways do not show the change in screen direction, they merely mask it. The cut-in and cutaway must be a neutral shot. Since the average person has difficulty remembering the two scenes immediately preceding the current scene, cut-ins and cutaways should be used in pairs in order to mask the change.

PACING and TIMING

Broadcast news reporters will tell you that in any story, pace is everything. This means that the viewer will lose interest if a story does not develop or is dull, boring or predictable. Simply put, when you watch a program, the pace either feels right, or it doesn't.

When capturing a story in the field or fleet, it is *content that dictates pace*. Is the action fast-paced? Is the story quiet and serene? These are questions that must be answered to understand and determine the pace of a story.

But shot length is only one element of pacing. The composition within sequences is just as important. A subject may seem to move slower or faster simply by moving the angle of the camera in relation to the action. Focal length, lens to subject distance and lens perspective all play a part in determining pace. If a long shot is of a subject running from left to right and the medium shot is of the same person running toward the camera, the pace of the person seems to be at two different speeds. So even if it's right, but it looks wrong, it *is wrong*.

Timing while videotaping concerns compressing real time into filmic time. In a briefing or documentary, an entire day's activities can be shown in a five-minute presentation. Planning shot sequences is the key, one shot ahead, your current shot, and one behind. In essence, video of the

President arriving at a naval air station may take 45 minutes from touch down to the time he climbs into a vehicle. But, that story can be told in a series of shots lasting no more than 45 seconds.

ADDITIONAL SHOTS

The basic sequence is the foundation of video storytelling; however, such storytelling is not limited to the three shots of this basic sequence. There are many variations of each that are used in addition to the basic sequence. Sometimes these additional shots are used instead of, or along with shots in the basic sequence. Three common shots are the extreme long shot, the full-figure shot, and the extreme close-up. Used properly, these shots can enhance your story by providing important information to the audience.

Extreme Long Shot (ELS)

The extreme long shot provides the audience with a distant view of an area. It establishes physical character or a distinctive atmosphere and always precedes the long shot in the basic sequence. It is best recorded from a high vantage point to provide more viewing area.

Full-Figure Shot (FFS)

The full-figure shot is a variation of the medium shot depicting the whole subject. It shows the subject from head to foot, containing very little headroom or footroom. It is often used in place of the traditional medium shot.

Extreme Close-up (ECU)

The extreme close-up often follows the close-up in the basic sequence. It magnifies the subject for detailed examination completely filling the screen. It is often used for dramatic emphasis or to show important details within a scene. A scene shot to the right of an edit control unit, showing someone's hands using the equipment is an example of an extreme close-up.

VARIATIONS OF THE BASIC SEQUENCE

You're now familiar with the shot sequencing and the various types of shots. Hopefully, you understand how the visual storyteller uses these shots and the sequence to piece a story together, shot by shot. While the basic sequence of long shot, medium shot, and close-up is the most common sequence used to tell a story, it is not by any means, the only one. There are numerous variations available, depending on the information you are trying to convey or the way you want the audience to react.

Extended Sequence

Adding the extreme long shot, full-figure shot and extreme close-up to your shot progression changes the basic sequence into the extended sequence. This new shot progression enriches the visual quality of your story and enhances audience attention. It is important to understand however, that you do not have to insert all additional shots to be considered an extended sequence. It can be only one, or a combination, if desired.

The extreme long shot, when added, impresses the audience with the huge scope of the scene. A large military base, vehicle convoy, or aircraft-parking ramp can be impressive opening shots to introduce a sequence. Such massive shots set the scene for what follows by putting your audience

in the proper mood and giving them the overall picture before introducing characters and establishing the story line.

Including more medium and full-figure shots improves your storytelling ability. These additional shots provide more information to help explain complicated ideas. For instance, in a sequence of a division officer talking to his shop, the first medium shot shows the face of the captain and the back of the head and shoulders of the Sailors. The second medium shot then shows the face of the LCPO as he acknowledges the DIVO's words and the back of the head/shoulders of the DIVO.

You can also emphasize or show tiny details by using the extreme close-up. When placed in the sequence extreme close-ups help the audience understand complex and minute details certain jobs require.

Reverse Sequence

Sometimes it is desirable to startle, confuse or withhold information from the audience. When this is the case, a close-up may be used as a dramatic tool for opening a sequence. Then the sequence continues backward to the long shot. This is called reverse sequencing. Let's start with a close-up of a set of eyes, move to a medium shot of a Navy SEAL in camo paint, then out to a long shot showing this Sailor in full combat gear, camouflaging himself in the jungle. That simple reversal of the basic sequence immediately draws our viewer into the story, making them want to see more.

A properly planned, effectively recorded reverse sequence will enhance your story, as long as you don't overuse it. Using too many reverse sequences not only bores the audience, but the punch of your story will get lost. A good rule of thumb is to use the reverse sequence only after you've determined the action requires immediate attention.

VIDEO EDITING

Non-linear editing is an amazing process. Gone are the days where we made linear edits. Linear meant that everything was laid out in sequence and no changes could be made to an earlier time in that sequence without affecting the rest of that sequence. With non-linear editing you can move, cut or add media at any point of the sequence without messing up the rest of it. Knowing how to edit is an important tool for MCs to have in their toolbox. You might be able to shoot great video, but if you don't know how to put it all together, your job isn't complete. The orderly structuring of facts, ideas and abstract suggestions in any visual-editing process is continuity. This section will give you the basic fundamentals you'll need to become a skilled basic editor and help you achieve your final goal – having a product that tells an effective memorable story.

EDITING HARDWARE and SOFTWARE

Let's first take a tour of the hardware components that make up a non-linear editing system. Regardless of the particular system you use, the basic components are the same.

- Central processing unit – the computer portion of the system that contains computer-related hardware and software
- Monitors – one flat-panel or two 16:9- or 4:3-aspect ratio monitors used for viewing
- DVCam Deck — used to input and output video
- Speakers or headphones – for listening

- Keyboard and mouse – for controlling the editing software.

PROJECT HIEARCHY

Project

The project is at the top of the project hierarchy. It is a non-linear editing system's device for organizing your work. The project contains all files associated with your project. When you create a new project, navigate to the drive where you will save your project and name your project. Everything you do in this project will be saved in this location. The project folder contains all files of your project like the video, audio, graphics and project settings.

Bin

A bin is the electronic equivalent of a physical bin in which film is stored for retrieval during editing. The bin is simply a file containing clips and sequences and provides a simple way to organize a group of like elements. Bins are stored in the project folder and organize your assets, such as video clips, audio files, still images, graphics and sequences. Each listed media asset is a link. The files themselves remain in their file folders, while the assts are stored in bins. Bins behave like folders as a way to organize your assets visually within an editing program.

Clip

A clip is stored in a bin and contains information about the source of the material – tape name, start and end time codes, and so on – and the way you want the information to be captured.

Sequence

A series of shots or scenes that includes a beginning, middle and end (like a chapter in a book). A short movie can contain a single sequence, or several sequences can be put together to create a longer movie.

A sequence is your edited program. You create a sequence by editing clips together. A sequence is stored in a bin and holds references to its clips. The internal drive is the storage device on the system. The drive works like desk drawers and contains folders and files for storing information including applications, projects and bins. The basic editing model for editing system is very simple. There are three steps to converting raw footage to master tape:

- Digitize or capture
- Edit
- Output.

Creating a sequence can be as simple as stringing together as series of shots with some narration or music or more complicated with multiple audio tracks, sound effects, dissolves, wipes or special effects.

Now that you have seen the basics of an editing system, you need to know how to get that great video you shot into your editing system or program of choice. All systems have some way of capturing or importing your media. It's very important to understand this tool and function because without it you can't actually accomplish anything.

Once capturing, or importing, is complete it's time to become familiar with your footage and begin to think of an outline of how you want your video to flow. The next phase in the editing process is to sub-clip all of your useable footage.

Sub-Clipping

The process of going through your media and making it into smaller, more manageable files is called sub-clipping. Organization of your files is very important, but sub-clipping also benefits you. Sub-clipping gives you the chance to become familiar with your footage. Knowing your footage inside and out is important and will help speed up the process when you go to actually put the video together. You will know what shots you have and what shots you don't.

Once you have all your video captured, organized and sub-clipped. It's time to produce your spot, prime cuts video or All Hands Update. The two basic editing techniques you'll use in video are *continuity editing* and *compilation editing*.

NOTE: The editing procedures and techniques in place at your command may differ from what is portrayed in this section.

Continuity Editing

Continuity editing is the most commonly used method of editing video for news or feature releases. It is used when the storytelling is dependent on matching consecutive scenes. Continuity cutting consists of matched cuts in which continuous action flows from one shot to another. The three transitional devices associated with continuity cutting are the cutaway, cut-in and crosscutting.

Cutaway

When the action shown is not a portion of the previous scene, a transitional device, known as a cutaway, is used to change positions, movements or characters or to denote a lapse of time. This eliminates a mismatch, or jump cut, that would cause the segment to appear jerky or out of sequence.

Cutaways are often termed *protection*, *reaction*, *insert* or *cover shots* and are thought of as secondary action shots. For example, if the main story is about a parade, cutaways of close-up shots of the crowd would be suitable. Children may be shown watching intently, eating candy or applauding; adults may be wearing different expressions of emotion or carrying children on their shoulders. These shots are of human interest and are related to the primary action, but are not actually a part of it. If you have a good selection of cutaways, you can make a great story out of an otherwise drab and commonplace event. The cutaway can cover a multitude of camera operator errors and result in the formulation of an exciting segment. Cutaways should last between three and five seconds.

Cut-ins

Another method used to denote a lapse of time is the cut-in. Unlike the cutaway, the cut-in is a part of the primary action, rather than the secondary action. For instance, to denote a person climbing a long flight of stairs, you establish the individual at the start of the climb, and then cut to a close-up of feet as they take the steps. After you establish the shot (three to five seconds), you cut back to the person at the top of the stairs. A person can appear to walk a city block in just a few seconds by showing feet walking or a hand carrying a briefcase.

Crosscutting

Crosscutting is the old standby of editing. In crosscutting, you use shots from two different actions or events that will finally be related. A time-honored example is the "meanwhile, back at the ranch" style, or the hero riding hard to save the life of the heroine who has been chained to a buzz saw by the villain. The action would be cut back and forth between the desperate rider and the saw as it comes dangerously close to the heroine's head, showing the progress of each, then finally relating them as the rider arrives at the last moment to save the heroine.

Compilation Cutting

The second method of editing is compilation cutting. This is used in documentary-style stories of surveys, reports, history or travelogues. Segments can be tied together through narration, but not always. The narrative explains the shots, which may have little or no matching relation. These shots or scenes may be long or short shots, or they may go from long shots to close-ups without any special transitions. Compilation cutting is used for putting together Prime Cuts.

Once you're done with your rough cut, trimming is used to tighten up transitions, change the length of a scene, or adjust the timing and pacing of your story.

The technical side of the editing process is fairly easy to learn. With today's technology, the procedure is almost foolproof. Some editing systems allow you to use time-code editing to set all of your edit in and out points ahead of time, including special effects, graphics and audio and video mixes and dissolves. The capabilities of your editing system will control the number of special effects you will be able to use with your video. The latest software programs available allow you to produce professional looking, broadcast quality video, with minimal manpower. Nevertheless, a good editor must have a thorough knowledge of many related skills to provide viewers with a simple, yet effective, message.

Exporting

There are a variety of ways one can export a video project and each editing system has its own unique workflow. Nearly all non-linear editors allow you to export your edited video. The format you use is usually determined by the customer. However, it's your job as to ask where the video will air. Will it be viewed on the Web or in a large auditorium? The answers to those questions will determine what compression needs to be applied to the exported video. If the file size is too large it will not play well on a computer. If the file is too small and you attempt to project it in a large venue the video will look pixilated. It's important to understand the video you edit is considered to be in its rawest format and when you export, you are either compressing or transferring the editing files to tape. The exporting process can be expedited if you mix down the video tracks in advance. This process is also known as compression. Compressing and or exporting can become very involved. In fact, there are several good programs out there used explicitly for compression/exporting. For more information on compression refer to Chapter 7 of this manual.

SUMMARY

The sharing of thoughts and facts through the spoken word and vivid imagery shapes our lives. As an MC your job is to portray events in a clear, concise and interesting way. In this chapter you were introduced to the basics of a video camera and the most important tool there is for visual storytelling – the basic sequence. Remember, continuity is the thread that binds your video together. Once continuity is broken, the audience becomes confused and eventually loses interest in your video. Visual continuity preserves the essence of your story. Consistently using clean entrances and

exits provides a logical transition of the comings and goings of characters in the scene. The lack of directional continuity will always distract the observer from the story. Use the action axis to establish and maintain screen direction. You will often need to change the subject's screen direction, but remember this change requires a motivation and must not break the continuity of your story.

As you become more experienced in the art of visual storytelling, you will find that maintaining continuity is not hard, but it requires you to be ever vigilant against those jumps that can disrupt your narrative. The last thing we discussed was basic editing and how to get the video you captured onto your computer. Depending on where you're assigned will determine what editing software you use. Therefore, we only discussed the basics of all professional editing systems. In the next chapter will discuss the basics of multimedia and how it applies to your job.

Now that you have thoroughly reviewed the videography chapter, take some time to visit the [video gallery](#) on Navy.mil. As you review these videos, look for the lessons you learned here. Keeping up with industry standards and reviewing what others are doing will keep your product fresh and up-to-date.

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CHAPTER 5

MULTIMEDIA

Learning Objectives: *Upon completing this chapter, you should be able to do the following:*

- *Define multimedia.*
 - *Explain difference between raster and vector graphics*
 - *Define principles of design for various multimedia projects.*
 - *Understand the principles of animation.*
 - *List the stages of authoring a movie.*
 - *Explain Section 508 compliance in relation to website management.*
-

INTRODUCTION

As taken from the pages of the Defense Information School's (DINFOS) handbook on multimedia authoring, multimedia simply defines product created by incorporating different elements of media, such as text, audio, still and motion images, animation, etc. It's taking the many forms of storytelling you have learned in this module and the previous manual and putting them together as a package to better convey your message.

In this chapter, we will speak of specific multimedia products and touch on the basics of each:

- Digital graphics
- Multiple-page layouts
- Electronic presentations
- Movie authoring and animation
- Websites.

DIGITAL GRAPHICS

In addition to the written word, photographs and video, all of which have been discussed in previous chapters, digital graphics play a key role in the creation of multimedia products. For our purposes, digital graphics fall into two categories – raster and vector (see figure 5-1).

In this chapter, we will focus on vector graphics, because we more often equate raster images to photography vice digital graphics. However, photos are as important to multimedia products as vector graphics.

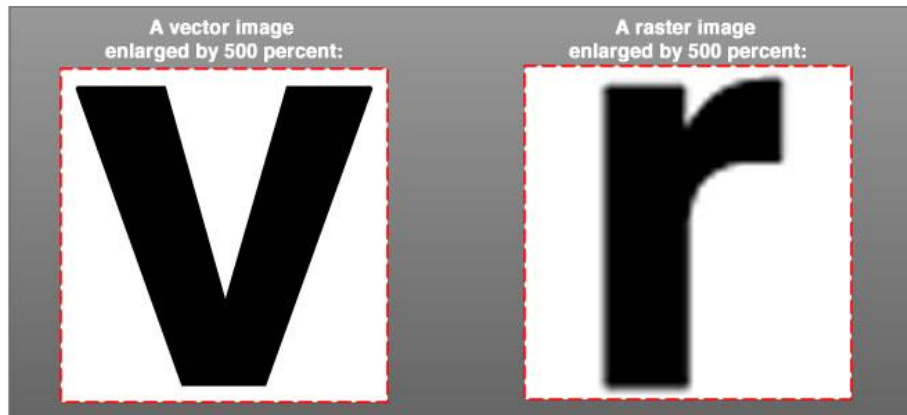


Figure 5-1, A vector image enlarged vs. a raster image enlarged proportionally.

Raster graphics use pixels to create an overall image and are often referred to as bitmap files. Raster graphics are resolution dependent, which means that you cannot increase their size without losing quality, see figure 5-1. Vector graphics are considered object-oriented graphics and are created from points, lines, shapes and curves that are based on mathematical formulas. These elements are filled with color, blends, tints or gradients, while lines have a stroke attribute, such as a solid or dashed line with different thicknesses and colors. Separate parts of a vector graphic are individual objects that can be changed independently of each other.

Vector graphics are resolution-independent, meaning when you reduce or enlarge the image you are only changing the mathematical formula that defines the object. This attribute makes vector-drawing programs ideal for artwork, such as logos, that need to be displayed or printed at different sizes. Vector software should not be used to edit photographs, because photographs are raster images made up of pixels and cannot be separated into individual objects.

Raster-based Software

Raster images create an image using a point, or hundreds of points, of light in a matrix. These images are slower to manipulate and create than vector graphics, but more spontaneous and easier to learn. A multi-layering, raster-based matrix with distinct grid-mapped forms is called raster-based imagery. Raster-based images create painterly (like a painting) effects and encourage creativity. They also require an enormous amount of processor power and memory that can slow program execution. To modify or create in the raster mode is to work at the pixel level which can be time consuming and tedious. Examples of programs that are raster-based are Adobe Photoshop™, Microsoft Paint™ and Corel Photo Editor™.

Vector-based Software

Vector-based software is ideal for drawings, charts, graphs and diagrams. It creates an image by defining line, position, shape, and fill pattern. You plot, or vector, a series of points to define a shape. This shape is calculated into a mathematical formula called an algorithm. Image manipulation and editing is automatically calculated by the computer when you change parameters, making modifications easy and fast. The use of a vector-based program requires preplanning and more computer savvy than a raster-based program. Examples of vector-based programs include Adobe Illustrator™ and Corel Draw™.

Using Software Programs

In order to become proficient with graphics and graphics software, you must practice, practice, practice. However, remember that computer equipment and software can never replace your own creativity and ingenuity. You must gain the knowledge to master the program or programs and use these tools wisely. Sit down, read the owner/user manual, and experiment with the computer.

Drafting, drawing and painting are distinctly different functions and not all programs will be equally adept at processing all three. Base your choice of program on command requirements. Also, let your software drive your hardware. Select a software program that fulfills the needs of the command and allows for some growth. Purchase hardware based upon software requirements. Invest in the very best monitor possible. All of this affects the graphics resolution, the ease of processing, and the final product.

Vector Terms

Now that you understand the basics behind vector graphics and how they are different from raster graphics, let's talk about some terms you need to know before you start using vector-based software.

Bézier Curve (pronounced Bez-ee-ay) – Developed by the French engineer Pierre Bézier, these curves are the basis for all images formed in a vector-based drawing. Originally created to put designs of aircraft on a computer, they were later used for designing cars. A Bézier curve is a combination of points on a path with anchor points at the ends of the path and two points coming out of the anchor points to control the amount and direction of curve. These points are called direction points. The concept behind all these lines and curves is to control the shape of the curve by moving the direction points.

Paths – Vector-based programs use paths to create objects that make up the drawing of the image. A path is a shape formed by lines connected at points, called anchor points. Paths can be changed and are easy to manipulate. Paths can be moved, resized and colored. The three basic types of paths are open, closed and compound.

- An open path is a path that has two distinct end points with any number of anchor points in between. Straight lines, arcs or curve lines are all examples of open paths
- A closed path is a path that forms an enclosed area with no starting or stopping point within that closed path. However, there can be any number of anchor points along the path. Examples of closed paths would be a circle, rectangle or star
- A compound path is a combination of open and closed paths. A compound path can be any shape or size. It can be easily identified because the open areas of the shape allow you to see through it. A doughnut drawing would be an example of a compound path.

Fill – To fill means to add color or pattern to an open area inside a path. A gradient can be created and used to fill an object. A closed path, a circle for example, will be filled in the inside of the path area. An open path, an arc for example, will be filled inside the path, but will stop at the invisible straight line connecting the end points.

Stroke – To apply a stroke means to take a path defined by the shape and trace it. A stroke can be applied to any path. A stroke color or pattern can be changed using the color or swatches palette. A stroke weight or thickness can be changed using the stroke palette. The Miter Limit option determines how far the stroke sticks out on a sharp corner.

Anchor Points join two segments of a path and can be edited. They can be placed manually or using the tools provided to place an anchor point where needed. It is important that you use as few anchor points as needed to create a path. Be careful when editing, you must remember that using more anchor points makes it more difficult to edit. That being said the more anchor points you use the more precise and detailed edits you are able to make. Four types of anchor points:

- Smooth Points have a curved path and no noticeable, abrupt change of directions, like an "S"
- Straight Corner Points occur where two straight lines meet, typically at a corner or anywhere there is an abrupt, distinct angle formed at the juncture of two paths, like a "V"
- Curved Corner Points are found at the junction of two curved lines that abruptly change directions when they meet, like the number "3"
- Combination Corner Points are found where a straight line meets a curved line, like the number "5".

Viewing Modes – Most vector-drawing programs provide three viewing modes to view your designs – outline, preview and preview-selected.

- Outline Mode displays the paths for the objects you have drawn; it shows no color, shading or other graphical effects
- Preview Mode shows what you will get when you print the illustration
- Preview Selected Mode shows the stroke, fill and color of the independent selection only.

Digitizing Tablets – A digitizing tablet (see figure 5-2) is an input device to help you enter drawings and sketches into a computer. It is most needed when converting an analog drawing or image, or re-drawing a low-resolution graphic. Operation consists of an electronic tablet, wireless mouse and/or pen. A pen (also called a stylus) looks like a simple ballpoint pen but uses an electronic head instead of ink. The tablet contains electronics that enable it to detect movement of the cursor or pen and translate the movements into digital signals that it sends to the computer. Each point on the tablet represents a point on the display screen in a fixed manner. This differs from mice, in which all movement is relative to the current cursor position. The static nature of digitizing tablets makes them particularly effective for tracing drawings.



Figure 5-2, Example of digitizing tablet.

FILING GRAPHICS

According to the SECNAVINST 3104.1A, [Navy Visual Information Program Policy and Responsibilities](#), the marking and filing of all graphics must be made in the same manner as photographic images to include security classification, VIRIN and name of creator.

The VIRIN format, as of February 1, 2011, changed. See chapter 7 for more information.

MULTIPLE-PAGE LAYOUTS

Brochures, newspapers, newsletters, event programs, etc., are a few examples of multiple-page layouts you may be assigned to create during your time as an MC. Each brings together digital graphics with the other types of media we have discussed throughout this manual. Strategically placing these items together to create such a product is referred to as layout and design.

Layout and design affects the placement of different items as well as the relationships among them. It's like identifying your favorite ingredients and making your favorite dish. You need to know which ones and how much of each you need to use. The principles of design determine what you do with these items and how you do it. Within a layout, these principles also affect where you place the items and why.

PRINCIPLES of DESIGN

The four principles of design are balance, rhythm, emphasis and unity. When creating a layout, think about how each of these principles will enhance your layout, make it visually appealing or better communicate your message to your audience.

Balance

Balance is the perceived equal distribution of weight in a design. Balance refers to how items are arranged horizontally or vertically in a design. It creates a feeling of steadiness and of things looking as if they belong where they are. Layouts that are balanced seem complete to the eye. The two approaches to balance are symmetrical and asymmetrical.

Symmetrical balance is also known as formal balance. It is the arrangement of elements so they are evenly distributed to the left and the right of the center. In other words, one side mirrors the other, and all items on the page are centered and balanced. Symmetrical balance communicates strength and stability. It is mostly used for traditional or conservative layouts.

The opposite approach is asymmetrical balance, or informal balance. It is the arrangement of an object or objects of different weight on the page, which are not placed uniformly. Asymmetry relies greatly upon the optical weight of elements. Optical weight is a system of visual measure based upon the following ideas:

- Dark elements weigh more than lighter ones
- Color weighs more than black and white
- Big elements are heavier than smaller ones
- Bright hues are more weighty than muted hues
- Irregularly shaped elements have more weight than normal shapes.

Balancing an asymmetrical design requires the use of such elements as color, value, size, shape and texture. Asymmetry brings contrast, variety, excitement, movement, surprise and informality to your layout. It is most appropriate for pieces that entertain and inform.

Rhythm

Rhythm is used to achieve movement and is the visual progression of repeating elements in a varied pattern. Rhythm is often associated with music; for example, a waltz with a smooth, flowing rhythm or a polka with a lively rhythm.

The two key elements of using rhythm in your layout are repetition and variation. Repetition is the repeating of similar visual items in a consistent manner, and variation is a change in the size, placement or form of visual elements.

Repetition unifies a layout. For example, to make text easy to read, use even columns. However, too much repetition without variation can make for a boring layout. To vary your layout, you can add headlines, sub-headlines and images. Headlines are discussed in Module 1, Chapter 6.

Rhythm communicates feeling or mood. To establish a calm and relaxing mood, you should place your elements at regular intervals, creating a smooth, even rhythm. To establish a more dynamic mood, vary the size and spacing of the elements. The latter is used often in advertisements to keep an audience's attention.

Emphasis

In design, emphasis means that one element stands out amongst the others, capturing more of a reader's attention. As the layout and design editor, you emphasize the element you want people to notice first and foremost. Color is a great way to emphasize an element.

Remember back to the previous chapters on photography and videography. Do you recall that within both types of media, having a focal point within the images was vital to good storytelling? The same is true with layout and design. In any product, you must have a focal point or a spot in your layout that captures your reader's attention and keeps him there to check out the rest of the piece. Having too many focal points, however, confuses your reader. Emphasizing everything means emphasizing nothing.

After you choose the element you want to emphasize, you can choose from several methods to call attention to it. Generally, a focal point is created when an element differs from the others. For example, if you are working with a vertical layout, you can use a horizontal item, such as a horizontal photo, as your emphasized element. Other ways to use emphasis include:

Unity

Unity helps the elements of your layout look like they belong together, by providing visual cues to your reader that tells them which parts of the layout go with other parts of the layout. For example, in a newspaper, unity holds together a headline, story and the associated image.

Three ways to unify your elements are by grouping, repeating or using grids. Grouping means that the elements are close together on the page. Repeating elements through color, shape and texture create unity. If you are using an image of the American flag, you could pull out the color blue from the flag and use it for other elements on the page. A grid system, also referred to as modular design, is a division of page space into columns, margins or space. A grid establishes a framework for text, graphics and images.

Variety keeps unified layouts from being boring. For example, you can create a theme with circles in your layout. Circles and the variations of circles in different sizes and shapes create unity, but variety, at the same time. The elements remain related within the circular design, yet varied enough for interest.

ELEMENTS of DESIGN

The process of layout and design is neither an exact science nor magic. Layouts are tried and discarded many times before the right one is found. However, knowing the basic principles and elements of design and how to use them will help you make good choices. In this section, we will discuss seven elements of design often used in the industry – line, shape, texture, space, size, value and color.

In any given layout, it is important to know which of these elements are necessary and which are not in order to create a successful, clutter-free layout.

Lines

Lines are everywhere. There are straight lines, curved lines and squiggly lines; fat lines, skinny lines and dotted lines. Lines are used to organize, direct your reader's attention, or create mood, rhythm or movement.

- Horizontal lines can represent rest or relaxation in one instance or stability in another
- Vertical lines often show strength
- Vertical lines suggest movement
- Curved lines suggest many things depending on how they are used. They can show weakness, or they can show elegance, beauty or gracefulness.

Shape

Shape is any element with a given form that has height and width. Shapes communicate ideas. For example, a logo used for an international company could use a circle to represent the earth. Unusual shapes attract attention. Arranging text into a shape can be used to draw attention.

Shape enhances a layout in three ways – gives your reader a place to begin by acting as a focal point, sustains the reader's interest by breaking up pages with an overabundance of text, and organizes and separates to add variety.

In layout and design there are three common types of shapes. Geometric shapes, like circles, triangles, squares and rectangles, are regular and structured. These shapes make excellent building blocks for design. Natural shapes include animal, plant and human. They are irregular and fluid. For example, instead of using a rectangular shape on your page, you could use ivy (if appropriate) to give the page a light, airy feeling. Lastly, abstract shapes are simplified versions of natural shapes. An example of an abstracted shape is the symbol of handicap accessibility, which includes a figure in a wheelchair.

Texture

Texture gives a design the look or feel of a surface. Think about the many textures you encounter every day – the bark of a tree, the roughness of the sidewalk, the smoothness of a sink

basin, grooves on a steering wheel, the short or long fur on your pet, etc. In design, texture communicates through an imagined sense of touch.

Texture creates a particular mood, while adding dimension and richness. To demonstrate this, try printing your layout on different textures of paper using embossed type. Embossing means to create a raised surface.

Two types of texture are used in layout and design – tactile and visual. Tactile texture can be felt, while visual texture creates the illusion of texture on a printed piece. Wallpaper is an example of visual texture. Patterns often lead to visual texture. When an image or line is repeated many times, the patterns of lights and darks add dimension to the surface. Patterns make excellent backgrounds and borders in layouts; they add rhythm and movement.

Space

Space is defined as the distance or area between two items. Effective use of space in design leads to attractive, organized and functional layouts. When designing a layout, you must think about where you are going to place the text and imagery. How much space must you place around and between each item? You must also consider your total amount of work space on the page, how each element works together, and the overall appearance of your layout.

The space between and around the items is referred to as white space or negative space. It creates a rest for the eye and visually organizes the layout. White space between columns of text, for example, provides boundaries to allow the reader to move through the text easily.

Placement and value of shapes on a page create spatial relationships and focal points among the items on the page.

Size

The fifth element is size, which is how big or small something is. Size plays an important role in ensuring the layout is functional, attractive and organized. You can contrast small and large items to attract attention, reinforce importance or create relationships.

Value

Value is the darkness or lightness of an item, giving it shape or texture. In design, every item has a value. When laying out pages, an item's value is affected by its background and the other items around it. For example, a lot of text in a small area on the page will cause the paper to look gray.

Value can express a theme or mood. Using black, white and gray in your design adds power or changes the mood. Value establishes contrast by subtly blending shades of color or black and white. Low contrast creates a calm, quiet mood; high contrast conveys a feeling of drama or excitement. Using only light values gives a piece an unstable, subtle feeling.

Movement and direction can be affected by value as well. If you place a single black dot on a white background, you get great contrast between the foreground (the dot) and the white background. If you add a second dot below the first, the dots will appear to have equal importance. If you give the second dot a 50-percent shade, the value of the second dot creates movement and direction (see figure 5-3).

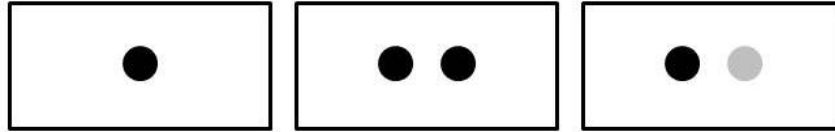


Figure 5-3, Example of changing the value of an item within a layout.

Color

The final element of a good design is color, which is the ultimate tool for symbolic communication. Decisions about color should be made with much thought to ensure the success of your layout.

Color conveys mood, identifies objects and relays messages. Like value, color also can evoke moods and emotions.

How you use color, however, makes a difference in the final product. You can pick a color from a photo for a background color in the layout to achieve a specific look. Repeating colors from a photos of a sunset gives you a gentle, soft feeling throughout Using contrasting colors with the same photo will give you a different look altogether. If you surround the same photo with lots of black, you create action and drama.

PAGE LAYOUTS

Now that you have looked at the principles and elements of good design, it is time to talk a little about the actually laying out the pages of that brochure, newspaper or retirement program. Page layout is the actual arrangement of type, photos, graphics, illustrations, etc. It involves the position of headings, the number of columns of text, borders, and the placement of graphics.

A good design makes it easy for your audience to receive the intended information. It requires elements to be arranged so they are aesthetically pleasing. There is no single correct formula for producing layouts or shortcuts to learning effective techniques. To be successful, the layout must stop readers and redirect their attention to the information you want them to read.

A good layout must be well organized and attractive to the reader to effectively communicate your message. A good layout succeeds when it gets the message across quickly.

The most important decisions you will make in creating your layout is deciding who is your target audience. You must also decide if the product is going to be printed or Web-based. How will it be distributed? If the product is going to be displayed on the Web only, you should use the RGB color mode rather than CMYK print color mode. (RGB = red, green, blue; CMYK = cyan, magenta, yellow, and key or black)

An Organized Layout

A good layout is organized when it provides a visual path for readers to follow. It shows the reader where to start and where to go second, third, fourth, etc. The better the organization, the faster the reader will get the message. Organization allows the reader to move smoothly and easily across the layout. If the viewer has to work at it, she will get bored or frustrated and lay the product aside.

Organization takes time and is perfected through trial and error. The process is similar to that of putting together a jigsaw puzzle. Best practice is to keep putting the pieces together in different ways until they fit together comfortably, emphasizing the items to the proper degrees.

An Attractive Layout

A good layout attracts your reader, grabbing her attention and pulling her into the information. A poorly designed layout fails to communicate. When designing and layout out your product, ask yourself these three questions:

- Does it work?
- Is it properly organized?
- Is it attractive?

If you can answer yes to all of these questions, you can say that you have a good layout. You should always get a second and third opinion, however.

PAGE ELEMENTS

Page elements, not to be confused with the elements of design, are the main ingredients that make up your layout. These include text, graphics, photos and illustrations, bleed, borders, rule lines, guidelines and grids, gutters, and margins.

Measurements

The system of measurement in graphic design includes the pica and the point. A point is defined as exactly 1/72 of an inch; therefore, there are 12 points in a pica and six picas to the inch. Type is always specified in points, and page elements are measured in points and picas.

TEXT, TYPE and COPY

Text, type and copy refer to the written information on your page. In the following paragraphs, we will discuss the factors to consider when working with text, type and copy.

Leading

Leading (pronounced led-ding) refers to the spacing between lines of text. It is measured in points, vertically from the baseline of a line of type from the baseline of the line below it. Leading is proportional to line length. Long lines of text require more spacing between lines. The default in most desktop publishing programs is usually 20-percent greater than the type size (e.g. for 10-point type, add two points to leading).

Closer text fits more text on a page, but decreases legibility. Looser leading spreads text out to fill a page and makes the document easier to read. Leading can also be negative. In this case, the lines of text are so close that they overlap or touch. Leading that is too tight makes it difficult for the reader to separate the words and phrases and to find the beginning of a line.

Line Length

Line length is the width of the line of type, column or page – in picas or points as set by the typographic commands. The length of a line depends upon the size of the type. Too long of lines

makes it harder for the reader to find the beginning of lines. Long lines make scanning difficult as well. Lines that are too short break up phrases. A good line length for optimal readability is 55-60 characters or nine to 10 words.

Kerning

Kerning refers to the horizontal space between letters. It can also mean to improve the appearance of type by adjusting the spacing between specific pairs of letters, such as AV, AY, FA, AW, PA and AT. Comfortable spacing between letters leads to visual balance, allowing the reader to move smoothly along the text. Kerning becomes more important as type size increases, as in large displays and headlines.

Type Size

As written above, text is measured in points with 72 points in an inch. Most documents use 10-point or 12-point type, or within the common range of 8 to 24 points. Small text is more difficult to read than larger text, but text that is too large becomes cumbersome and wastes paper and space.

Casing

Uppercase characters are capital letters; lowercase characters are small letters. The term casing traces its heritage to the days when typesetters kept capital letters in a tray above the lowercase letters.

Lowercase letters are easier to read than capital letters. Readers read quickly when they recognize the shapes of letters, and capital letters often appear to be in the same, square shape, vice lowercase letters. Writing with all caps adds emphasis, however.

Typeface

Typeface is the letters, numbers or symbols that make up a type that shares common characteristics, such as stroke width and the presence or absence of serifs. Although sometimes used interchangeably with font, they are not the same. Typeface is a set of one or more fonts, in one or more sizes. A font describes the style of typeface, such as bold or italic. For example, Times New Roman, Arial and Courier are the most common typefaces. Arial bold or Arial italic is a font.

Using different typefaces will not lead to better design or layout. It is best to stick to one or two typeface families throughout your layout. Choose a typeface that is simple and legible.

Typefaces can be divided into two categories – serif and sans serif. Serif letters are composed of thick and thin lines terminated with small cross strokes. One example of a serif typeface is Times New Roman. Serif is easier to read than sans serif, and serif improves readability by leading the eye along the line of type (see figure 5-4).



Figure 5-4, Example of serif letter and sans serif letter.

San-serif letters are constructed of strokes relatively even in weight. Arial is a sans-serif typeface. Sans serif is clean and simple in appearance. Sans serif is not recommended for large areas of solid text, but can be used in headlines and/or sub-headlines. For more information on headlines and captions, see chapter six of the first module.

Body Text

Body text is the main text used in your layout. It is the most important information the reader needs to know. Body text is generally 14 points or smaller and remains consistent throughout your publication. Italic or bold fonts should not be used for body text.

Pulled Quotes

A pulled quote is a short quotation that is pulled out of the story to attract attention and possibly entice the people to read the story. It also helps break up long columns of text. Pulled quotes are larger than body text, but smaller than the headline text, usually 18 to 24 points.

Indentations

Indentations are the positioning of text, so a margin of the line or lines appears a fixed distance from the left or right. Indentations affect visual configuration. The three basic types of indentations are regular, flush and hanging.

A first-line indent is an example of regular indentation and is often used to begin a new paragraph. Indents can be made from the left margin only or on the left and right, known as flush. The latter is used often to highlight a long quote or to bring attention to a particular passage. Hanging indents are frequently used for bibliographic entries, glossary terms, resumes, and outlines or bulleted lists.

Graphics and Photos

Every publication needs imagery to communicate concepts differently than words and to help sell the information. Graphics can be line drawings, art, digitized photographs or video images, or a combination of these. A photo adds visual interest to the layout. These are among the most important elements in the layout, because of their ability to capture a reader's attention without saying a word.

Bleed

A bleed is a photo or illustration that runs off a page or extends past the margin of the page. A full bleed means the printed elements extend beyond the four edges of a page.

Borders

A border is a decorative line or box used with text, graphics or tables. Borders keep it all organized and give the appearance that everything on the page goes together. Almost anything can form a border to a picture or a graphic. It may be as simple as a line around the edge of the page or a gold band to form a frame around another graphic.

Rules

Rule is another name for a line in graphic design. Rules are the horizontal or vertical lines used as decorative elements and as functional parts of the overall layout to separate, offset or anchor

areas of the page. They are used for forms, graphs and other graphic material. Lines divide and create organization.

Rule is a line of unvarying thickness, normally expressed in points, although some programs use inches by default. A hairline rule is the smallest. Rules can be solid or created from round, square or diamond-shaped dots. Rules can be made of dots and dashes in a pattern.

Guidelines and Grids

Guidelines and grids are used to align page elements. Gridlines help maintain consistency, determine orderly placement of text and graphics, and keep balance on the page. A grid is an invisible structure used to provide visual organization for text and graphics. A grid's influence may be evident in the width of columns, the uniformity of space around photographs, or the consistent placement of repeating elements from page to page.

Margins

As you read earlier, white space on a page is important to the layout's design, as it gives your layout breathing room. The most obvious white space on any page is found in the margins – top, bottom, left and right – or the empty space between the trim (where the page is cut) and the live printing area (primary text and graphics) of the page.

Traditional layout and design theory tells us that the more space devoted to margins in comparison with text and graphics leads to a more formal design and increases readability. Generous margins say elegance and simplicity. On the other hand, limited margins that leave little space can make your document look cheap, or mass produced. However, in today's cost-cutting, do-more-with-less business practices, skimpy margins are used more frequently and have become the norm.

Gutters

The inside margins or blank space between two facing pages in multiple-page document is known as the gutter. It is that extra space used to accommodate the binding in books and magazines. The amount of gutter needed varies depending on the binding method. The term gutter is sometimes used to describe the alley, as well, or space between columns of text in a page layout.

ELECTRONIC PRESENTATIONS

Another form of communicating the Navy's message is via projected media or electronic presentations, sometimes referred to as slide shows or command briefs. No matter the term, a presentation is a presentation anytime someone stands in front of several people and gives them information with support from projected information. An electronic presentation can also be viewed directly on a computer monitor in a personal setting.

In this section we will discuss how this multimedia product, like multiple-page layouts, pulls together more than one form of media – text, images, video, graphics, etc. – to best communicate your information. We will also speak about the other forms of projected media, which are not as widely used in today's digital environment.

The most important consideration when creating an electronic presentation is your audience. The presentation must convey information or educate your audience in some way. But each presentation is not created equally. For example, a briefing intended for your skipper will not necessarily be the same as one created for the crew. Nonetheless, the presentation must be professional.

The key to a successful presentation is organization. If the information you are presenting is not organized properly, the presentation will be ineffective. Successful organization can be achieved by following a simple five-step process.

FIVE-STEP PROCESS

Planning is the first step in developing a presentation. Planning begins when you sit down with your customer (or leadership) to discuss the target audience, desired outcome, content, specific multimedia requirements, and deadline. Always clarify any misunderstandings you have or the customer has before wrapping up the planning stage.

Design is the next phase of this process. After properly planning the job order, begin designing the look of the presentation. Work out the general layout and look at the presentation on paper first. From this roughest of drafts, develop thumbnails, roughs and comprehensive drawings to serve as blueprints for the final product. These blueprints should be shown to the customer prior to continuing on with the process. This will ensure that you are on the same page with your customer before you invest more time in the process.

Once the presentation is designed on paper and approved by the customer, the third step, production, begins. It is at time that you establish a files management directory for the presentation. A well-organized folder structure can reduce time spent searching the computer for necessary files. It also makes archiving the presentation easier for future recall. Within the folders, you should organize photos, graphics, videos, audio and text to be used in the presentation. You may want to keep an originals folder as well for back-up purposes.

Once the directory is established and source images digitized, it is time to create the presentation. Select the appropriate page setup for the presentation. Select a preformatted design template, or format the color scheme and masters manually. Once the slide master is formatted, create the slides. First, place all the content and then add supporting images. Add presentation effects such as transitions, animation and hyperlinks last.

After the presentation is complete, the next step is testing. Testing requires a quality-control check. To do this, proofread for accuracy and evaluate for effective design and legibility. It is also important to test the performance of the presentation by rehearsing on the system and in the exact location of the final presentation.

Delivery is the final step in the process. Once the quality-control check is complete, print viewgraphs, shoot slides, or save the electronic presentation in its final output format.

INFORMATION ARRANGEMENT

A good presentation includes an introduction, body, major points, summary and a closure. However, a presentation, depending on its purpose, can be structured in many ways. You could follow a pre-formatted template or you could design one unique to the presentation itself. When a pre-formatted template is selected, all slides within the presentation can be generated with placeholders that often include step-by-step instructions of what information to place when and where.

Navy presentations may not always be created using a pre-formatted template, but they do typically follow a general format. The first slide is the introduction or title slide, which is used as an opening for the speaker to introduce himself and the overall topic. The second slide contains the purpose or objective. This slide allows the speaker to discuss the reason or reasons for the presentation and to state the goals to be achieved. Next is the overview slide, listing the main topics

of discussion in the order each will be discussed. Slides specific to each topic follow. This is where you will most likely find graphics, audio, video and images to support the information being presented. This is where you can get the most creative.

After the topic slides comes the summary slide. The summary slide reiterates the topics discussed and allows the speaker to review the material covered. The final slide in the presentation is the closing slide. During this time, the speaker can review the objectives and open the floor to questions.

LAYOUT and DESIGN

Two of the most important factors when preparing a presentation are simplicity and legibility. Slides should not be a verbatim copy of what is being stated by the presenter. They should be used like headlines or signposts to point the direction of the presentation. Slides may also be used to illustrate and explain ideas the audience may find complex, for instance, the important elements of a table of figures may be better demonstrated if plotted as a graph. Research shows that each slide will only be looked at for approximately seven seconds, so remember to keep it simple.

Legibility is the "bottom line" and depends on a combination of factors. Font choice, text, colors, graphics, and layout all have an effect on the legibility of a slide.

Using Text Effectively

At any given point in time, the audience will have two senses with which to absorb a presentation – sight and sound. Don't overemphasize the importance of the spoken word; give equal importance to the slides. A good criterion for measuring the quality of slides is to go through them in sequence and ask whether the major themes are readily apparent with no spoken words. Similarly, a good criterion for measuring the quality of spoken words is to talk without any slides. These are harsh tests because neither the spoken word nor slides are adequate alone. If the spoken words and slides are both strong individually, all that remains is to be sure they are properly arranged.

Type

Type is the basic building block of a presentation. Often it is irresistibly compelling and sometimes absolutely imperative to design a presentation with more than one typeface in it. You may find more than one element on a slide such as a title, body text, labels, and image captions. Within these dynamics on the slide, a relationship is established that is concordant, conflicting, or contrasting.

Concordant – A concordant relationship occurs when only one type family is used. This keeps the slide harmonious, and the arrangement tends to appear quiet and rather sedate or formal. It is a good technique. To add more interest, however, you can use the regular style for one block of text and a bold italic for another.

Conflicting – A conflicting relationship occurs when separate typefaces that are similar in style, size and weight are used – such as Times New Roman and Garamond. The similarities are disturbing because the visual attractions are not the same, but neither are they different enough so as not to conflict with each other. Most often, conflicting text gives the appearance of a mistake rather than an effective difference between two elements.

Contrasting – A contrasting relationship occurs when you use separate typefaces that are clearly distinct, such as Impact and Helvetica. The visually appealing and exciting designs that attract your attention typically have a lot of contrast built in, and the contrasts are emphasized. Using two

contrasting typefaces in a presentation can add visual excitement. However, it is important that both of the contrasting typefaces are legible when projected onto the screen.

The choice of typeface used in a presentation has major impact on its legibility. The legibility of projected text differs from that of printed text, because the resolution of printed text is much higher than that of projected text. What looks good on paper may not project as nicely on the big screen.

Most experts recommend using sans-serif typefaces for electronic presentation. They believe that sans-serif typefaces hold up very well when projected and are easy to read, even from the back of a room. However, others argue that slab-serif fonts are also a good choice for electronic presentations, because they are more consistent in their thickness than other serif typefaces. Slab serifs can be identified by their thick, block-like serifs. Clarendon and Rockwell are examples of slab-serif typefaces. Whatever your choice, always check the readability when projected before the final presentation.

Text Size

Aside from using the right typeface, size also plays an important role in the legibility of text. Again, opinions vary on the perfect size for text on slides, but the consensus is to use text no smaller than 24-point for electronic presentations and 35mm slides. For overhead viewgraphs, the consensus is 18-point.

What matters most is the text must be easily read when projected on the screen. Before the final presentations, try one of the following methods to ensure you have chosen the right text size. First method is to display the slide full screen on the computer monitor, stand about nine feet away, and read the text. If it is easily read, the text is a good size. With a printed viewgraph, place the slide on the floor at your feet. If you can read the text without bending over, more than likely the text size is good.

General Text Guidelines

For consistency and simplicity, limit the amount of fonts used in a presentation to no more than two. In most cases, using a variation of the same font works very well, for example, Arial bold italic for the title and Arial bold for the body text. A second font can be introduced to highlight key points and phrases.

Remember the one thought, one paragraph idea introduced in newswriting? The same applies here – one topic, one slide. Focus on one point with each slide, and break up complex topics into smaller, more digestible segments. If there is too much information to fit on one slide, spread the information across multiple slides. This will give the audience time to absorb the information. Another good practice is to use bullet statements with each bullet representing a new thought about the main topic and use key phrases where possible. The concept of accuracy, brevity and clarity works well here; eliminate non-essential words, such as articles and other words not essential to your message.

A good rule of thumb to follow for placing text on a slide is the "6 x 6 rule", which means to use no more than six lines per slide, not including the title, and no more than six words per line. This does not mean there can't be more than six lines of text on a slide, because it is not always possible to condense the information that much. However, by keeping this rule in mind, it serves as a reminder to focus on the important words and eliminate any unnecessary words.

Use "Initial Capitals" when typing text rather than all capital letters. "Initial Capitals" is also known as sentence case or upper-lower case. Writing with ALL CAPITAL LETTERS makes the text hard to read and is the written equivalent of shouting. When learning to read, we learn by reading

uppercase and lowercase letters. Studies demonstrate we also read using shape recognition. Each letter has a distinct shape that is based on the construction of the letter. Likewise, so do words. We become very adept at quickly recognizing words without actually reading every letter.

Another tip is to keep all information within a safe area on the slides. The safe area, about ½ inch from the edge, compensates for any overlap or edge loss when projecting the slides.

Using Color Effectively

The primary purpose of color in a presentation is to create an attractive environment for the message. Studies show that a color presentation is more memorable and effective. The use of color can contribute to a presentation in several ways. Color choices can influence the mood and receptiveness of your audience. In a darkened room, audience attention can wander. Color provides the visual variety necessary to maintain audience interest. It can focus audience attention on a particular point in an individual slide. Finally, color can be used to enhance meaning and clarify information.

A presentation color palette establishes a consistent environment throughout. The color choices in a color palette can be broken down into three main areas – format, highlight and text.

Format Colors – Colors used in the basic design of a presentation are the format colors. These include the background colors and any colors used for recurring items, such as graphics and logos. When creating 35mm slides and electronic presentations, the format colors will usually be the darkest colors on a palette; on overhead transparencies, they will be a combination of dark and light colors, depending on the format design.

Highlight Colors – Highlight colors are those added to a palette for illustrations, chart and graph elements, text bullets, and other graphic objects that have meaning and content. These colors should fall in the midrange of brightness; bright enough to stand out from the background, but dark enough to support white or lightly colored text. Similar highlight colors are used for overhead transparencies, 35mm slides and electronic presentations.

Text Colors – Text colors include the basic text color, title and subtitle colors, and special colors for highlighting body text. In 35mm slides and electronic presentations, these colors should be the lightest in the palette so they will stand out against the format and highlight colors. On overhead transparencies with medium-light or light backgrounds, these will be the darkest colors.

Color Contrast

Color contrast is the relative difference between two adjacent colors. The difference may be in hue, as in red and green; it may be in saturation, as in light pink and primary red; or it may be in brightness, as in brick red and primary red. The difference may also be a combination of both, as in yellow and dark blue.

Contrast is defined in terms of foreground and background objects. In presentation design, text and graphics are the foreground objects that rest on the slide background color. High contrast is essential to readability and clarity in slide design, so it's important to select highlight colors for text and graphics that contrast strongly with the background. The best way to provide contrast is through a combination of brightness and hue.

When two objects with high color contrast, such as red and cyan, touch each other on a slide, a thin, white line may be seen where they touch. This effect is known as haloing. When two complementary colors touch, the slight overlap of the beam causes the colors to mix, creating a white

edge. Most haloing can be eliminated by placing a thin, black border around the complementary-colored objects, or giving the text a black drop shadow. The black line will interrupt the overlap.

Warm, Cool and Neutral Colors

Color can be divided into three main categories: warm, cool, and neutral. Warm colors are the colors of fire: reds, oranges, and yellows. Cool colors are those of water and air: greens, blues, and violets. The only truly neutral colors white, black and grays. However, subdued versions of warm and cool colors such as browns, tans, and slate blues, also serve as neutral colors since they usually have a lot of gray in them.

Warm colors draw attention in the presentation. Slides with a preponderance of warm colors stimulate the audience and cause feelings of heat and energy. However, warm, bright backgrounds are much too flashy for slides. The intensity of the colors will tire the audience. Dark reds and oranges can be used in backgrounds, but carefully, since it is difficult to find cool, contrasting colors that work well with them for foreground objects.

Cool colors have a more relaxing effect on an audience than warm colors. In general, slides with mostly cool colors make an audience more receptive and passive. Dark, cool colors are ideal for backgrounds because they contrast well with warm color highlights, forcing the audience to pay attention to the content rather than the background. Brighter cool colors can also be used, which would be overwhelmed by a warm background, as highlights.

True neutral colors act as a blank slate for the highlight colors used with them. Without an addition of some color (either with a logo or format graphics), neutral backgrounds can be very boring. Warm neutral colors, such as brown and tan, or cool neutral colors, such as blue gray, can be used to avoid the bland gray look. Neutral tones are the perfect background for a full range of highlight colors, both warm and cool. In a presentation, various combinations of warm, cool, and neutral colors can be used to influence the audience.

The background, because of its large area, will have a more profound effect on the general mood of an audience than the highlight colors used with it. Warm backgrounds are generally suitable for presentations that are intended to excite and stimulate the audience, such as sales and marketing meetings. Cool backgrounds are best suited to presentations that require the audience to be relaxed and receptive to information, such as business and scientific presentations. Neutral backgrounds (especially gray) serve as a backdrop for the other colors, so the highlight colors will have more effect on the audience.

Enhancing the Message with Color

In a presentation, anything that helps the audience concentrate on the speaker and the slides is a plus. Color is one of the strongest tools for guiding an audience. The following are some techniques for using color to enhance the message.

Use color to increase legibility – Strong contrast will increase readability. Unless deliberately trying to create a watermark effect, use enough contrast to create a visible edge where any object touches the background. Without proper color contrast, objects will appear weak and out of focus.

Use color to maintain audience attention – To keep the audience awake, use occasional splashes of color. Color visually stimulates the audience, keeping them alert and interested. Color also adds variety. Use colorful charts and graphs as well as colorful graphics and photographs to illustrate the point.

Use color to emphasize or de-emphasize points – Color can be used to call attention to a line of text or part of a graph, or it can be used to draw attention away from certain information. Large, low-contrast elements will seem less important than smaller, brighter ones. Instead of underlining important words within a text block, put them in a bright, contrasting color. Put the most important element in a bright color to direct the audience's attention to it. Use darker colors for data that is not as important to diminish its impact.

Use color to link related presentation elements – For example, if a briefing contains several references to different departments within your command, you can select a signature color for each department. The audience will identify with each color, and it will be easier to read and understand the slides.

Use gradient fills for depth and realism – Using gradient fills for backgrounds adds drama and depth to slides. It also enhances contrast between background and foreground elements.

Other Guidelines for Using Color

Limit the variety of colors used. Five colors are the maximum for graphs and charts. For word charts, limit yourself to two main colors with a third for highlighting.

- Use color to show relationships between elements
- Keep colors consistent
- Use bright colors to emphasize information
- Understand that cool colors recede to the background; warm colors advance to the foreground
- Use colors like blue and green for less important elements or large areas
- Establish a color palette and stick with it
- Avoid red-green combinations.

ELECTRONIC PRESENTATION PRINCIPLES of DESIGN

The four principles of design for electronic presentations are proximity, alignment, repetition and contrast.

The principle of proximity states that related items in a layout should be grouped closer together and unrelated items farther apart. When several items are in close proximity, they become one visual unit rather than several separate units. This helps with organization by reducing clutter.

Although elements are separated to indicate their relationships with other elements, alignment shows all elements in the layout belong to the same piece. Lack of alignment is probably the biggest cause of unpleasant-looking layouts. The principle of alignment states that nothing should be placed in the layout arbitrarily. Every element should have a visual connection with another element whether they are in close proximity or not. The purpose of alignment is to unify the layout.

Repetition strengthens unity. Color, shape, texture, spatial relationships, line thickness, fonts, text sizes, and text placement can all be repeated.

Often the most important visual attraction is contrast. The principle of contrast states that if two items are not the same, make them different, REALLY different.

Tables, Charts and Graphs

Most military presentations are based upon statistical data. So, you must be able to provide this statistical information through well-prepared graphics that communicate visually and can stand alone or be supplemented with written or spoken words. Therefore, you must be proficient in the basic techniques of producing tables, charts and graphs.

Tables

The two basic types of tables are general purpose and special purpose. Although their construction is the same, there are basic differences.

General purpose tables present a broad range of data on a specific subject, while special purpose tables highlight a particular aspect of a study.

General purpose tables are quite long and cumbersome; special purpose tables are usually brief and to the point.

A table should contain a title, body, captions, footnotes and source and preparation data.

Title – tells the viewer what is being compared and where and when the data applies. Never sacrifice clarity for brevity when deciding upon your title.

Body – the information should be presented simply and clearly, so it must be arranged systematically to emphasize the important points. Columns are vertical listings, and rows are horizontal. Column headings are called boxheads, and row headings are stubs.

Captions – Captions are related to the title of the table. Detailed captions eliminate the possibility of misunderstanding. Captions give unit of measurement being used. These captions, although different from photo captions, do explain what is in a table.

Boxheads contain caption information for vertical columns

Stubs contain information in horizontal rows. They are usually listed in some logical order – numerical, alphabetical and geographical. Stubs should be clear and complete to prevent misunderstanding.

Footnotes – Clarify items that are not completely self-explanatory. To draw attention to a footnote, use an asterisk or some other graphic symbol, but don't use the same one for different footnotes. Footnotes should be placed to the left, directly below the body of the table.

Source and Preparation Data – To be complete and effective, you must include the source of the data, the preparer's identifying information, and the date the table was prepared. It is standard to display this information in the lower left and right corners of the table, aligned vertically.

Tables do not have standard graphic elements, like you may find in charts and graphics. Therefore, an effective table relies on good information and line-width hierarchy. Text hierarchy means that separate groups of text have different characteristics. For example, the title should be the largest and boldest text in the table. This draws attention to the important elements and assists in visually organizing the information. Line-width hierarchy means using different line widths or styles to separate components.

Charts and Graphs

Well-constructed charts and graphs make for effective statistical data presentation. The possible variations in design are endless, limited only by your imagination. The value of a good chart or graph lies in the statistic that we take in 75 percent of all information through sight.

Overcrowding, however, in charts and graphs obscures information and defeats the purpose of your graphic to display information quickly and simply. Information contained in a graph or chart must be accurate, timely and clear. These graphics help audiences reach conclusions.

Major components of charts and graphs include a title, scale (range of values), items being charted, legend, and source and preparation data.

Title – Same rules apply as in tables. It gives the audience the what, where and when.

Scale – The scale, or range of values, is usually listed on the left side of the chart or graph and shows the unit of measurement and numbers. The scale caption is derived from the title and must be shown. It is usually centered above or to the left of the scale.

Most scales start at zero and extend to the highest needed value.

If a scale does not start at zero, it gives a false impression, misleading the viewer.

The interval of value is also important. You should select an interval that makes the information appear clear and uncluttered. Usually the smallest value determines the interval.

Items being charted – These items are usually listed along the bottom of the chart or graph. The name of each is centered immediately below the line or space where its value is plotted.

Legend – The legend identifies the data plotted. The more types or trends of data, the more essential the legend. In the legend block, each type or trend of data is associated with a distinguishing mark – line or color. Generally, the legend is placed in the lower right corner

Source data – The source of the information is placed in the lower left corner of the chart as in a table. The source is essential, because without it, the chart loses validity.

Preparation information – The preparation data shows the data and the agency that request the chart in the lower right-hand corner of the chart.

Charts and graphs may be designed in several different ways; however, there are some basic charts from which all other charts are derived. These are the bar graph, pie graph, line graph, flow chart, and organizational chart.

OTHER FORMS of PROJECTED MEDIA

In addition to electronic presentations, other forms of projected media include overhead viewgraphs and 35mm slides. An overhead viewgraph is more commonly known as a transparency.

An overhead viewgraph, which is typically 11 x 8.5 inches, is projected onto a screen using an overhead projector. It is projected with the same ratio as a television or computer monitor – 4:3. When creating a viewgraph using today's most-popular software, the default size is 10 x 7.5. This size uses an aspect ratio of 4:3, where 2.5 inches is the unit of measurement.

Transparency film for copiers and printers is not very durable and is damaged easily. To prevent damage during handling, you should place it inside a document projector or mount it.

The quality of a viewgraph depends upon the resolution of the image and the resolution quality of the printer. The resolution of the image (number of pixels per inch) determines the smoothness of the printed or projected image. The resolution of a computer-generated image and a data projector is based on picture elements or pixels. Monitor resolution is 72 pixels per inch (ppi). Dots per inch, or dpi, determine the resolution of a printer and refer to the number of dots the printer is able to reproduce within an inch.

The more pixels an image has the smoother or detailed the printed image will appear. The higher the dpi of a printer, the greater the concentration of dots printed and the smoother the printed will appear. Most laser printer typically print at 300 to 600 dpi. When developing images for presentation, you should use 150- to 200-ppi resolution that will be printed to a transparency film for the overhead viewgraph.

Overhead projectors, once popular in classrooms and business conference rooms, have mostly been replaced by data projectors. Data projectors take images from a computer and display them directly onto a wall or big screen.

Data projectors are one of two types, portable or fixed. Portable projectors are generally smaller, less expensive, weigh less and are not as bright as fixed ones. They range from three to 20 pounds and cost between \$550 and \$6,000. Some portable projectors are small enough to fit in the palm of your hand. Fixed projectors are just that, fixed or mounted in a conference or presentation room. They typically weigh between 13 and 30 pounds and can cost anywhere from \$1,000 to \$25,000. The additional cost does mean increased quality in most cases. These projectors have at least 2,000 lumens, which mean these projectors can be used in a moderately bright room.

MULTIMEDIA AUTHORING AND ANIMATION

Some presentations created today take multimedia to a new dimension by providing a means of interaction between the viewer and the production. This process is known as authoring a movie and involves many stages. Movie is the authoring term for a project and will be used often in this section.

The authoring process takes a development team through multiple stages and builds a working prototype to demonstrate how a movie will work.

STAGES of AUTHORING a MOVIE

Movies are created in many stages. Most often these development stages are very specific. At times it may be hard to see any separation of the stages, but you should never leave any stage out. There are six general stages for authoring a movie, starting with the concept and finishing with the distribution and delivery. As you go through the stages, you may find yourself going back to certain stages to reevaluate certain aspects or to make decisions based on other stages.

Concept

The concept stage is sometimes referred to as the question-and-answer stage. When creating a movie, the three most important aspects to keep in mind are the target audience, the purpose of the product and the product itself. Before you create a movie, you need an idea and an audience.

You must also ask yourself about the comprehension level of your target audience, the purpose of the presentation (inform, entertain or educate), the format of the end product, and the desired delivery method.

Planning

Before you begin working on the movie, you have to know what you have to work with and when your customer wants the project completed. You must also consider your budget, your manpower, and your equipment (hardware, software, etc.). The next step in planning is to gather your content.

Organization and development are important elements of the planning stage and are keys to the success of the movie. During planning, you should also identify your topic, develop a story line, write a script and create a storyboard, most likely in that order.

A script is the written organization that details the scenes of your production. It should contain the who, what, when and where aspects of your planning. Script writing is similar to writing the story of your production and leads you right into the design stage.

Design

This stage begins with brainstorming; put everything you can think of for the design of your production on paper first. A detailed design plan needs to show what and where text, still images, sounds, animations, and video clips will be placed. A house or high-tech fighter plane would not be built without blueprints. The same goes for multimedia. The design work is not just for your benefit but also for your customers. By working with the customer with the blueprint, you can avoid issues later, because the customer can see ahead of time what his product will look like.

One of the best things you can do for your multimedia program is provide yourself with a script before you begin. A script for multimedia is typically set up to provide not only the dialogue or narration, but also the action, sound and music that is to take place at the same time. The scripting processing continues as the design team creates thumbnails, comprehensives (scamps), and storyboards, for every scene and prepares flowcharts of all the interactive connections in the movie.

Thumbnails are small, quick sketches used to work out general layout and structure within each scene. You can use a template or sketch thumbnails alongside the script. Both practices are common.

Scamps, or comprehensives, are pencil layouts of every scene that shows how the text and images will be positioned. People are going to be working from these plans, so they need to be descriptive and accurate.

Flowcharts organize the content. An informational flowchart is presented as a box diagram, with lines that show the access routes among its parts, a navigational blueprint. It shows how you plan to take the user through the movie. The flowchart shows links between scenes. The ideal flowchart is a clear, easy-to-follow specification of a program's topic categories, levels, and links.

Storyboards look like comic strips and are similar to scamps only with a lot more information to show how the elements appear in each scene. Storyboards list all actions and options of each scene, such as animation, moveable objects, audio, video, proposed interface, and navigational tools. Storyboards do not have to be elaborate, but they must show progression. Storyboards give everyone associated with the project a chance to share and understand the visual concept the director and writer are after. If a scene works on paper, chances are it will work in the program.

The best multimedia designs are transparent to the user. They create an environment where the user forgets he is relating to a machine and feels motivated to explore. Good design calls attention to the content of the production, rather than calling attention to itself. Screens and graphics will appear to have a texture that can be revealed by dramatic lighting effects. Colors should be harmonious. The movement through the program will feel comfortable, and users will easily learn how to work their way through the program.

Production

The production stage combines the planning and design efforts into an electronic media. Production includes recording, obtaining and creating images, sounds, and video, then saving these as source files to be used by all members of the team. Decisions are made on file names, formats and file structure for these source files. Good organization maximizes production time.

During production, you should also be visualizing final product, so most likely you will have to refer back to the concept stage. This will help you determine screen size, image sizes and possibly the frames per second (fps) rate of videos. Most movies will be made for show on a video or computer screen. With this in mind, you will more than likely make the screen 640x480 pixels and images no larger than 640x480 pixels at 72ppi. Videos run at 15 to 30fps. While the movie is being brought together, testing must be done to make sure it matches the designs and functions properly.

Testing

Testing is a never-ending, continuous process done throughout the development of the movie. All decisions should be tested and checked whether they are on paper or in the program. Proofreading the script, scamps and storyboards will help prevent embarrassing moments later. In the concept stage, you should have identified the target audience and system to be used for the movie. It is imperative that during the testing phase that you test your product with members from the target audience and on the target system to ensure you are reaching your mark.

A popular testing method is to use an independent, third-party tester. You give the tester a finished prototype and basic instructions. From this, the user should be able to understand and navigate through the movie. Third-party testers are usually used to find bugs missed during production. If testing is successful, it is time to move to the final stage – distribution and delivery.

Distribution/Delivery

Distribution, and/or delivery, of the product should be done only after the movie has been tested and all glitches fixed. Once the movie is generated, it will be distributed onto some type of media – compact disc or DVD, server or website.

CD-ROM (compact disc read only memory) – small optical disc made of plastic that stores up to 700 megabytes (MBs) of information.

DVD-ROM (digital versatile disk-read only memory) – a disc with a capacity of up to 25-times greater than that of a CD and offers digital-quality images for superior multimedia processing. DVDs store more than four gigabytes (GBs) of information. Following these steps will help you save time and money.

Key here is ensuring that the product you created is compatible for distribution.

INTERACTIVE MULTIMEDIA

Multimedia is typically divided into two categories, linear and nonlinear. Linear productions progress without any navigational control by the viewer, such as a cinema presentation. Linear follows a sequence of a line, starting at a beginning and running through to an end without jumping around. Nonlinear productions and presentations give the viewer or user navigational control, such as in a computer game or computer-based training. In other words, nonlinear multimedia is interactive.

Interactive media, like other forms of multimedia, integrates electronic text, graphics, video, sound, etc., into a structured digital environment that allows its audience to interact with the data. Authoring software is capable of providing the links that join these elements and make a multimedia movie interactive. The digital environment includes, but is not limited to, the Internet, telecommunication and interactive digital television.

There are four categories of interactive programs – presentations, catalogs, games and computer-based training. Your information, audience and project goals help determine the most appropriate design model.

Presentations – An interactive presentation is like show and tell, through which you have a story to tell or a message to convey. These presentations can be learning experiences for the viewer. To ensure the material is absorbed and the viewer is motivated to retain the information, the presentation must be memorable, entertaining, and most importantly easy to navigate.

Catalogs – Catalogs are used for direct access to information. Without leaving the home screen, the viewer can typically navigate through the presentation. Interactive catalogs employ a search engine and a transaction component. The search engine enables the user to access information from a text field or hypertext-linked index. The transaction component provides the user with the tool to actually select (and purchase) items.

Computer-based training – Computer-based training (CBT) includes any application that provides the user with a specific learning agenda. Information is absorbed by the user at her own pace, which allows her to advance through the presentation as she retrieves the information and qualifies it at each level. The two distinguishing characteristics of CBTs are simulation of real-life events and scoring. The ability to simulate real-life events is one thing that makes computer-based training so valuable. True CBT programs will include the ability to record user responses and measure user progress.

Computer games – Computer games are the foundation for most, if not all, of today's multimedia industry. The objective for computer games is to make the game more challenging as you progress through it and become more proficient.

Hypermedia is an example of nonlinear multimedia. It provides a structure of linked elements through which the user can navigate. The World Wide Web is an example of hypermedia, where hyperlinks help the user move from one website to another.

To navigate through a production means to move through the piece using interactive connections, comparable to a road map, blueprints. The user has selection options, buttons to click, such as a "next" button or an arrow.

Understanding the terms we associate with authoring will lend a better understanding to the principles of animation

PRINCIPLES OF ANIMATION

Animation is a series of graphic images that are displayed fast enough to trick our eyes into believing there is movement. If done well, animation can add a great deal to the movie. If it is improperly done or if there is too much animation on a single page, it can be distracting and annoying.

Animation is often a better choice than video in education and training, because animation can be used to simplify complex concepts. Animation is good for showing changes over time, transitions and transformations of elements, and relationships among objects. The movies we see in theaters and on television are just sequences of still pictures seen in rapid succession. Because the changes are relatively small, going from one picture to the next, we perceive motion. Essentially, animations are created by changing an arrangement ever so slightly from one frame to the next.

Cell Animation

The very first filmed animations were drawn – and filmed – frame by frame. This meant that an artist had to draw thousands of pictures even for a short film. Consequently, drawings in the earliest cartoons are generally not very sophisticated. Cell animation, also known as frame animation, was created in the early 20th century, making it possible to create feature-length animations.

With cell animation, a scene is divided into layers. Characters and props are painted onto clear acetate cells, which are laid over background paintings on an animation stand. A single background painting may appear for several seconds in a scene. Then, only the characters need to be redrawn from one frame to the next.

Time and money can be saved, however, by having multiple cells for the characters and props, separating the parts that change rapidly from those that don't. Also, cells can be reused as backgrounds and sequences (e.g. a "walk" sequence). Although cell animation reduces the amount of drawing needed, it also complicates the filming process — each frame is now an arrangement of pictures. To minimize the confusion that might arise, timing sheets keep track of the animation stand, the camera movements and the corresponding audio.

Key frames and Tweening

Some animators draw a sequence of pictures and have the resulting motion look the way they want. More often, an animator will first draw the frames showing key points in the action (key frames) and then draw the frames that make the transition from one key frame to the next (in-betweens). In large productions, the more senior animators draw the key frames, and then have others draw the in-betweens. Software available today can do some of this tweening for you. If your key frames show an object in different positions, or at different sizes, you can fill in all of the in-between stages. Tweening is the process of filling in the frames between the key frames to make the animation appear fluid.

Morphing

Morphing is a technique used with frames to create the illusion of one object changing into another. Morphing is generally created using a process referred to as shape tweening. Key frames are set and the computer generates the between frames. By displaying a series of frames that create a smooth transition, it appears that one shape actually becomes another. Although tweening and morphing are time consuming when done manually, creating frame-based animation is actually simple with a computer and animation software.

Other Types of Animation

Path-based animation is also known as vector animation. This type of animation creates animated objects by following an object's transition over a line or vector path. It tracks the beginning, direction and length that an object travels. The path the line takes can be straight or curved and can be drawn on a path.

Script-based animation uses programming languages to create animation. By using a set of program commands, frames can be substituted for other frames, thereby creating a sequence of movement or animation.

Constraints of Animation

Despite the great flexibility computer animation gives us, the medium does impose some constraints. Being aware of these constraints will help you to plan better animations.

When you zoom in on a raster image, each pixel in the image is mapped to several pixels on the screen. Because of this, the image will start to look like it's made up of little boxes. When you zoom out, only some of the image pixels get mapped to the display. Details can and do get lost.

A raster image is a fine grid that stores exactly one pure color for each grid square (or pixel) in the image. The computer displays a raster image by mapping image pixels to display pixels; that is, the color of a pixel on the screen corresponds to the color of one of the pixels in the image. A raster image contains no information about the object(s) that the picture represents.

Knowing the terminology and principles and becoming familiar with the authoring software in your shop are the first steps in becoming an effective multimedia illustrator. From there you will be well equipped to develop and create movies, training videos, and incorporate animation to your projects.

WEBSITES

The Internet and more specifically the World Wide Web have become so intertwined into our everyday lives that many cannot remember what life was like without it. However, to fully appreciate the power and complexity of the Internet one has to look at its humble beginnings.

During the Cold War in the mid-1960s, the need for a decentralized communications system was apparent. A concept to connect computers together throughout the country that didn't rely on a single route between two points was devised. This system was known as a "packet switching network", where data would be broken into "packets" and routed through the network on whichever path was available at the time of transmission. A packet is a unit of data which has been formatted for transmission over a packet switching network. With such a system in place, communication could take place in spite of parts of the network being unavailable.

Originally implemented for the government and a few universities, the Internet was an emergency military communications system operated by the Department of Defense's Advanced Research Project Agency (ARPA) and used for research in education and defense. This operation was referred to as ARPANET.

Over time, every U.S. university that received defense-related funding possessed ARPANET computers. Gradually, the Internet transformed from government purposes to a communications tool for scientists. As more scholars came online, the administration of the system transferred from ARPA to the National Science Foundation.

In the late 1980s, businesses began using the Internet and the administrative responsibilities were once again transferred. During this time, the foundation of the Internet was being expanded as the military and the corporate world upgraded their computers and networks to grow with the demand of new users. This infrastructure has grown from a few computers into literally millions of computers connected together using cables, phone lines, and even satellites to cover almost the entire Earth.

To communicate between locations through this large network, computers use a communication protocol known as IP (Internet protocol). This protocol, running on each computer connected to the Internet, ensures that communication breakdowns do not occur and the networked computers can communicate with each other and exchange data properly.

Every computer connected to the Internet has a unique IP address. If a duplicate IP address exists, an error is given to the computer using the same IP. To exchange computer information over the Internet, a computer protocol known as transmission control protocol Internet protocol (TCP/IP) prepares the data to be sent and received. TCP/IP ensures that a Windows™ network can exchange data with a Unix™ or Macintosh™ network and vice-versa.

Unlike telephones that exchange analog signals with a direct electrical connection, computers communicate by breaking the data into separate data packets. These packets are passed off to different computers and network routers across the Internet until the data arrives at the destination. Some of these data packets arrive to the browser at different times. The TCP/IP protocol reassembles the packets into data that Web browsers display as a complete Web page.

It is important to understand the difference between Internet and the World Wide Web. The Internet is the physical network made of smaller networks made by the connecting of computers on those networks. The World Wide Web (WWW) is a system for organizing data over a network. The WWW is the system that we use to communicate, publish content and share digital media on Internet.

The U.S. government controls the Internet's "root" — the master file that lists what top-level domains are authorized to operate on Internet. There are plans to transfer this responsibility to the Internet Corporation for Assigned Names and Numbers, or ICANN, which would be governed by an international community. Currently, there is much argument over whether a change in responsibility over Internet would be beneficial to the world or not, because of the many technical and cultural challenges this transfer has been delayed.

Unlike the Internet, no one entity is in control of the World Wide Web. Because the World Wide Web is considered open to the public, many developers can develop for, and utilize the web to publish content. What we usually pay for is the physical connection to the World Wide Web, any services we might subscribe to that reside on the WWW, or storage space we require online.

All laws pertaining to the World Wide Web and how content is governed are handled by local governments and authority over content for the web is handled geographically. For example, in Arabic countries, content is more strictly controlled and many western websites are not available to their citizens.

The future of the World Wide Web continues to brighten with every innovation. If you wish to know more about the World Wide Web and the guidelines for operating on the Web, click [HERE](#).

The ease of access to Internet and the World Wide Web has changed the way we use and exchange information. We can now keep up with the news, weather, and stocks with just a click of the mouse or an app on our cell phones.

Web 2.0

Web 2.0 changed the way users and designers use the Web. Web 2.0 sites let users to interact and collaborate with one another socially and professionally through user-generated content. This differs from static websites in that the viewer can do more than just browse through the content, which is created and controlled by the sites webmaster. Examples of Web 2.0 include social networking sites, blogs, wikis and video-sharing sites.

WEBSITE ESSENTIALS and TERMS

For Navy public affairs and visual information professionals, the Internet has become a vital part of our communication strategy. Through static websites, interactive websites and social media, the Internet now ranks up there with television, print productions and radio for telling the Navy's story. Although MCs use commercial social media sites on the Web, static websites are typically designed, created and maintained in-house.

Before you can design or administer a website; however, it is important to learn the concepts, terms and procedures used to create and maintain websites.

Governing Instruction

The governing instruction for website maintenance and development is [SECNAV Instruction 5724.47](#) (series), Department of the Navy Policy for Content of Publicly Accessible World Wide Web Sites. And, according to this instruction, the management, including oversight, of all content on official, publically facing Navy websites is a public affairs function.

So, before jumping in to create your command's website, it is imperative that you familiarize yourself with this instruction as well as all others pertaining to military webmasters. Policies for Web and other Internet-based capabilities (ibC) can be found on the [DoD webmaster page](#).

Web Browsers

A web browser is a client software program that resides on the computer you use to view pages and navigate through the World Wide Web. When you request a page on a website, your browser connects with a web server. The browser processes Web pages from the serve and displays the pages for you. Depending on your browser's features, you might be able to view or interact with multimedia files, read e-mail, shop online, or use other advanced features.

Browsers used today, such as Internet Explorer™, Mozilla Firefox™, and Safari™, display Web pages differently. As a designer, you must be aware of how different browsers behave by testing different sites and your own site on them.

Internet Service Provider

An Internet Service Provider (ISP) maintains the server where your computer sends requests as well as the space required to store your Web pages.

Web Server

Content available on the Internet is stored on Web servers. When you make a request from a Web server, an IP connection is made across the Internet between the client making the request and the host running the Web-server software. As soon as the Web server satisfies a request, the Internet connection between the client and the host breaks. A page containing images or links to other pages

all require separate connections. Often, it takes many requests to retrieve all the information on one Web page.

Uniform Resource Locator (URL)

Every piece of information on the Web has a unique address. This address is called a Uniform Resource Locator, or URL. A URL is an address that reflects the location of a file on Internet. This information might include a Web document, a file on a file-transfer site, or an e-mail address. A URL is made up of several parts (see figure 5-5):

- Protocol tells you how you are going to get to the information, such as with HTTP, HTTPS or FTP (file transfer protocol)
- The domain is the Internet host name, or the textual identifier, of the site
- The directory path is the place, or folder, within the site to locate the requested information
- The page name is the file name of the page you're requesting.

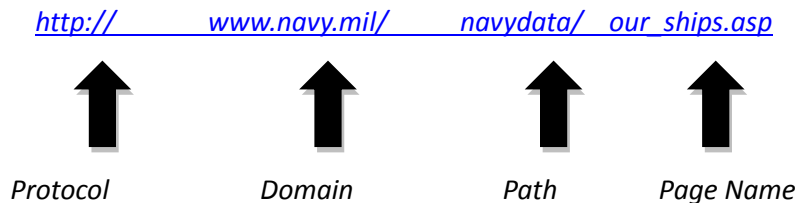


Figure 5-5, Example of Uniform Resource Locator (URL)

Domain Name Server (DNS)

The DNS system forms one of the largest and most active distributed databases on the planet.

When you use the Web or send an e-mail message, you use a domain name to do it. For example, the URL "http://www.navy.mil" contains the domain name "navy.mil", so does the e-mail address user@navy.mil.

Names like "navy.mil" are easy for people to remember. This isn't true for machines. For all computers connected to the Internet, an IP address is assigned to refer to that unique machine. For example, the machine that people refer to as "www.navy.mil" has the IP address 207.114.197.94. Every time you use the domain name, you use the DNS to translate the domain name into the machine-readable IP address.

New processes are being developed to keep up with the demand for needed URLs, as current methods cannot handle the number of required URLs.

ELEMENTS OF A WEBSITE

The Web is based on a set of rules for exchanging text, images, sound, video, and other multimedia files. The set of rules is known as the hypertext transfer protocol, or HTTP. Web pages are exchanged over the Internet because browsers and Web servers both understand HTTP.

A Web page is any page you see when you open the Internet. Every new screen you click on is a Web page. A website is a collection of Web pages. It can be made up of one page or millions.

A homepage is the starting point for your website. It is similar to a title page or a table of contents for a written document and it is the most common access point for the website. It also contains hyperlinks to subsequent pages within the site.

Within your website, you can also include a site map as a guide to the different pages through which your viewers can surf to find information. To view an example, check out the [site map](#) for the Navy Personnel Command's website. Typically, site maps display items hierarchically, breaking down the website's information into increasingly specific subject areas.

A website may also contain downloadable documents, images, video, text and more; you are limited only by your imagination (and regulations as to what can and cannot be posted).

HTML

Hypertext Markup Language (HTML) is a special language used by Web designers to format Web pages. HTML consists of a series of simple-to-learn tags that indicate page elements, structure, formatting, links, and more. Web browsers read these HTML tags and format the text and styles that appear on the viewer's computer screen. Tags are enclosed by the lesser than (<) and greater than (>) brackets and may be written in capital or lower case letters. (NOTE: An emerging alternative use of the term "tag" is to describe the classification of content by readers used with photos, blogs, etc.)

<pre><html> <head> <title>Your Page Title</title> </head> <body></pre>
<p><i>This area will contain everything that will be visible through a web browser, such as text and graphics. All of the information will be HTML coded.</i></p>
<pre></body> </html></pre>

Figure 5-6, Three main sections of HTML.

A Web page is made up of three main sections of HTML, each defined by a tag (see figure 5-6). The first is the html section. This area is defined by <html></html> tags. Everything between these tags is considered part of the Web page. The second section is the head section, found between <head></head>. In addition to the title of your page, you will also find keywords, page description information, special elements like cascading style sheets (CSS), and other information required to make the page display correctly. The last section is the body. This is where you will place items, or content, that will be seen by the viewer.

[DINFOS training](#) as well as online tutorials are available to help you grow your Web design skills, such as HTML coding. It is imperative that you stay up to date on current trends in Web design.

Plug-ins are software modules that add specific features or services to a larger system. HTML, although it does what it does well, does not have the innate ability to display a movie file or run a

video game. Plug-ins increase HTML's functionality. They are invisible to the user and are called upon whenever an element needs one. On the down side, plug-ins require you to work outside standard HTML and not everyone has access to the same plug-ins. Some of the most popular plug-ins are Adobe's Flash™ and Shockwave™, Apple's Quick-Time player™, and ActiveX™.

Cascading Style Sheets (CSS) is a style language used to describe how content appears on a screen. Content is the information you want to communicate to your user. Content comes in many forms – text, images, videos, and sound. CSS separates your content from the structure rules for how it will be displayed. Structure elements, for example, can dictate what color the text appears, where on the page and image is placed, or whether or not a border is displayed.

CREATING WEB PAGES

Your options for creating Web pages differ greatly from those for the printed page. If you design pages using HTML, you don't have complete control over how the reader receives the page, the size of the page, the width of the text column, the fonts, or size of text.

For this reason, you can use WYSIWYG Web-authoring tools vice HTML coding. WYSIWYG stands for "what you see is what you get." WYSIWYG editors have graphical interfaces that make writing HTML more like using a word processing or page layout program.

In the beginning, the goal of WYSIWYG authoring tools was to spare authors from ever having to touch an HTML tag. Today, their role has shifted toward making document production more efficient and automated while still providing access to the HTML source. An editor can help keep track of page links, images, files and folders and make sure all required files make it to the Web server when it's time to upload.

Having a WYSIWYG editor does not eliminate the need to understand how HTML or CSS works, but it does remove some of the pressure of memorizing large amounts of tags or rules. A good WYSIWYG editor should be able to write W3C (World Wide Web Consortium) standards compliant code and include software tools to assist in writing handicap-accessible sites.

Even though you don't have to enter the HTML tags to create your Web page with a WYSIWYG editor, you still need to know a few things about the capabilities of HTML and how they control what you can present on your page.

Stages of Web Creation

The process of developing a website is no different than developing any type of media project. Many of different elements and resources need to be determined throughout the project. Each stage of authoring helps the authoring team to properly accomplish long term goals. Let's take a look at the different stages of authoring — concept, planning, design, production, testing, and distribution/delivery.

Concept

Like other multimedia projects, you have to have an idea or concept in mind before you begin developing a website. You must also consider your customer, your audience and the purpose of the site. Will the site be for informational purposes only, or will it be used to educate or entertain?

Planning

After you have an idea, a purpose, and you know your target audience. You must plan, schedule, and account for any resources, before you can begin the design phase. You must also know when your customer wants the project completed.

Design

You have probably heard the phrase, "It's not finished until the paperwork is done." In website production, "You haven't begun until the paperwork is done." is more true. Before you begin full production and begin putting things together in your website, it all needs to be on paper first. Most websites start with drawings, such as with storyboards in multimedia authoring and videography.

Web designers also use flowcharts when putting together sites. A flowchart is the navigational control to your website, and it is the plan of how you will take the customer through the website. Most flowcharts start by placing the scamps (small images that represent the content) into an organizational chart like pattern. The flowchart is then used to organize content and show the links between screens in your title. When creating the interface and navigational controls, you must again look at the concept stage and keep the user in mind.

The interface design and controls should be intuitive, or feel natural, simple and consistent. . Another consideration in the design phase is style. Consider how colors, photos, illustrations and backgrounds will be used. Color and shape have a lasting effect on the end user and are often overlooked. The design work you do now not only benefits you, but also benefits your customers as well. . Remember, your customer is the final decision maker. At this point, if the design isn't right, you have only exchanged paper.

Production

With the design work accepted and the concept in full view, it is time to begin production. The production stage is where the pieces of the site begin to come together. Each person on the production team begins to gather raw files and prepare them for production. The source files are brought together and placed where they can be used by all members of the team. The obtaining, and creating of images, sounds or even video will continue throughout the production phase. It is in this stage, as you recall, where you also build your file structure to best organize your items.

Testing

Testing, as with all multimedia products, is vital to a website. Testing can happen at any point along the stages of authoring. Testing websites can be a challenge, since you have to test on a wide variety of machines and browsers. Always test your site in more than one browser, and on more than one computer – newer computers and older models as well as computers that run on different operating systems. It is also important to have someone unrelated to your project team test your site. One bad link can ruin a user's experience with your site and reduce the effectiveness of your site.

Other items to consider when testing your website:

Logical appearance – Does the site communicate its purpose well? Can I tell what this site is about at first glance?

Ease of navigation – Does the site navigate logically? Is the content on the site broken up logically? Are the subpages (links) retrieved with ease?

Broken links – When you click does it go where you thought it should? Do documents, images and/or videos load properly?

Too much or too little information on a single page – Is the page too crowded? Is there too much dead space?

Usability issues – Any and all usability issues should be looked at and corrected as early as possible. Test, test, test your site.

Distribution/Delivery

When you have completed all other processes and your customer has reviewed and approved the site, you go live with the site and begin advertising it. Remember, you must ensure you have read all required policies and instructions to ensure you are compliant. It is most likely that your client (leadership) will be unaware of these regulations, so it is in your best interest to have such knowledge.

Layout and Design

An HTML page is one column of continuous text with graphics that flow along with the text, as if they were text characters themselves. This text-stream model limits control over page layout; for example, it controls how you can set up layouts that use multiple columns, layered text and graphics, or rotated text. The text model means page proportions and line breaks will vary depending on size of the monitor or window in which the page is viewed, and the preferences set in a Web browser. As a rough guideline, you might design for the line length produced by a Web browser using a default font on a 640-480 pixels screen.

Using HTML, you cannot specify a precise horizontal and vertical position for a graphic. For example, if you position a graphic at the bottom right of a page as it appears on your monitor and a reader decides to make the window narrower, the graphic probably will move to the next line down and may end up on the left side of the page. The only way to constrain a layout is to place everything into tables. You can also use WYSIWYG — authoring software.

As for deciding where to put the information, it is best to follow the same principles you would use when creating multiple page layouts (see above). However, there are some elements that are specific to Web design.

Text

When placing text on your website, you should refer back to the do's and don'ts for page layouts and electronic presentations, previously mentioned in this chapter. These rules have been refined for years, and they work well. It is also important to consider placement of text. Centered text is hard to read. Left-justified text, where text is lined up on the left side of a page, is the best practice. Titles and similar elements can be centered, however, to show emphasis.

Other tips for using text include ...

- Use uppercase and lowercase letters, vice ALL CAPS, except with titles or items you are trying to emphasize
- Italics should only be used to draw attention to text. Overuse makes text hard to read
- Overuse of bold text minimizes its affect, and like italics, decreases legibility

- Keep terminology simple and easy to understand. Remember your audience.

Graphics

When you're considering what images to include, keep in mind that images take longer to download than text. Some browsers don't display graphics at all, and some readers turn off graphics to speed up their browsing. You should also keep image file sizes as small as possible by reducing the image size and the number of colors (the color palette) of the images.

You want your homepage to load very quickly, so no graphic should be so large it takes a long time to download. In Web design always be aware of your download speeds. Be sure to resample or reduce the image resolution in an image-editing application. Scaling an image in a WYSISWYG editor does not change its file size and won't speed downloading. You can use an image-editing application to resize or resample high-resolution images. A resolution of 72 pixels per inch is high enough for most images, because it is the resolution of most Web users' monitors. Ensure you use a compression method and save in the graphic in the correct file format.

Data compression is storing information in a format that requires less space than usual. Data compression is particularly useful in communication because it enables devices to transmit the same amount of data in fewer bits. It is important to consider what images to include in a Web page. It is imperative to learn how to correctly compress files to effectively transmit data via the Internet.

There are basically two types of compression methods for images, lossy and lossless. Lossy compression creates smaller files by discarding some information about the original image. It removes details and color changes it deems too small for the human eye to differentiate. Lossless compression, on the other hand, never discards any information.

The graphic file formats most browsers support are Graphic Interchange Format (GIF) and Joint Photographer Experts Group (JPEG). GIF is a lossless compression method, while JPEG is a lossy compression method.

GIF is the best used with illustrations with areas of solid color, such as line art and logos. GIF formats compress files by reducing repetitive areas, such as large areas of solid color. The more repetition in an image, the more the image can be compressed. This format uses a palette of up to 256 colors to represent the image, and supports background transparency.

JPEG is designed to preserve broad color range and subtle brightness variations of continuous-tone images, such as photographs and images with gradients. This format represents images using millions of colors, thus yielding the best results for compressing full color photographs.

PNG, Portable Network Graphic, was designed specifically to outperform and replace GIF. PNG can match 99 percent of GIF functions. PNG files are typically larger than JPEG or GIF images because a PNG file does not include JPEG's lossy compression, and it can contain more colors than a GIF. So PNG is best suited for small images, navigation buttons, and thumbnails with fine details you don't want mangled by JPEG compression.

Web Links

The most significant difference between a printed page and a Web page is a link, which lets you arrange pages in a website. When you click a link, the Web browser jumps you to the page set as the link's destination.

Links appear as specially marked text or images on a page. Each page can have several links, with each link leading directly to another page within your site or to pages on any other Web server in the world. There are three different types of links – a link within the same Web page, a link to another Web page within the same website, and a link to another website.

Section 508 Law

Accessibility of your content is not only good practice it is the law. As federal employees we are obligated to make our website content accessible to people with disabilities. In 1998, Congress amended the Rehabilitation Act with Section 508 with the intent to breaking barriers for people with disabilities so that they have the exact access to information as other citizens. Under Section 508 (29 U.S.C. '794d), agencies must give disabled employees and members of the public access to information that is comparable to the access available to others.

Accessibility is not a hurdle that you must overcome. In fact, by designing and keeping accessibility in mind you are more likely doing a better job of communicating, period. If you are already designing with W3C standards then accessibility is almost automatic.

Find out more about accessibility, Section 508 standards, and incorporating 508 compliance into your design by exploring the Web-based course "Designing Accessible Websites" on the [Section 508 website](#). This site provides full online training courses and contact information to 508 coordinators for your organization.

SUMMARY

In this chapter we discussed multimedia and how bringing together graphics, images, text and video can be incorporated into your public affairs and visual information plan. More specifically, you learned about digital graphics, multiple page layouts, movie authoring, electronic presentations and websites.

As an MC, it is important to keep your audience in mind when creating your project. All of your creativity and originality will be wasted if your message does not reach your audience. Simplicity and legibility are the keys to an effective presentation.

Further training in multimedia is available at DINFOS via such courses as the Basic Multimedia Illustrator or Digital Multimedia courses or by working on the job with a Shipmate who already possesses these skills. For more information talk to your supervisor and visit the [DINFOS academics Web page](#).

CHAPTER 6

PRINT PRODUCTION

Learning Objectives: Upon completing this chapter you should be able to do the following:

- Describe desktop publishing.
 - Identify different types of desktop printers.
 - Explain the processes of mat cutting and print mounting.
 - Explain binding and finishing.
 - Describe characteristics paper.
 - Describe job control and job order logs.
-

INTRODUCTION

In 1440, Johannes Gutenberg developed what is arguably one of the most important inventions in modern times, a mechanical moveable-type printing press (see figure 6-1). Today, print production continues to be as an important an industry as ever before in disseminating information. In the Navy, operation of today's print production belongs in the hands of mass communication specialists.

As an MC, you will also need to have a basic understanding of printing. In this chapter will discuss the various methods you'll use to produce posters, programs, newsletters and training manuals. These valuable communication products add yet another tool for delivering the Navy's message.

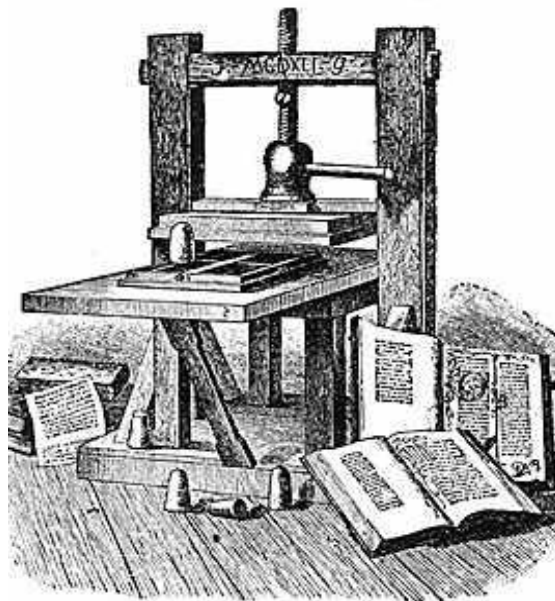


Figure 6-1, Illustration of first printing press, invented by Johannes Gutenberg around 1440.

DESKTOP PUBLISHING PROGRAMS

The term desktop publishing (DTP) came to light in the 1980s upon development of a specific type of software for creating materials for print; however, desktop publishing today encompasses more than just print communication and uses many different types of software. As technology improves so does the capabilities of the software programs we use.

One thing to keep in mind when learning about DTP is that it is easy to confuse DTP with graphic design. MCs use programs like Adobe Illustrator™, Flash™ and Dreamweaver™ to develop concepts, ideas and arrangements for visually communicating a specific message. The *mechanical process* you'll use to turn those ideas of newsletters, posters, and other projects into digital files for printing is DTP.

DTP software is used to create materials for visual communication. Most of the DTP software capabilities can be broken into three basic categories – composition, layout and graphics. These categories combine to make a comprehensive package for designing and publishing multimedia material.

COMPOSITION

Composition defines the sizes and styles of type, the amount of space between horizontal letters and vertical lines, and the coding of the text copy to meet standards. You can edit text directly or input text from documents created in a word processing program and imported into the DTP software.

LAYOUT

Layout, as has been discussed in previous chapters, involves the arrangement of text and graphics on a page. Electronic pasting moves text from one portion to another and incorporates illustrations into the text. Some features include multiple columns, column widths, and gutter space manipulation, printing vertically or horizontally on a page, automatic copy fitting, automatic page numbering, and adding headers and footers.

GRAPHICS

Desktop publishing software can scan or import illustrations/graphics from hard copy or digital data via scanners or other programs as well as add images, borders, lines, arrows and more. You also can alter or edit images by shrinking or expanding them to create a layered four-plate color separation for color reproduction.

DESKTOP PRINTERS

Printers provide a hard copy printout of data stored electronically inside the computer or from a disk. Many printers are primarily used as local peripherals and are attached by a printer cable or, in newer printers, a USB cable to a computer that serves as a document source. Some printers, commonly known as network printers, have built-in network interfaces, typically wireless and/or Ethernet-based, and can serve as a hard copy device for any user on the network. Individual printers are often designed to support both local and network connected users at the same time. In addition, a few modern printers can directly interface to electronic media such as memory cards, or to image capture devices such as digital cameras, scanners; some printers are combined with a scanners and/or fax machines in a single unit, and can function as photocopiers.

DIGITAL PRINTING

Digital printing is printing using digital techniques developed for computer printers such as inkjet or laser printers. The process differs from lithography, flexography, gravure and letterpress printing in several ways:

- Every print can be different, because printing plates are not required, as in traditional methods
- There is less waste chemical and paper, because there is no need to bring the image "up to color" and check for registration and position
- The ink or toner does not permeate the substrate as does conventional ink, but forms a thin layer on the surface and may in some systems be additionally adhered to the substrate by using a fuser fluid with heat process (toner) or UV curing process (ink)
- Because there is less initial setup, it is useful for rapid prototyping, and cost effective for small print runs.

Digital printing is used for personalized printing or variable data printing (VDP or VI), for example personalized children's books, which are customized with the specific child's name and images. Print-on-demand (POD) systems also use digital printing, for short run books of varying page quantities, and binding techniques.

Digital prints can also be done on photographic paper, exposed with RGB laser lights from computer files, and processed in photographic developers and fixers. These prints are continuous tone images and have the dyes imbedded in emulsion layers within plastic coatings. They can be very archival.

Photographic papers are available in a variety of paper surfaces, such as matte, semi-matte, luster, high luster, pearl, and glossy. The use of different paper surfaces depends on the final application of the print. There are two paper surfaces that are used frequently in Navy imaging facilities: glossy and matte. Paper that has a smooth, glossy surface provides a print with higher contrast and higher densities or color saturations, resulting in an apparently sharper image. This is due to the direct reflection quality of the paper surface. Glossy papers are always used for photographic prints that are used to show fine detail, such as equipment damage or intelligence photographs.

Light reflected from matte paper is diffused and provides a softer, lower contrast image. Because of the lower contrast, subject detail does not appear as sharp as an image on glossy paper. Matte papers are used commonly for portraiture and scenic photographs.

PRINTER TYPES

The ink-jet, Noritsu™ ink-jet, laser, thermal transfer, continuous tone die sublimation, and color phase change are nonimpact printers that you may find in a Navy shop.

Ink-jet Printers

Ink-jet printers' spray electrically charged ink through tiny nozzles in the printing element. The ink passes through an electrically charged field that forms the image in matrix form. These printers offer very high-quality resolution and print up to 300 dots per inch (dpi).

Noritsu Ink Jet Printers

Noritsu ink jet printer is the high-quality, digital-imaging equipment ideal for compact space and does not use photographic chemical and solution to develop prints. Noritsu is unique among companies that produce one-hour photofinishing equipment in that they do not produce consumer photographic products, such as film, photographic paper and chemistry.

Laser Printer

A laser printer directs a beam of light that electrically charges an image on a photosensitive drum. Toner attracts and adheres to the dots on the drum and a heating element fixes the image on the paper. These printers can print in excess of 20,000 lines per minute.

Thermal-Dye Transfer Printers

Thermal-dye transfer printers are often called dye sublimation or dye-diffusion thermal-transfer printers.

This system provides high-quality and an environmentally safe method of transferring images to print and transparency materials without using chemicals.

The thermal-dye transfer printing process uses thousands of tiny heating elements that come in contact with "donor ribbons." Each donor ribbon releases a gaseous color dye when heated. Three-color printers have cyan, magenta and yellow ribbons (CMY); four-color printers also include a separate black ribbon (CMYK). The amount of heat from each element controls the amount of dye being transferred to the print material. The blend of the gaseous colors creates a continuous-tone image.

The quality of a thermal-dye transfer print resembles a print made from conventional silver-halide paper. The resolution of thermal-dye transfer printers ranges from 160 to 300 dpi. Resolution is limited by the thermal printing head. Thermal-dye transfer printers can produce prints from 3.5 by 5 inches up to 14 by 17 inches.

Color Phase Change

A color phase change uses Pantone certified colors in a wax medium. Like continuous tone dye sublimation, this is a thermal transfer, but it does not require specially coated paper.

REPRODUCTION EQUIPMENT

A Navy graphics shop contains a wide variety of equipment necessary to produce a variety of high-quality products, from books, posters, brochures and invitations. To use the equipment effectively and safely, you must have a working knowledge of its characteristics, limitations, and operating and maintenance procedures. However, before using any such equipment it is imperative for safety and efficiency to ALWAYS review user's manuals. Know the equipment before you begin production!

DIGITAL DUPLICATION

Digital duplicator is a high-speed digital printing system designed mainly for high-volume photocopying and printing. When printing or copying multiple quantities (generally more than 20) of the same original, it is typically far less expensive per page than a conventional photocopier, laser printer or inkjet printer.

In 1986, the RISO™ Kagaku Corporation introduced the Risograph digital duplicator. It uses duplicator technology but improves on it; it improves upon the traditional mimeograph machine in that the operator does not have to create a stencil. The stencil, called a master, is made by use of a scanner and thermal print head. Also the master is automatically removed as a new one is created and placed in a disposal box. This way the operator should not have to touch the used master material that is coated in ink.

A digital duplicator like the RISO™ is often more cost-efficient than a copier, especially when duplicating high volumes. For smaller print runs the main cost is in the master material. This ranges between 40 and 80 cents per master, depending on the manufacturer. When spread over 20 or more copies the cost per copy is close to photocopiers at 2 to 4 cents. With every additional copy, the costs decrease. At 100 prints the master cost per copy is only .004 to .008 cents per copy, and the cost of the paper printed upon begins to dominate. A master is capable of making 4,000 to 5,000 prints.

The RISO™ has five selectable print speeds (60 to 130 sheets per minute) and a scanning resolution of 400 dpi. It can scan documents for reproduction ranging in size from a business card (2" x 3.5") to ledger size documents (11" x 17"), with an output size ranging from 4" x 6" to 11" x 17". The RISO™ also has a capacity of up to 1,000 sheets of 16-pound bond and can accommodate various substrates ranging from 13-pound bond to 110-pound index stock.

PAPER RECOMMENDATIONS

Print production is more than just reproducing words, images and graphics on a piece of paper. It's about conveying a message and delivering information to an audience. The paper you choose to print your product, therefore, becomes as important as the message, because people can hold the paper in their hands and become familiar with it. The paper is an important part of the overall product.

As you read above, with today's cost-effective, high-volume printers, paper often becomes the most costly portion of print production. So, understanding paper and picking the right paper is of the utmost importance.

Paper is typically defined by its finish, grade and basic weight.

- *Finish* refers to the texture of the sheet. Is it coated or uncoated? Is it smooth, woven, ribbed, glossy or matte
- *Grade* describes the papers classification based upon the type of pulp used, paper treatments, and the end use of the paper. Common paper grades include bond, book, Bristol, cover and newsprint.

—Bond paper is lightweight, high-quality, durable writing paper used for letterhead and stationary.

—Book paper is used when publishing books, as the name implies.

—Bristol paper, named for the town of Bristol, England, is used for brochures, tickets, tags, paperback book covers, file folders and more.

—Cover paper is thick and durable. Also referred to as card stock, cover paper is used for business cards, postcards, playing cards, catalog covers and scrapbooks to name a few products.

—Newsprint is low-cost paper used to print newspapers and other advertising material.

- *Basis Weight* of paper is measured in pounds. The weight of 500 sheets, which is equals a ream of paper cut to a standard size, is its basis weight. And the basis weight is not the same for all paper grades. For example, a ream of letter-size, all-purpose paper you use with your desktop printer may have a basis weight of 20 pounds. This doesn't mean that the ream weighs 20 pounds. It means that with 500 17 x 22-inch sheets of that particular paper weighs 20 pounds.
- *Paper density* is also an important factor to consider when choosing paper for your product. Paper density is a measure of area density. For example, paper that lets in little or no light (poster board) is said to be dense or heavy. Paper that lets in a little bit of light is lightweight.

DIGITAL DUPLICATING TIPS

Photo / Half-Tone Processing

If the original you are duplicating contains photographs or half-tone images, or a multi-colored original is used, select PHOTO or DUO processing by holding down the LINE / PHOTO key on the machine. The current selection will appear in the main display. Since the image is processed graphically, degrees of shading are accurately reproduced.

Producing Enhanced Fine Lines

When producing fine lines, press the IMAGE PROCESSING SELECTION key in the sub-control panel. When this feature is selected, the corresponding indicator lights and "FINE" will appear in the main display. If the original has a colored background, this background may show up on your prints. In that case, cancel this feature. This feature is not available in the duo-processing mode.

Changing Image Contrast on Prints

To achieve different tones on printed copies from those of an original, adjust the scanning contrast manually by canceling the auto-scanning contrast adjustment mode. When this mode is selected, the auto-adjustment indicator will light up. In this case, the scanning contrast will be adjusted automatically according to the darkness of the original being scanned.

Changing Print Density

When the density indicator is lit, you can change print density by manually adjusting the lighter or darker keys. When the print density setting is changed, press the TEST PRINT key to check the results with proof copies.

Note: if the print density levels do not provide the desired result, adjust the scanning contrast and create another master.

Adjusting Horizontal and Vertical Print Positions

The print position can be adjusted vertically (up and down) a maximum of up to +/- 3/4" (20mm) depending on the model used and horizontally (right and left) +/- 3/4" (20mm).

Storing Setting in Memory

The memory feature is flexible tool for automating frequently used or complicated combinations of settings. You can store up to 20 combinations of frequently used or complex print-job settings and apply them to new print jobs whenever necessary.

Protecting Confidential Documents

After printing is complete, the master remains on the print cylinder (drum). Copies of this master can be printed at any time by pressing the START key. To protect confidential documents from unauthorized duplication, press the CONFIDENTIAL key to discard the master after printing.

Return to Initial Settings

To return all the settings to initial status, including print position and reproduction percentage, turn the power off and on again, or hold down the ALL RESET key for more than one second.

Changing Print Color

To print with an optional color cylinder (drum), simply remove the existing cylinder (drum) from your Risograph and replace with the color of choice. When a print cylinder (drum) other than the black one is in place, a "color" message will appear in the main display.

Replacing the Master Roll

If the leading edge of master roll is inserted too far beyond the green films, the excess portion will be automatically cut off. If the strip that has been cut off remains inside the machine, an advisory message will appear in the main display to advise you to remove it. Be sure to remove the cut-off strip.

Preventing Defective Prints

Clean the thermal print head after every two master rolls. Lift up the scanner table and open the master loading unit. Then gently wipe the thermal print head (inside the unit) several times with a soft cloth or tissue dampened with a small amount of alcohol before wiping the thermal print head.

If the machine is not used for a long period of time, ink on the surface of the print cylinder (drum) may dry. Dry ink on the print cylinder (drum) may cause faint or blurred printing.

Using accessories

The *Digitizer III* can be used to edit and adapt originals to be scanned and printed. You can divide an original into areas to create customized prints, using editing features such as framing, screening, outlining, stamping, and reversing. This accessory also provides a feature making it easy to create multicolor prints.

SCANNERS

A scanner allows you to copy a photograph, a drawing, or a text page into the memory of the computer. It does this by measuring tonal or color values and converting them into a binary code that the computer can digest. You may then "clean-up" the image using the appropriate software program before printing a final copy for reproduction. A scanner is particularly useful for copying large amounts of text or images not previously saved on disk that now require revision. When using a scanner, be careful not to violate an existing copyright. To review copyright restrictions, review the SECNAV instructions for [copyright and visual information responsibilities](#).

The four types of scanners are the hand scanner, the flatbed scanner, the copystand scanner, and the slide scanner.

- **Hand scanners** are useful for small-quantity scanning. They read portions or excerpts from a document page into the memory of the computer
- **Flatbed scanners** scan pages out of a book. They scan an entire one- or two-page spread in one view
- **Copystand scanners** are capable of scanning three-dimensional objects
- **Slide scanners** scan slides and transparencies into memory. Scanners used to scan slides and transparencies require a mirrored or reflective attachment.

BINDING AND FINISHING

Binding and finishing is the final stage in creating a printed product. The work required for turning printed sheets into books, magazines, catalogs and booklets is classified as binding. The specialized production of displays, labels, tags, packaging, and a variety of other advertising materials is classified as finishing. Embossing, stamping and other decorative touches used to enhance a book's design also fall into the finishing category. Binding and finishing may be completed at a single facility or by separate suppliers of specific services. Some printers have in-line binding or finishing units attached to their presses, some purchase and use dedicated binding and finishing machinery, and others rely on the services of outside firms.

PAPER CUTTER

The most abused tool in the shop is the paper cutter. Because of this abuse, do not trust the scale at the top of the cutter for accuracy. When you use the cutter, do not force it to cut more material than it can easily handle. Cut only paper or light cardstock. Paper cutters come in a variety of sizes with the most common measuring 36 inches in blade length.

GUILLOTINE CUTTERS

Guillotine cutters are used to square blank sheets before printing and separate printed sheets before binding. These machines are available in a number of models and sizes, but all have several similar components: a knife, cutting stick, table, side and back gauges and a clamp (see figure 6-2).

The cutter's long, heavy knife, which is bolted to a bar mounted near the front of the machine, descends to the bed, slicing through a stack of paper. When properly set and adjusted, the knife will cut through one sheet of paper the full length of the blade and barely rest upon the cutting stick evenly. The knife bar snubber holds the knife in its up position, while the cutter is idling or if the cylinder

becomes worn. If the knife drifts down from its up position, an adjustment is necessary. The knife angle, also called the bevel, is determined by the characteristics of the material to be cut. Hesitation during cutting is an indication of an incorrect beveling of your blade. Consult your operator's manual for sharpening specifications. Different knives are manufactured for materials of varying hardness.



Figure 6-2, Guillotine cutter

Another important cutter component, the cutting stick, is inserted into a groove on the cutter table immediately beneath the cutting knife. Were it not for the cutting stick, the knife would become dull easily or even break because it would hit the metal cutting table every time it sliced through a pile of sheets. Regularly rotate your cutting stick (up to eight times per stick) to ensure a clean cut and long-lasting knife edge.

Side and back gauges position sheets accurately under the knife, squaring them before cutting. The side gauges are stationary, while the back gauge can be moved to accommodate various cut-off lengths. A back gauge that is divided into two or more segments is called a split gauge and allows for the trimming of booklets on more than one side at a time.

Positioning the Back Gauge

To position the back gauge, turn the handwheel located in the center of the table and move the back gauge back and forth. Then, read the distance on the tape and move the back gauge past the size needed. You should stop and return the back gauge forward to the mark. By going past the mark and coming back to it, you take the slack out of the back gauge screw and have an accurate cut each time.

To lock the back gauge in place to prevent it from moving while you are positioning paper, tighten the locking thumbscrew. Avoid continuous heavy jogging against the back gauge of the cutter as this can knock your back gauge out of square. To make stock slide as easily as possible on the cutter table as well as maintain and preserve the cutting bed, wax the table with paste wax.

The cutter clamp is a metal bar that runs parallel to the knife and, like the knife, is placed at a 90-degree angle to the table. It has two functions. First, it expels air from the pile of sheets prior to cutting. Secondly, it holds the pile firmly in place during the process.

FOLDING

Some products you will create in your shop will require folding. This includes, but is not limited to, pamphlets, maps, brochures, and programs. After printing these products, the sheets are folded into **signatures** that may consist of four pages, eight pages, 16 pages, or some other multiple of two. These jobs are said to be **folded to print**. Press sheets with printing only one side of the form are **folded to paper** because backup register is not a consideration (see figure 6-3).

Machine folding employs one of two basic folds: a right angle or a parallel fold. The right-angle fold is made by first folding the sheet in half and then rotating it and folding it in half again. Additional right-angle folds follow this sequence. A basic parallel fold is made by folding a sheet of paper twice so that the two folds are made in the same direction. A variety of configuration can be made from right-angle and parallel folds, including accordion folds, signature folds, gate or panel folds, over and over folds, French folds, and letter folds. Folding is completed on a variety type of folders. A combination or table top folder is what is most often found in the Navy, which incorporates features of both buckle and knife folders in one machine.

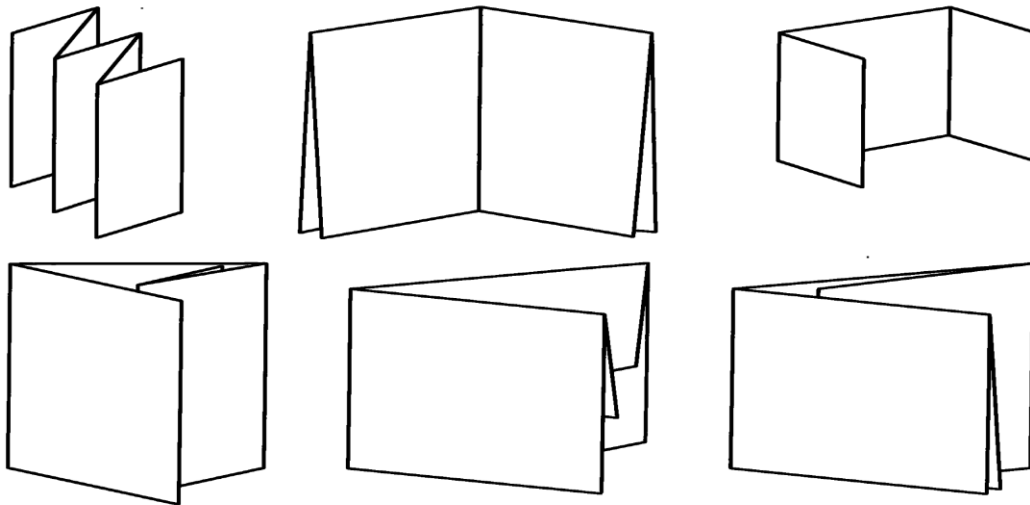


Figure 6-3, Common folds (left to right, top to bottom): accordion, eight-page signature, gate, over-and-over, French with heads in, and letter.

Combination Folders

The combination buckle plate/knife folder ("combi") integrates buckle and knife folding. Parallel folds are executed with buckle plates in the first folding station and subsequent right-angle folds are produced in the knife folder section. To create folds parallel to the first right-angle fold, buckle plates are also used. Conveyor tapes forward the sheets through the folder.

Combination machines are ideal for folding medium-size sheets, which often require a variety of different folds. They work well with heavier stock because the thick bulk does not have to pass through as many rollers, and paper grain direction is less of a problem.

PAPER DRILLS

Paper drilling is basically drilling large quantities of paper, or other materials, with round holes. Paper drills can be manual, motorized or fully automated. During the paper drilling process, hollow paper drill bits are clamped into a driven spindle which drills into the pile of paper. Paper drill bits are available in different sizes and with different coating qualities.

Depending on the type of paper drill, either the paper drill bits are lowered into the pile or the table is lifted. Paper drilling machines can be equipped with a different number of spindles which are each built into one paper drill head. The range starts with one- and two-spindle paper drills for small volumes and office purposes and reaches up to paper drilling platforms with more than 20 spindles and paper drill heads.

Applications for paper drilling are file holes for different ring binders, loose-leaf collections, rows of holes for wire comb binding and tags. Many products processed on a paper drilling machine are stationary. Additionally catalogs, manuals and brochures are drilled on a paper drilling system to be able to file them in a binder.

BINDING METHODS

There are several different binding methods; however, in this manual we will discuss the four contemporary binding specialties – mechanical, adhesive or perfect, saddle- and side-wire stitching, and thread sewing, which involves case binding. Of the four specialties, mechanical and saddle and side stitching is most commonly encountered in the Navy.

Mechanical Binding

In mechanical binding, wire or plastic coils, plastic combs, or metal rings are used to permanently join individual sheets of paper together as books or booklets, with the independent binding device often forming the backbone of the publication. Mechanical binding can be costly, but it allows the product to open flatly. A notebook is an example of mechanical binding.

Adhesive Binding

Adhesive, or perfect, binding done in the small Navy print shop is not the same as that done in large commercial print shop binderies, which specialize in that kind of work. Bookbinding is an art in itself. Therefore, it has no place in the small-job shop. However, almost all print shops do the simpler forms of adhesive binding, called padding, which is a standard operation in any small print shop. Padding is the process of making pads or tablets by cementing the edge of the stack of sheets. A pad generally consists of from 50 to 100 sheets of paper and chipboard back.

Saddle and Side-Wire Stitching

Brochures, pamphlets, and thin magazines bound with staples driven through the centerfold along the backbone are some examples of items saddle stitched with wire. This type of stitching is typically the most economical, and like mechanical binding, it allows your products to open flatly.

Products side stitched with wire are fastened together by inserting preformed staples through the side of the booklet or brochure parallel to the backbone. It is important to distinguish between stitching, in which wire is used, and sewing, which relies on thread to secure the signatures (pages) of a publication.

Saddle and side stitchers range from small hand or foot-powered models to large automated machines. Signatures to be side stitched are stacked (gathered) one on top of the other, much as signatures are stacked for perfect binding. Saddle stitched signatures, on the other hand, are inserted, meaning that outer signatures are dropped over inner ones. Saddle stitching, remains the best method of joining publications that are up to ¼ in. (6mm) thick.

Thread Sewing

Thread or cord is used during the thread-sewing bindery process to stitch a book together. Adhesives are also used. After the thread sewing is complete, the book covers are attached using the case binding technique. This process is the most-expensive of the binding processes, and it is usually reserved for hardback books, fine literature, and reference books.

MAT CUTTING AND FOAM BOARD MOUNTING

A mat is a border made of paper or illustration board that compliments as it surrounds an image. Matting a picture is done for protection, ease of handling, framing and appearance. Before displaying or presenting a certificate, a photograph, or a piece of artwork to an individual, you should mount, mat, and if possible, frame it.

Mats

A mat focuses your attention on the image within the mat. When used in a frame, mats protect image surfaces from direct contact with the glass that may trap moisture and cause mildew. When used alone, mats protect image areas from fingerprints and smudges.

Tools

To cut a mat requires skill and patience. You need a pencil, a rule, a steel straightedge, a crafts knife with a sharp blade, sandpaper or an emery board, tape, a mat board, and a backing board. You may be fortunate enough to have a handheld mat cutter or, better still, a carriage-type mat cutter.

Mat Cutter

The two basic types of mat cutters are handheld mat cutters and carriage units. Hand-cut mats require great skill and a steady hand. Carriage units ensure uniformity, speed and accuracy. Carriage units cut oval, round, rectangular, square and fancy-cut mats. They may be large and mounted on a wall or they may be small tabletop units. Both types of mat cutters require a plentiful supply of fresh blades.

Mat Proportions

The width of the top and the sides of a mat are equal. The width of the bottom of the mat is slightly larger in dimension than the top and sides. A good ratio to work with is 3 to 4. When deciding upon inner proportions, ensure you leave 1/8 inch to ½ inch to allow for overlap. This will keep your photograph or document from slipping.

Cutting a mat by hand

The first step when cutting a mat by hand is to prepare the blade for your knife. The key to successful mat cutting is using a sharp blade in your knife and having a stable table. When cutting,

you should place the steel straightedge on the mat and cut along the inside edge. That way, if your knife should slip, the cut would be on the portion of the mat you intended to discard. It is also important to begin your cuts at the corners – hold the knife at a right angle to the mat to make a square cut and at a lesser angle to make a bevel cut. Once you begin cutting, you must maintain the same angle of cut for all sides of the mat, see figure 6-4.

STEP	ACTION
1	Determine overall dimension and measure the opening of the frame.
2	Measure the image area you want exposed through the mat
3	Cut the mat board and a back board the same size as the opening in the frame or the overall desired dimension
4	On the surface of the mat, lightly mark the dimensions of the mat opening
5	Place the steel straightedge on the mat surface to guide your blade
6	Beginning at the corners, cut through the mat board
7	Remove the unwanted portion of the mat
8	Using a piece of sandpaper or an emery board, remove jagged or rough edges
9	Carefully remove pencil lines with a non-abrasive eraser
10	Place a piece of tape along the top edge of the image with the sticky side half on the back of the image and half exposed
11	Carefully position the mat over the image area and press down over the tape
12	Put the back board behind the matted image and place in the frame. If you are not framing the matted image, secure the back board to the back of the mat board with double-sided tape.

Figure 6-4, Instructions for cutting a mat by hand.

CUTTING a MAT with a CARRIAGE TYPE CUTTER

Cutting a beveled mat with a carriage-type cutter is easier than cutting one by hand. Some carriage devices cut straight-edged mats, while other cutters cut oval or round mats. You can use a combination of both types for creative or decorative cuts. The devices maintain a precise angle of cut while you draw the cutting blade across a fixed beam. The blade remains the key to cutting a successful mat, see figure 6-5.

STEP	ACTION
1	Determine overall dimension and measure the opening of the frame.
2	Measure the image area that you want exposed through the mat.
3	On the back side of the mat, mark the dimensions of the desired opening
4	Adjust the cutter stops on the carriage to correspond with the measurements of the inside diameter of the mat, or the major and minor axis of a round or oval mat.
5	Position the mat board face down and align with the left edge of the mat cutter. Apply pressure to the carriage to secure the mat board in place.
6	Insert the blade approx. 1/16th inch above the corner and draw the blade down the carriage beam to just beyond the bottom corner. The stops on the carriage will stop your stroke.
7	Reposition the mat board for each side. The carriage for a round or oval mat will cut the mat in one continuous circular movement.
8	Remove the unwanted portion of the mat.
9	Smooth out jagged or rough edges with sandpaper or emery board.
10	Place and attach the image into the mat and the mat onto the backboard.

Figure 6-5, Instructions for cutting a mat with carriage-type cutter.

PRINT MOUNTING

Like matting, print mounting is a technique used for the displaying or exhibiting of a print, such as a painting, illustration or photograph. The difference between mounting and matting, however, is the way the print is attached to the board. When a print is matted, it is attached to the back of the board and the image is placed behind a cut opening. When matted, a print is often taped into place; thus, the matting can be temporary. Generally, prints that are framed are matted. When a print is mounted, it is attached to the face of a mounting board. In both cases, the board enhances the picture by providing a broad border as well as protecting the edges against damage.

When preparing a print for display, your goal should always be to show off the print in the best possible manner. And, simplicity is most often the best strategy. Stay away from elaborate artwork or fancy lettering as these elements will distract the viewer away from the image.

For exhibition and display, prints are often mounted or matted on a stiff (cardboard-like) board, often called card stock. Card stock used for mounting photographic prints should be free of acid or sulfur that can deteriorate the print quality. Card stock is available in various sizes, colors, textures and weights. There are no hard-and-fast rules for mounting prints, but the card stock should complement the print. The mount should be large enough to balance and support the picture, and the texture and color should complement the overall tone.

The way the print is placed on the mounting board is important. Prints mounted at odd angles or in a corner of the mount will unbalance the photograph. The bottom border on most mounts is the widest border of all. Normally, prints are mounted so the top and side borders of the mount are equal. To provide balance, you should ensure the bottom border is 25 to 35 percent wider than the top and side borders.

Mounting the print onto the card stock is done usually using either the wet or dry method.

WET METHOD

Liquid adhesives, such as rubber cement and spray-on adhesives, can be used to mount prints. These adhesives are easy and clean to use. After they dry, the excess adhesive can be removed easily by rubbing it lightly. The drawback to using rubber cement and spray-on adhesives is that they are not permanent. In time the print may loosen and peel off the mount. This makes rubber cement the ideal adhesive for temporary mounts used in displays or for copying. Gum arabic (natural gum made of hardened sap), glue or paste should be avoided whenever possible. These adhesives are known to stain the print or smear out from around the edges of the print. This causes smudges on the mounting board.

DRY METHOD

A dry print-mounting method that uses a pressure sensitive adhesive is often used with Navy graphics. Pressure-sensitive adhesives come in a variety of sizes in both rolls and sheets. These adhesives form a permanent bond and are easy to use for resin-coated papers.

To use these materials, you simply apply the print to the sticky surface of the mounting material, then peel off the protective backing and apply it to a mounting board. If the print is not aligned correctly, you can remove the print and reapply it. Once the print is correctly in place, you must apply pressure to the print and mounting board. Normally, this is done by running the print and mounting board through a specially designed roller assembly. This assembly applies pressure to the materials being mounted.

Pressure-sensitive adhesive material contains tiny beads of adhesive. The pressure breaks these beads and releases the adhesive. Once pressure is applied to the materials being mounted, a permanent bond is formed.

A dry-mount press can also be used to mount photographic prints. With a dry-mounting press, heat is used to fuse a mounting tissue between the print and the mounting surface.

A dry-mount press is designed to provide uniform pressure and heat. Even pressure is an important aspect of good, dry mounting. Adequate pressure helps squeeze out air from between the adhesive, print and mounting board. You should operate a dry-mount press at the temperature recommended by the manufacturer of the mounting tissue. It is better to use a slightly lower temperature to mount prints than a temperature that is too high. Excessive temperatures may cause damage to the print. When temperatures are too high for resin-coated (RC) papers, the resin coating may blister or bubble.

Porous materials, such as mounting board and rag-stock paper, absorb moisture from the air. This moisture becomes trapped between the layers and causes blisters and bubbles in the finished work. For best results, you should pre-dry the materials before beginning the dry-mounting process. This can be done by heating the mounting board or paper in the mounting press to remove the moisture.

The time required to form a good bond varies when you are using a dry-mounting press. You should mount the prints for a minimum amount of time – the time required to squeeze out air and moisture from the materials and to activate the adhesive. Because different materials have different thicknesses and heat conducting characteristics, you must experiment to determine what amount of time is required to form a good mount. Whenever possible, you should use scraps of materials that are the same as your finished work to determine the best time and temperature for dry-mounting prints. Make notes of the process to reduce time during the next job.

The final stage of finishing for some photographs is to frame them. There are an infinite number of colors and materials available for framing photographs. The same principles apply for framing photographs that apply to mounting or matting prints. Remember to keep it simple and choose a frame that complements the photograph, rather than distracts from the picture.

MOUNTING DISPLAY PRINTS

Many photographers categorize their work as both art and science, and they want their photographs, or images, to be viewed, appreciated, and most importantly, to communicate a message. This is the reason that the salon mount came into use. In photography, to salon mount your image means to mount for exhibition. To mount display prints, you should begin by selecting a mounting board two to four inches larger than the print size. Your selection of color should complement the photograph. Thickness of the board is optional.

The preferred placement of prints for salon mounting is near the *optical center*. This allows for pleasant placement of the photograph while leaving room for the photographer's name and print title below the print. The steps for mounting prints are as follows (see figure 6-6).

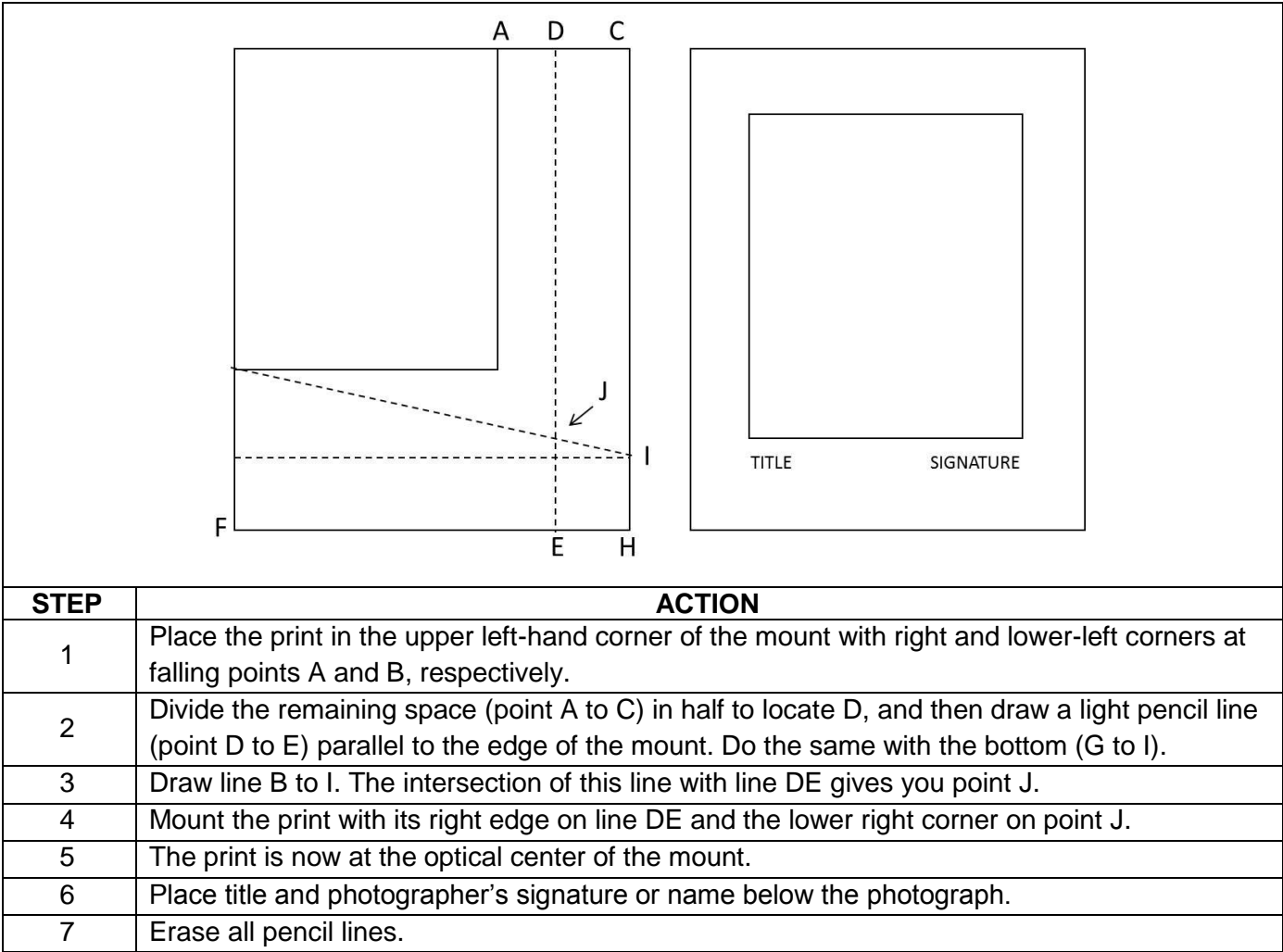


Figure 6-6, Instructions for salon mount.

LAMINATOR

The primary purpose of laminating is to embellish or protect printed documents or images for such things as paperback books, report covers, magazine covers, posters, cards and postcards, in-shop displays, etc. Lamination is most often done with heated roll laminators. Heated roll laminators can vary in size from office-based pouch laminators to industrial-sized machines. Such industrial machines are primarily used for high-quantity/quality output by printers or print finishers. Some machines can double as laminator for the front and provide adhesive to the back of the prints to ease the process of mounting onto the foam board. As with all equipment, refer to user's manual before using your shop's laminator.

ENGRAVER

An engraver routes letters and images below the surface of metals and plastics. Personnel nametags, doorplates, desk plates, and shipboard signage are all examples of engraved products. Engraving is also done on plaques and trophies and shadow boxes.

REPRODUCTION OF MONEY

Before reproducing money in any and all print products that come through your shop, make sure you have reviewed the law that guide the use of money as illustrations, [Section 411 of Title 31 of the Code of Federal Regulations](#). This law provides guidelines for the use of money in illustrations as dictated by the law in accordance with the Counterfeit Detection Act of 1992, Public Law 102-550.

U.S. CURRENCY

The Counterfeit Detection Act of 1992, Public Law 102-550, in Section 411 of Title 31 of the Code of Federal Regulations, permits color illustrations (see figure 6-7) of U.S. currency provided ...

- The illustration is of a size less than three-fourths or more than one and one-half, in linear dimension, of each part of the item illustrated
- The illustration is one-sided
- All negatives, plates, positives, digitized storage medium, graphic files, magnetic medium, optical storage devices, and any other thing used in the making of the illustration that contain an image of the illustration or any part thereof are destroyed and/or deleted or erased after their final use.



Figure 6-7, Proper use of currency in illustrations.

OTHER OBLIGATIONS AND SECURITIES

Photographic or likenesses of other United States obligations and securities and foreign currencies are permissible for any non-fraudulent purpose, provided the items are reproduced in black and white and are less than three-quarters or greater 1.5 times the size, in linear dimension, of any part of the original item being reproduced. Negatives and plates used in making the likenesses must be destroyed after their use for the purpose for which they were made. This policy permits the use of currency reproductions in commercial advertisements, provided they conform to the size and color restrictions.

Motion picture films, microfilms, videotapes, and slides of paper currency, securities, and other obligations may be made in color or black and white for projection or telecasting. No prints may be made from these unless they conform to the size and color restrictions.

EXTERNAL COMMITMENTS

In addition to and external to the command, Navy shops have obligations and responsibilities defined by instruction and practice. Know the commitments of the shop to provide support to units external to your command. These commitments should exist in the form of written agreements. Agreements between units typically define reoccurring services and the basis for financial reimbursement. Although you need not know the intricacies involved in establishing agreements between units, you must know if your shop has such commitments, the extent of the obligation, and the format for finding. These factors can determine how your shop orders supplies and schedules work loads.

- Interservice Support Agreement (ISA) – A formal agreement that defines reoccurring services and the basis for reimbursement.
- Joint Interservice Regional Support Group (JIRSG) – Use on DoD installations.
- Memorandum of Agreement (MOA) – An agreement supplements an ISA, defines a general area of responsibility, and establishes responsibility for reoccurring services.
- Memorandum of Understanding (MOU) – This type of agreement also supplements an ISA. It also identifies expectations of reoccurring support.

JOB CONTROL

The *Navy Visual Information (VI) Management and Operations Manual*, enclosure (1) of SECNAVINST 3104.1A, [Navy Visual Information Program Policy and Responsibilities](#), governs the administration and operation of Navy (VI) activities and functions.

The ability to track photographic jobs within your facility quickly and accurately depends on your shop's job-control system. When a system is not used correctly, photographic requests, prints, and other requirements may be lost or misplaced. This causes an inordinate delay in customer service that has a negative impact on your relationship with other entities.

JOB-ORDER FORM

ALL work performed by Navy VI activities must be documented on a job order form. This form is used to maintain close control of in phases of services. The job-order form serves several purposes; they are as follows: as an official request for visual information (VI) services, as the authority to perform the work, as a record of the time and materials used to complete the job, and as a receipt for

the finished work. Navy imaging facilities may use the Request for Audiovisual Services, OPNAV 5290/1, or a locally created, in-house form.

As a minimum, an in-house form must contain the following information:

- Job order number
- Customer signature block with a disclaimer that the service requested is official work and essential to mission accomplishment
- Product security classification
- Other information required by your facility to accomplish the request officially.

JOB ORDER LOG

All VI activities should assign job order numbers to job orders and should contain data sufficient to avoid duplication of numbers, identify the requesting activity, identify the product, and account for the final disposition of the job, be it a photographic print, multimedia product, or print product. Job order numbers should be set to #1 at the beginning of each fiscal year, which runs from Oct. 1 to Sept. 30 each year. Job order logs must only contain unclassified information. A separate job-order log is maintained for classified work requests.

SUMMARY

In this chapter we discussed print production and how this form of visual information supports our missions, both internally and externally. Whether you're stationed at sea or at a shore command, the production shop will be one of the busiest work centers at your command. Almost every organization within the DoD has a need for the type of services offered by MCs, and it's imperative that you have a basic understanding of desktop publishers, desktop printers and finishing equipment.

To further your knowledge in print production, check out your equipment's user's manuals, the [Navy VI Management and Operator's Manual](#) and The Lithographer's Manual 9th edition, created by the Graphics Arts Technical Foundation.

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CHAPTER 7

File Management and Transmission

Learning Objectives: Upon completing this chapter, you should be able to do the following:

- Describe elements of Visual Information Record Identification Number (VIRIN)
 - Describe process of embedding information into image file
 - Describe various file formats
 - List various forms of file transmission
-

INTRODUCTION

Mass communication specialists who produce or manage Department of Defense imagery should take care in properly submitting visual information with captions that are accurate, clear, concise, and in accordance with DoD standards. A properly identified piece of visual information will allow the viewer to know the who, what, when and where about the still image, motion imagery, graphic or multimedia production. This chapter will discuss how to properly identify, embed and transmit visual information in accordance with DoD Visual Information (VI) requirements.

Before continuing on with this chapter, however, it is a good idea to familiarize yourself (download and read) OPNAVINST 3104.1A, [Navy Visual Information Program Policy and Responsibilities](#). Within this instruction, you will find the Navy VI Management and Operations Manual. Like the AP Stylebook used in your writing, this instruction should be within your grasp at all times.

VISUAL INFORMATION RECORD IDENTIFICATION NUMBER (VIRINs)

In accordance with DoD VI requirements, each non-production unit of media that satisfies the definition of official DoD VI record material shall be assigned a visual information record identification number, or VIRIN (pronounced veer-in). Thus, unless discarded, each original 35mm transparency or negative; each original digital still image; and each roll of motion picture film, videotape, or other storage media that is recorded or produced by persons acting for or on behalf of DoD activities, function, or missions shall be assigned a VIRIN.

The VIRIN is assigned at the acquisition level by the originator (i.e., photographer, videographer, producer, graphic artist). Any photograph, digital image, or individual item of media containing motion imagery that is forwarded to the Defense Imagery Management Operations Center (DIMOC), Navy Visual News Service (NVNS) and the Defense Visual Information Center (DVIC) shall have a VIRIN.

STILL IMAGES

VIRINs uniquely identify every image shot by military photographers by using four fields of information – the date the image was shot, the military service affiliation of the photographer, an identification of the photographer, and a sequence number. The VIRIN consists of 15 data elements in

the following format: **YYMMDD-S-VISIONID-NNN**. Following is a description of the data elements for the VIRIN fields (with a hyphen between each field):

Field 1 (YYMMDD): The year, month and day of acquisition or origination.

Field 2 (S): The Service affiliation or status of the camera operator or originator. The code abbreviations are:

A = Uniformed member, civilian employee, or contract employee of the Army
N = Uniformed member, civilian employee, or contract employee of the Navy
F = Uniformed member, civilian employee, or contract employee of the Air Force
M = Uniformed member, civilian employee, or contract employee of the Marine Corps
G = Uniformed member, civilian employee, or contract employee of the Coast Guard
D = Other Civilian or contract employee of the Department of Defense
O = Person not falling into one of categories above

Field 3 (VISION ID): Historically, the last four digits of the originator's social security number were used in this Field 3. However, as of Feb. 1, 2011, this process has changed in an effort to protect personally identifiable information. Field 3 must now consist of the originator's Vision ID code.

To receive a Vision ID code, you must register with DIMOC. Regular contributors should register at <https://vipro.defenseimagery.mil>. People who have never contributed VI content to either DoD or Navy.mil must go to <https://vipro.defenseimagery.mil/newvipro>. If your connectivity is limited or you have issues registering, e-mail DIMOC at dimocops@dma.mil.

Field 4 (NNN): Image or unit of media number in sequential order (beginning with 001 for that same day). Numbering should follow the approximate order in which each unit of media was acquired or originated by the person identified in Fields 2 and 3 on the day identified in Field 1, starting with 001 and continuing consecutively as necessary up to 999. Field 4 of the VIRIN shall reflect the approximate order of a given person's acquisition or origination activities on a given day, without regard to variables such as media, so that no two units of media are assigned identical VIRINs.

Here is an example: **110131-N-AANNN-004**

Additional Notes

- Fields 2 and 3 for an image created by more than one individual shall reflect the individual who was the lead creator or head of the team responsible for creating the image
- Copies shall bear the VIRIN of the original, even if conversions between analog and digital, or changes in medium, format, compression or size occur during the copying process
- Imagery or other units of media which are derived from existing, VIRIN-bearing materials, but which differ significantly in appearance relative to that from which derived, shall, upon creation and unless discarded, be assigned their own VIRIN
- A good rule of thumb is to use the VIRIN as the image's file name
- When the Vision ID of the photographer is unavailable, use "XXXXX" in this field.

MOTION IMAGERY

All submitted motion imagery (such as a videotape, digital file or disc) must be assigned a means of easy identification. Much like still images, VIRINs uniquely identify every piece of video shot by military videographers. Motion media can also be identified by the use of slates and caption sheets by using four fields of information in the VIRIN – the date the imagery was shot, the service affiliation of the videographer, a VIRIN ID of the videographer, and a sequence number. This information is particularly useful to an editor when dealing with a large project that may have multiple tapes or files. Follow the still image guidelines to derive a VIRIN for motion imagery. A VIRIN slate, if possible, should be recorded at the beginning of each scene.

The consolidation of the motion imagery of separate camera original media on to a single videotape, film reel, or storage device must include all applicable VIRINs.

Like a still image, the VIRIN of a video sequence should be used as the filename of the electronic version(s) of the sequence and as the filename of the corresponding run sheet. Naming each file with the VIRIN ensures run sheets and sequences are properly kept together when received.

Video Captions

When writing captions for motion imagery, all the rules in the preceding chapters on style and content apply. The descriptive information provided will necessarily be broader since the caption must describe more than a single image. Provide captions for the sequence and each shot.

Caption information should appear in both the slate and on DD Form 2537, [Visual Information Caption Sheet](#), or in a similar format.

Slates

All video sequences should include a slate at the front of the sequence that contains the following:

- VIRIN
- Videographer name and rank
- Videographer contact information (e-mail and phone number). This information will be deleted during the editing process before the imagery is released to the public.

The release status of the video:

- Released
- Not released
- FOUO (for official use only)
- Not reviewed
- The name, rank and contact information of the releasing authority
- A brief description of the sequence. An example follows:

—U.S. Sailors conduct flight operations aboard the Nimitz-class aircraft carrier USS Ronald Reagan (CVN 76) July 21, 2007, while under way in the Indian Ocean.

The placement of a slate on the video sequence does not replace the requirement to send a caption sheet with the video, either using DD Form 2537 or a text document.

Caption Sheets

The two types of captions for video are sequence captions and shot captions.

A *sequence caption* describes the contents of the entire video sequence. It clearly identifies the documented activity to include the date and location the video was shot. It should also include the following information:

- Full name, rank and title of the person or persons featured in the video, only if included in the entire video sequence. If not featured in the entire sequence, place this information in the shot caption
- Full name and model number of all featured equipment, vehicles, aircraft, or ships, if included in the entire video sequence. If not featured in the entire sequence, place this information in the shot caption
- A brief explanation of the purpose of the event, exercise or operation. Why is the documented action happening and/or why is it significant
- Public release status and instructions at the end of the sequence caption (see above). An example:

—U.S. Navy Air Traffic Controller 2nd Class Esther R. Hines plots ship coordinates in the amphibious air traffic control center aboard USS Iwo Jima (LHD 7) May 2, 2007. Iwo Jima is conducting an expeditionary strike group exercise in preparation for an upcoming deployment. (U.S. Navy video by Mass Communication Specialist 1st Class April Myers/Not Released)

—Not cleared for public release by Lt. John Doe, USS Navy Ship PAO, john.doe@navy.mil, DSN 456-7890.

Shot captions

Shot captions are shot-by-shot breakdowns of the video sequence that include information pertinent only to that section of time code. If the information is applicable to the entire sequence, place it in the sequence caption (see above).

- Place the time code in hour/minute/second/frame format
- Include changes of camera field of view. Use the following abbreviations to indicate camera field of view:

—ES – establishing shot

—LS – long shot

—MS – medium shot

—CU – close up

—ECU – extreme close up

- Place release status at the end of each shot caption
- Examples of properly constructed shot captions:

—00:02:01:14MS – U.S. Navy Capt. John Smith presents a diploma to Seaman Joe Dean.
(Released)

—00:02:08:05MS – U.S. Navy Capt. John Smith presents a diploma to Seaman Larry Owens.
(Released)

—00:02:15:22LS – Graduates march in review. (Not Released)

DIGITAL FILE NAMING

Keeping track of and organizing image files are of essential importance when working with still and video images. As mentioned above, a good organization method is to use the product's VIRIN as the file name, unless the software you are using does not support the VIRIN's format. If system software does not support long file names, use the standard 8.3 file name convention. The first six characters are the date in VIRIN format with the last two characters of the VIRIN added (the sequence number). Make sure that the file extension reflects the file format that is used. An example of a digital still image file in 8.3 format would be 980430-N-AANNN-005 becoming 98043005.jpg. (See file formats below for amplifying information).

FILE FORMATS

File formats are machine languages that save each binary digit or bit in a file according to special codes that tell the program how to arrange and present the information. Special codes for one program are not necessarily the same special codes for other software. In this section, we will discuss several terms associated with image files as well as the most common types of file formats you will see in your work as an MC. These formats are listed in alphabetical order vice order of common usage.

ADVANCED AUDIO CODING (AAC)

AAC was developed to improve upon the MP3 audio format and uses a more advanced form of compression. According to some listening tests, AAC files encoded at lower bitrates (like 96 Kbps) sound as good as or better than MP3s encoded at higher bitrates (like 128 Kbps) despite their smaller size. The current version of the AAC codec was developed as part of the MPEG4 standard. Files may appear with the ".m4a" or ".mp4" filename extension. Songs with DRM (digital rights management) usually have an ".m4p" extension (with the "p" at the end to denote "protected").

AUDIO INTERCHANGE FILE FORMAT (AIFF)

AIFF is an audio format for Macintosh™ operating systems commonly used for storing uncompressed, CD-quality sound. This format is similar to WAV files used in Microsoft Windows™-based systems. AIFF is considered a lossless container format.

APPLE LOSSLESS

Apple™ Lossless (also known as Apple Lossless Encoder, ALE, or Apple Lossless Audio Codec, ALAC) is a lossless audio codec developed to provide full, CD-quality audio in about half the space of the original file.

ENCODED AUDIO FORMAT (AU)

Used primarily on Sun or UNIX systems, AU is an audio format commonly used for posting sound clips on the Internet. AU files can be played back on Windows, Macintosh, and other operating systems.

ADVANCED VIDEO CODING HIGH DEFINITION (AVCHD)

AVCHD is a high-definition digital video format that can record in 1080i and 720p and still maintain a reasonably small file size. AVCHD files are based on the MPEG4 codec. The advent of high-definition (HD) televisions and displays spurred the development of this format, which uses the same resolution as HDTV signals. AVCHD video files can also be burned to Blu-ray discs™.

AUDIO/VIDEO INTERLEAVED (AVI)

AVI is a file format for storing and playing back movie clips with sound on Windows™-based PCs. An AVI file is organized into alternating ("interleaved") chunks of audio and video data. AVI is a container format, meaning that it specifies how the data will be organized, but is not itself a form of audio or video compression. AVI is the type of file created when DV clips are imported from a digital camcorder to a PC. These clips are often referred to as DV-AVIs, because they contain full-quality digital video content.

BITRATE

Bitrate is the average amount of data required to store one second of music, expressed in kilobits per second, or Kbps, with audio compression. Some codecs like MP3, WMA, and AAC allow files to be encoded at different bitrates. Generally, as bitrate decreases, so does the sound quality of the resulting file, as well as the amount of memory required to store it.

BITMAP IMAGE (BMP)

BMP is a standard format used for storing images on Windows-based PCs. BMP images can either be compressed or uncompressed. This type of file also sometimes appears with the ".DIB" extension.

CODER-DECODER (CODEC)

Codec is software that takes a raw data file and turns it into a compressed file. Because compressed files only contain some of the data found in the original file, the codec is the necessary "translator" that decides what data makes it in to the compressed version and what data gets discarded. Different codecs translate in different ways, so a file compressed using the one codec will be different from a file compressed using another codec. Sometimes the difference is noticeable, sometimes not, but it's good to be aware of what codecs are best for what you're trying to do in order to maintain the best ratio of file size to quality.

COMPRESSION

Because it takes up so much space, video must be compressed before it is put on the web. To compress means to pack the information into a smaller space. As discussed in previous chapters, the two types of compression are lossless compression and lossy compression.

DIGITAL VIDEO (DV)

DV is the format used by most digital camcorders. Although the DV format employs a form of lossy video compression (applied in real-time as you record with your camera), this format is still memory-intensive. When transferred to a computer, a DV clip requires roughly 1 GB of storage per five minutes of video. Clips are usually stored on the computer as QuickTime™ or .avi files. Despite its use of compression, DV can provide a clean image with up to 520 lines of resolution. DV uses a type of compression known as "intraframe" — that is, it encodes video at the full standard frame rate of 30 frames per second. This allows frame-by-frame editing. In contrast, video codecs like MPEG1 or MPEG2 tend to handle video sequence by reducing the number of full frames per second and encoding the differences between frames, making precise editing more difficult. These are known as "interframe" forms of compression.

GRAPHICS INTERCHANGE FORMAT (GIF)

GIF creates a table of up to 256 colors from a pool of 16 million. If the image has fewer than 256 colors, GIF can render the image exactly. When the image contains many colors, the software that creates the GIF will use any of several algorithms to approximate the colors in the image with the limited palette of 256 colors available. Better algorithms search the image to find an optimum set of 256 colors. Sometimes GIF uses the nearest color to represent each pixel, and sometimes it uses *error diffusion* to adjust the color of nearby pixels to correct for the error in each pixel.

GIF achieves compression in two ways. First, it reduces the number of colors of color-rich images, thereby reducing the number of bits needed per pixel, as just described. Secondly, it replaces commonly occurring patterns (especially large areas of uniform color) with a short abbreviation. Instead of storing "white, white, white, white, white," it stores "five white."

Thus, GIF is lossless only for images with 256 colors or less. For a rich, true color image, GIF may "lose" 99.998 percent of the colors.

JOINT PHOTOGRAPHIC EXPERTS GROUP (JPEG)

JPEG is optimized for photographs and similar continuous tone images that contain many, many colors. It can achieve astounding compression ratios even while maintaining very high image quality, while GIF compressions are unkind to such images. JPEG works by analyzing images and discarding kinds of information that the eye is least likely to notice. It stores information as 24 bit color.

It is important to remember that the degree of compression of JPEG is adjustable. At moderate compression levels of photographic images, it is very difficult for the eye to discern any difference from the original, even at extreme magnification. Compression factors of more than 20 are often quite acceptable. Good graphics programs allow you to view the image quality and file size as a function of compression level, so that you can conveniently choose the balance between quality and file size. A form of this codec known as Motion JPEG is used by some digital cameras and camcorders for storing video clips of relatively small file size. With Motion JPEG, each frame of video is captured separately and reduced in size using JPEG compression.

LOSSLESS DATA COMPRESSION

Lossless data compression retains all of the data of the original file as it is converted to a smaller file size. When a lossless file such as a TIFF is opened, algorithms restore all compressed information, creating a duplicate of the source file. Lossless compression is generally preferred for creating high-quality or professional-grade audio and video files where retaining fine detail is important.

LOSSY DATA COMPRESSION

In lossy data compression, some source file information is discarded to conserve space. When the file is decompressed, this information is reconstructed through algorithms, usually resulting in some loss of sound quality or image detail when compared to the original. Generally, the higher the resolution of a compressed file, the slighter the degradation. An MP3 file with a resolution of 256 Kbps, for example, tends to sound more like the source file than one made at 64 Kbps.

MUSICAL INSTRUMENT DIGITAL INTERFACE (MIDI)

A MIDI file does not contain actual audio data; it contains commands that let MIDI-capable synthesizers recreate a specific musical passage. MIDI protocol has been used for years as a way for electronic musical instruments, like digital keyboards and sequencers, to communicate with each other. Computer sound cards typically feature the ability to interpret MIDI files into music. Since they don't actually contain the music itself, but rather the commands used to recreate music, MIDI files are a lot smaller than audio files like MP3s, WMAs, or WAVs. MIDI files are small and manageable enough that it's not uncommon to find them embedded in web pages, adding a sonic element to the surfing experience. They usually appear with the ".MID" filename extension.

MOVING PICTURE EXPERTS GROUP (MPEG)

The Motion Picture Experts Group is a committee that sets international standards for the digital encoding of movies and sound. There are several audio/video formats that bear this group's name. In addition to their popularity on the Internet, several MPEG formats are used with different kinds of A/V gear:

MPEG1

MPEG1 is a format often used in digital cameras and camcorders to capture small, easily transferable video clips. It is also the compression format used to create video CDs, and commonly used for posting clips on the Internet. The well-known MP3 audio format (see definition below) is part of the MPEG1 codec.

MPEG2

Commercially produced DVD movies, home-recorded **DVD** discs, and most digital satellite TV broadcasts employ MPEG2 video compression to deliver their high-quality picture. MPEG2 is a form of lossy compression that rivals the DV format when it comes to picture quality. Because MPEG2 is a "heavier" form of compression that removes a larger portion of the original video signal than DV, it is more difficult to edit with precision. The MPEG2 codec allows for selectable amounts of compression to be applied, which is how home DVD recorders and hard disk video recorders can offer a range of recording speeds. MPEG2 is considered a container format.

MPEG4

MPEG4 is a flexible MPEG container format used for both streaming and downloadable Web content. It is the video format employed by a growing number of camcorders and cameras.

MP3 (MPEG1, Audio Layer 3)

MP3 is the most popular codec for storing and transferring music. Though it employs a lossy compression system that removes frequencies judged to be essentially inaudible, MP3 still manages to deliver near-CD sound quality in a file that is only about a 1/10th or 1/12th the size of a corresponding uncompressed WAV file. When creating an MP3 file, you can select varying amounts of compression depending on the desired file size and sound quality.

MP3PRO

MP3PRO is an updated version of the original MP3 codec. These small, low-bitrate files contain much more high-frequency detail than standard MP3 files encoded at similar low bitrates. The high-frequency portion of the audio signal is handled by an advanced and extremely efficient coding process known as spectral band replication (SBR), while the rest of the signal is encoded as a regular MP3. That means that when you play an MP3Pro file on non-MP3Pro-compatible software, you will only hear the non-SBR-encoded portions (so you'll lose the highs altogether). However, when encoded and played back using a fully compatible audio program, mp3Pro files deliver very good sound quality using low bitrates.

QUICK TIME™ MOVIE (MOV)

An MOV is a file format for storing and playing back movies with sound. This type of file contains composition information, but no movie data, which takes up minimal disk space.

RAW

RAW is an image file of minimally processed data received from a digital camera. Most camera manufacturers have their own proprietary version of the RAW image format, and their own file suffixes. Professionals prefer shooting in RAW because the additional information these large files contain allows greater flexibility in post-production editing. Because the image is basically unprocessed, as compared to a JPEG image, RAW files can retain very subtle color variations and fine detail. Color changes, contrast adjustments, and other manipulations of a RAW image yield significantly fewer digital artifacts than the same changes made to a comparable JPEG file.

REALMEDIA™

RealMedia is one of the most popular formats for streaming content on the Internet. RealMedia includes the RealAudio codec for sound clips and RealVideo codec for movies. RealAudio and RealVideo files are often given the common RealMedia ".rm" file extension. RealMedia is a container format that's often heavily compressed for streaming over dial-up Internet connections. RealMedia variable bitrate (RMVB) has been developed for VBR streaming files.

SOUND DESIGNER II (SDII)

SDII is an audio format for Macintosh™ operating systems which is often employed by pro-quality sound editing software applications. SDII files, like AIFF and WAV files, are capable of storing uncompressed CD-quality audio.

SECURE DIGITAL MUSIC INITIATIVE (SDMI)

The Secure Digital Music Initiative was established to standardize digital music file specifications throughout the industry. The primary purpose was to create a uniform copyright protection protocol that would work with a variety of digital players, software programs, and download sites. SDMI-compliant devices and files have special coding to recognize and comply with the requirements imposed on copyright-protected materials.

PORTABLE NETWORK DOCUMENT (PNG)

PNG is a lossless storage format; however, in contrast with common TIFF usage, it looks for patterns in the image that it can use to compress file size. The compression is exactly reversible, so the image is recovered exactly.

PHOTOSHOP™/PAINTSHOP™ (PSD/PSP)

PSD/PSP are proprietary formats used by graphics programs. These are the preferred working formats as you edit images in the software, because only the proprietary formats retain all the editing power of the programs. These packages use layers, for example, to build complex images, and layer information may be lost in the non-proprietary formats such as TIFF and JPEG. However, be sure to save your end result as a standard TIFF or JPEG, or you may not be able to view it in a few years when your software has changed.

TAG IMAGE FILE FORMAT (TIFF)

TIFF is a flexible [container](#) format for digital still images, commonly used in desktop publishing. TIFF images can incorporate various forms of compression (like JPEG) or can be uncompressed. Some digital cameras offer a special TIFF mode for capturing uncompressed photos; however, these files require many times more storage space than JPEGs and can quickly fill up your camera's available memory.

WAVEFORM AUDIO FILE FORMAT (WAV)

WAV is a standard audio format for Windows™ operating systems, often used for storing high-quality, uncompressed sound. WAV files can contain CD-quality (44.1 KHz/16-bit) audio signals. However, CD-quality WAV files require relatively large amounts of memory – roughly 10MB per minute of music. WAV is a container format.

WINDOWS MEDIA AUDIO (WMA)

WMA is one of today's most pervasive Internet audio formats. Though not as popular as MP3, proponents of lossy WMA claim that it can outperform MP3 in the area of sound quality, particularly with files encoded at lower bitrates such as 64 or 96 Kbps. This performance advantage makes it

handy for applications like portable digital audio players, where total play time is limited by a finite amount of internal memory.

WINDOWS MEDIA VIDEO (WMV)

WMV is Microsoft's™ proprietary lossy compression format for motion video. It is used for both streaming and downloading content via the Internet.

EMBEDDING INFORMATION

When submitting visual information, you must embed pertinent information about the image into the image's file information. This information is called information interchange model caption (IPTC), or metadata. The metadata contains identification, contact information, the caption and keywords about the photograph. Embedded information makes the file searchable on the computer and/or the Internet. While some metadata is written by the camera, most is input by the photographer after downloading. Different commands use various software programs to embed information. For detailed guidance on embedding caption and metadata information, consult your commands specific editing software manual. A DOD caption cross reference sheet is available at the following websites:

- <http://www.defenseimagery.mil/learning/captionstyle/metadateref.html>
- <http://www.chinfo.navy.mil/visualnews/training.html>

TRANSMISSIONS

So, you have your image or video file with all required information attached or embedded, to include VIRIN info and metadata. Now what? In today's world of up-to-the-minute news coverage, there's a constant demand for current images of activities throughout the Department of Defense showing the department's activities, exercises and operations.

Your next step is to move your product from your command to the rest of the world. There are several options for moving these files. As a general rule, however, you should use either file transfer protocol (FTP) or fast file transfer (FFT).

FILE TRANSFER PROTOCOL (FTP)

A simple network protocol based on Internet Protocol (the method or protocol by which data is sent from one computer to another on the Internet known as the host) as well as a term used when referring to the process of copying files when using FTP technology. To transfer files with FTP, you use a program often called the "client." The FTP client program initiates a connection to a remote computer running FTP "server" software. After the connection is established, the client can choose to send and/or receive copies of files, singly or in groups. To connect to an FTP server, a client requires a username and password as set by the administrator of the server.

FAST FILE TRANSFER (FFT)

Fast File Transfer (FFT) is a client-server based transmission application that allows users to transmit computer files of any type and size (files larger than 1 GB are routinely moved) using Windows based computers over IP-based networks much faster and more reliably than File Transfer Protocol (FTP) methods. Using multiple data threads, the application speeds transmission of files by "flooding" the available bandwidth, throttling itself to ensure that the network is available for other

network activity. Such error handling ensures that upon successful transmission completion, there is no corruption in the files transmitted. The client application itself is easy to install and use. The installer is a standard application installer. There is no licensing information needed as all licensing is done at our receiving servers. When the client is launched, enter the username, password and host address of the FFT server.

For more information, check out Navy Visual News Service's guidance on [sending files](#).

SAFEGUARDING CLASSIFIED MATERIAL

Modern methods of conducting war and safeguarding our nation require a tremendous amount of information. This information is stored in books and files, aggregated into reports, gathered by intelligence activities, and transferred in the form of letters, messages, photographs, and audio and video recordings. This information is sifted and organized in the minds of the people directing the war effort and those keeping the peace. Much of this information is extremely valuable to our enemies, and, therefore, must be kept classified and safeguarded in the interest of national security.

In performing your job as a Navy MC, you may have access to classified information. Therefore, you **MUST** become aware of the importance of safeguarding all classified information to which you have access.

Classification categories, procedures, and related security information pertaining to the Navy are contained in the *Department of the Navy Information and Security Program Regulation*, OPNAVINST 5510.1 (series).

SUMMARY

Congratulations, you have reached the end of the MC basic rate training manual. Through these pages, you have learned the basics of what is required of you to perform your duties in telling the story of America's Navy. Specifically, in this chapter, however, we discussed moving your visual information products from your command to higher headquarters as well as basic information on file types and file terminology.

Your learning should not stop here. You must take this information and begin building a toolbox that will move you from where you are now and transform you into an expert in the mass communication field. Good luck and see you about the fleet!

APPENDIX I

MC ACRONYMS – MODULES 1 & 2

AAC	<i>Advanced Audio Coding</i>
AFRTS	<i>Armed Forces Radio and Television</i>
AIFF	<i>Audio Interchange File Format</i>
ARPA	<i>Advanced Researched Project Agency</i>
ASD(PA)	<i>Assistant Secretary of Defense for Public Affairs</i>
AU	<i>Encoded Audio Format</i>
AVCHD	<i>Advanced Video Coding High Definition</i>
AVI	<i>Audio/Video Interleaved</i>
BMP	<i>Bitmap Image</i>
BNC	<i>Bayonet Neill-Concelman</i>
CBT	<i>Computer Based Training</i>
CCD	<i>Charged Coupled Device</i>
CCU	<i>Camera Control Unit</i>
CD-ROM	<i>Compact Disc Read Only Memory</i>
CE	<i>Civilian Enterprise</i>
CHINFO	<i>Chief of Information</i>
CMY	<i>Cyan, Magenta and Yellow</i>
CMYK	<i>Cyan, Magenta, Yellow & Key (black)</i>
CODEC	<i>Coder-Decoder</i>
COMCAM	<i>Combat Camera</i>
CP10	<i>Continuing Promise 2010</i>
CSS	<i>Cascading Style Sheets</i>
CU	<i>Close-Up</i>
DIMOC	<i>Defense Imagery Management Operations Center</i>
DINFOS	<i>Defense Information School</i>
DMA	<i>Defense Media Activity</i>
DNS	<i>Domain Name Server</i>
DoD	<i>Department of Defense</i>
DoN	<i>Department of the Navy</i>
DPI	<i>Dots Per Inch</i>
DSLR	<i>Digital Single Lens Reflex</i>
DTP	<i>Desktop Publishing</i>

<i>DTS</i>	<i>Direct to Sailor</i>
<i>DV</i>	<i>Distinguished Visitor</i>
<i>DV</i>	<i>Digital Video</i>
<i>DVD-ROM</i>	<i>Digital Versatile Disk-Read Only Memory</i>
<i>ECU</i>	<i>Extreme Close-Up</i>
<i>EEFI</i>	<i>Essential Elements of Friendly Information</i>
<i>ELS</i>	<i>Extreme Long Shot</i>
<i>ENG</i>	<i>Electronic Newsgathering</i>
<i>EOD</i>	<i>Explosive Ordnance Disposal</i>
<i>EV</i>	<i>Exposure Valve</i>
<i>FFS</i>	<i>Full-Figure Shot</i>
<i>FFT</i>	<i>Fast File Transfer</i>
<i>FHTNC</i>	<i>Fleet Hometown News Center</i>
<i>FOIA</i>	<i>Freedom of Information Act</i>
<i>FPS</i>	<i>Frames Per Second</i>
<i>FTP</i>	<i>File Transfer Protocol</i>
<i>GBS</i>	<i>Gigabytes</i>
<i>GIF</i>	<i>Graphic Interchange Format</i>
<i>GN</i>	<i>Guide Number</i>
<i>HTML</i>	<i>Hypertext Markup Language</i>
<i>IBC</i>	<i>Internet-based capabilities</i>
<i>IP</i>	<i>Internet Protocol</i>
<i>IPC</i>	<i>Intermediate Photojournalism Course</i>
<i>IPTC</i>	<i>Information Interchange Model Caption</i>
<i>ISA</i>	<i>Interservice Support Agreement</i>
<i>ISO</i>	<i>International Standards Organization</i>
<i>ISP</i>	<i>Internet Service Provider</i>
<i>JFC</i>	<i>Joint Force Commander</i>
<i>JIRSG</i>	<i>Joint Interservice Regional Support Group</i>
<i>JPEG</i>	<i>Joint Photographer Experts Group</i>
<i>K</i>	<i>Kelvin</i>
<i>LaDR</i>	<i>Learning and Development Roadmap</i>
<i>LS</i>	<i>Long Shot</i>
<i>MBs</i>	<i>Megabytes</i>
<i>MC</i>	<i>Mass Communication Specialist</i>
<i>MIDI</i>	<i>Musical Instrument Digital Interface</i>

MILPERSMAN	<i>Military Personnel Manual</i>
MOA	<i>Memorandum of Agreement</i>
MOU	<i>Memorandum of Understanding</i>
MOV	<i>Quick Time Movie</i>
MPEG	<i>Moving Picture Experts Group</i>
MS	<i>Medium Shot</i>
MWR	<i>Morale, Welfare and Recreation</i>
NAVCO	<i>Navy Office of Community Outreach</i>
NAVINFO	<i>Navy Offices of Information</i>
ND	<i>Neutral-Density</i>
NJROTC	<i>Navy Junior Reserve Officers Training Corps</i>
NECs	<i>Navy Enlisted Classifications</i>
NEOCS	<i>Navy Enlisted Manpower and Enlisted Classification and Occupational Standards</i>
NKO	<i>Navy Knowledge Online</i>
NPASE	<i>Navy Public Affairs Support Elements</i>
NRTC	<i>Nonresident Training Course</i>
NVNS	<i>Navy Visual News Service</i>
OIC	<i>Officer In Charge</i>
OPDOC	<i>Operational Documentation</i>
OPREPS	<i>Operational Reports</i>
OPSEC	<i>Operational Security</i>
PAG	<i>Public Affairs Guidance</i>
PA Regs	<i>Public Affairs Policy and Regulations</i>
PA/VI	<i>Public Affairs and Visual Information Team</i>
Pixels	<i>Picture Elements</i>
PNG	<i>Portable Network Document</i>
POD	<i>Plan of the Day</i>
POD	<i>Print on demand</i>
POM	<i>Plan of the Month</i>
POW	<i>Plan of the Week</i>
PPI	<i>Pixels Per Inch</i>
PSD/PSP	<i>Photoshop/Paint Shop</i>
RC	<i>Resin Coated</i>
RDT&E	<i>Research, Development, Test and Evaluation</i>
RGB	<i>Red, Green, Blue</i>

<i>RIMPAC</i>	<i>Rim of the Pacific</i>
<i>RMVB</i>	<i>RealMedia Variable Bitrate</i>
<i>RSS</i>	<i>Really Simple Syndication</i>
<i>SAPP</i>	<i>Security, Accuracy, Propriety and Policy</i>
<i>SDII</i>	<i>Sound Designer II</i>
<i>SDV</i>	<i>SEAL delivery team</i>
<i>SECDEF</i>	<i>Secretary of Defense</i>
<i>SECNAV</i>	<i>Secretary of the Navy</i>
<i>SDMI</i>	<i>Secure Digital Music Initiative</i>
<i>SITE</i>	<i>Shipboard Information, Training and Entertainment</i>
<i>SITREPS</i>	<i>Situational Reports</i>
<i>SLR</i>	<i>Single Lens Reflex</i>
<i>SME</i>	<i>Subject-Matter Expert</i>
<i>SMPTE</i>	<i>Society of Motion Picture and Television Engineers</i>
<i>TCP/IP</i>	<i>Transmission Control Protocol/Internet Protocol</i>
<i>TECDOC</i>	<i>Technical Documentation</i>
<i>TIFF</i>	<i>Tag Image File Format</i>
<i>TTL</i>	<i>Through The Lens</i>
<i>URL</i>	<i>Uniform Resource Locator</i>
<i>VI</i>	<i>Visual Information</i>
<i>VIDOC</i>	<i>VI Documentation</i>
<i>W3C</i>	<i>World Wide Web Consortium</i>
<i>WAV</i>	<i>Waveform Audio Format</i>
<i>WMA</i>	<i>Windows Media Audio</i>
<i>WMV</i>	<i>Windows Media Video</i>
<i>WWW</i>	<i>World Wide Web</i>

APPENDIX II

REFERENCES USED TO DEVELOP THE TRAMAN

Adobe® Systems Creative Suite 3 Dreamweaver User's Manual

Adobe® Systems Creative Suite 3 InDesign User's Manual

Adobe® Systems Creative Suite 3 Photoshop User's Manual

Ang, Tom. "Digital Photography: An Introduction." ISBN 0789499762

Associated Press Stylebook and Briefings on Media Law

Blair, Raymond N. (Graphic Arts Technical Foundation). "The Lithographer's Manual (9th edition). ISBN 088362169X

CHINFOINST 5720.8 Public Affairs Tactics Manual

DINFOS Bindery Handout

DINFOS Broadcast Writing Style Guide

DINFOS Color Management

DINFOS Digital Imagery Enhancement and Editing

DINFOS Computer Fundamentals

DINFOS Digital Audio and Video Editing

DINFOS Digital Color and Page Design

DINFOS Handout Reference for Electronic Presentations

DINFOS Input and Output Devices

DINFOS Intermediate Photojournalism Course Handbook (Functional Area 1)

DINFOS Multimedia Authoring

*DINFOS Public Affairs Leadership Department Training Resources Web page
(<http://www.dinfos.dma.mil/Dinfosweb/Students/pald.aspx#>)*

DINFOS Telecommunications and Web Design

DINFOS Vector-Based Graphic Design

DINFOS Video Production Student Guide FA I (Foundation of Video Concepts)

DINFOS Video Production Student Guide FA II (Foundation of Videographic Production)

DINFOS Video Production Student Guide FA III (The Art of Videographic Production)

DINFOS Video Production Student Guide FA IV/V (The Art of Video Documentation and Culmination)

DOD Directive 5230.16 Nuclear Accident and Incident Public Affairs Guidance

DODINST 5040.02 Visual Information

DODINST 5040.05 Alteration of Official DOD Imagery

DODINST 5040.07 Visual Information Production Procedures
DODINST 5120.2 Armed Forces Radio and Television Service
DODINST 5120.4 Department of Defense Newspapers, Magazines and Civilian Enterprise Publications
DODINST 5400.13 Public Affairs Operations
DOD Principles of Information
DOD Webmasters Guidance (<http://www.defense.gov/webmasters/>)
JOINT PUB 3-61 Joint Public Affairs Doctrine
Naval Enlisted Manpower and Personnel Classifications and Occupational Standards
NAVEDTRA 14208 Photographer's Mate Advanced NRTC
NAVEDTRA 14209 Photographer's Mate Basic NRTC
NAVEDTRA 14321 Journalism Basic NRTC
NAVEDTRA 14332 Illustrator Draftsman (Equipment)
NAVEDTRA 14333 Illustrator Draftsman (Executionable Practices)
NAVEDTRA 14334 Illustrator Draftsman (Presentations Graphics)
NAVEDTRA 14335 Journalism Advanced Nonresident Training Course
NAVPERS 15560D Military Personnel Manual
Navy Visual News Training (<https://www.chinfo.navy.mil/visualnews/training.html>)
NIKON® Autofocus Speedlight SB-800 Instruction Manual
NIKON® Digital Camera D300 User's Manual
OPNAVINST 3104.1 Navy Visual Information Program Policy and Responsibilities
OPNAVINST 3104.3 Navy Combat Camera Program Policy, Responsibilities and Procedures
OPNAVINST 3432.1 Operations Security
OPNAVINST 5510.1 Department of the Navy Information and Personnel Security Program Regulation
OPNAVINST 5720.2 Embarkation in U.S. Naval Ships
OPNAVINST 5726.8 Outreach: America's Navy
Sabin, William A. "The Gregg Reference Manual: A Manual of Style, Grammar, Usage, and Formatting (10th Edition)" ISBN 0073545430
SECNAVINST 5211.5 Privacy Act Program
SECNAVINST 5720.42 Freedom of Information Act
SECNAVINST 5720.44 Public Affairs Policy and Regulations
SECNAVINST 5724.3 Fleet Hometown News Program Policy and Regulations
SECNAVINST 5420.47 Navy Policy for Content of Publicly Accessible World Wide Web Sites
SECNAVINST 5870.4 Copyright
U.S. Counterfeit Detection Act of 1992 (http://www.secretservice.gov/money_illustrations.shtml)
U.S. Navy Regulations

U.S. Navy Style Guide (http://www.navy.mil/submit/view_styleguide.asp)

U.S. Navy Website (<http://www.navy.mil>)

U.S. Rehabilitation Act (Section 508) (<http://www.section508.gov>)

U.S. State Department Guidelines for Producing High Quality Photographs for U.S. Travel Documents

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Assignment Questions

Information: The text pages that you are to study are provided at the beginning of the assignment questions.

ASSIGNMENT 1

Textbook Assignment: *“Introduction to Visual Information”, Chapter 1.*

1-1. Which of the following products is NOT an example of visual information?

1. Illustrations
2. Command Brief
3. All Hands Update
4. Public Affairs Guidance

1-2. Which of the following military leaders is responsible for the implementation and administration of the Navy’s visual information program?

1. Chief of Information
2. Director, Combat Camera
3. Chief of Naval Operations
4. Director, Defense Media Activity

1-3. Which of the following Navy policies governs the use, management and assignment of Navy visual information?

1. OPNAVINST 3104.1
2. OPNAVINST 3104.3
3. DOD Directive 5040.1
4. SECNAVINST 5720.44

1-4. Which of the following Navy policies governs combat camera responsibilities and procedures?

1. OPNAVINST 3104.1
2. OPNAVINST 3104.3
3. DOD Directive 5040.1
4. SECNAVINST 5720.44

1-5. Which of the following government entities supports worldwide DoD and other government agencies with the right imagery at the right place and time?

1. Defense Media Activity
2. Defense Visual News Service
3. Defense Imagery Management Operations Center
4. Defense Video & Imagery Distribution System

1-6. DoDINST 5040.05 outlines which of the following aspects of visual information?

1. Copyright
2. Visual Information Tactics
3. Alteration of Official Imagery
4. Joint PA Support Element Operations

1-7 Which of the following techniques often goes against DoD and Navy VI ethics when enhancing imagery?

1. Dodging & Burning
2. Cropping & Scaling
3. Masking an area of the image in support of criminal investigations
4. Cloning area for placement in separate image

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ASSIGNMENT 2

Textbook Assignment: "Lighting and Color", Chapter 2.

2-1. *What happens to light when it travels through a transparent medium, such as glass ?*

1. It stops
2. It speeds up
3. It slows down
4. It bounces back

2-2. *What happens to light when it strikes a rough surface?*

1. It stops
2. It is absorbed
3. It reflects back in many directions
4. It reflects back at the same angle

2-3. *Which of the following types of reflection occurs when light strikes a smooth surface?*

1. Diffused
2. Specular
3. Conflicted
4. Translucent

2-4. *Which of the following is NOT a factor that affects reflected light?*

1. Color
2. Intensity
3. Direction
4. Sharpness

2-5. *Which of the following terms describes the type of medium only transmits a portion of light, and objects behind such media are not clearly seen?*

1. Diffused
2. Opaque
3. Transparent
4. Translucent

2-6. *Which, if any, of the following colors theoretically represents the absence of light?*

1. Gray
2. Black
3. White
4. None of the Above

2-7. *Which of the following colors is not one of the three colors of light as seen in the visible spectrum?*

1. Red
2. Blue
3. Green
4. Yellow

2-8. *What happens to light when it passes through a prism?*

1. It intensifies
2. It changes direction
3. It lessens in intensity
4. It separates light into the visible spectrum

2-9. Which of the following terms describes what happens to light during a solar eclipse?

1. Dispersion
2. Diffraction
3. Refraction
4. Inversification

2-10. Which of the following types of light is seen as a glare?

1. Diffused
2. Fluorescent
3. Plane Polarized
4. Tungsten Halogen

2-11. Which of the following items is the most important ingredient in photography?

1. Light
2. Color
3. Subject
4. Placement

2-11. Which of the following factors determines the quality of sunlight?

1. Direction and Strength
2. Direction and Time of Day
3. Strength and Cloud Coverage
4. Time of Day and Cloud Coverage

ASSIGNMENT 3

Textbook Assignment: “Photography”, Chapter 3.

3-1. Which of the following steps is the first you should take upon being assigned a new DSLR camera?

1. Talk to your LPO
2. Clean the camera's lens
3. Go out and shoot test shots
4. Read the camera's user manual

IN ANSWERING QUESTIONS 3-2 THROUGH 3-9 SELECT THE PHOTOGRAPHIC TERM THAT MATCHES THE DESCRIPTION GIVEN AS THE ANSWER.

3-2. Widest angle at which light entering a lens produces a usable portion of the circle of illumination at the focal plane.

1. Angle of field
2. Depth of field
3. Shutter angle
4. Asymmetrical junction

3-3. The usable portion of the circle of illumination.

1. Exposure
2. Angle of field
3. Depth of field
4. Circle of good definition

3-4. Variable opening through which light passes into a camera.

1. Iris
2. f/stop
3. Shutter
4. Aperture

3-5. Range of acceptably sharp focus in front of and behind the center of interest.

1. Exposure
2. Perspective
3. Depth of field
4. Circle of good definition

3-6. Thin sheet that covers the camera's charge-coupled device (CCD).

1. Iris
2. Shutter
3. Aperture
4. Diaphragm

3-7. Derived from the a Latin phrase meaning dark chamber, it is a light box used to capture images.

1. Iris
2. Camera
3. Diaphragm
4. Digital imaging

3-8. Amount of light falling on a unit area of a digital sensor.

1. f/stop
2. Exposure
3. Light index
4. Shutter speed

3-9. Controls the amount of light passing through the lens and striking the CCD.

1. f/stop
2. Exposure
3. Depth of field
4. Shutter speed

3-10. What happens to the depth of field when you lower your f/stop?

1. It expands
2. It disappears
3. It is shallower
4. It is shallower Nothing changes

3-11. Which of the following terms best describes the length of time the shutter stays open?

1. CCD release
2. Shutter speed
3. Light duration
4. Aperture control

3-12. Which of the following situations occurs when you use a higher shutter speed?

1. Faster shutter speed, shorter exposure
2. Faster shutter speed, longer exposure
3. Slower shutter speed, shorter exposure
4. Slower shutter speed, longer exposure

3-13. Which, if any, of the following actions best describes what happens when you put your camera on the "bulb" setting?

1. Slows the shutter speed
2. Speeds up the shutter
3. Keeps shutter open when shutter release button is held
4. None of the above

3-14. Which of the following shutter speeds lets you a) blur action and b) freeze action?

1. a) 1/60 b) 1/250
2. a) 1/250 b) 1/60
3. a) B b) 1/500
4. a) 1/500 b) B

3-15. Which of the following actions is controlled by the ISO setting?

1. Stops release of shutter
2. Changes focus from auto to manual
3. Determines depth of field
4. Controls amount of light that enters DSLR

3-16. Which of the following terms best describes the common rule for estimating correct daylight exposure?

1. Obscura
2. Mnemonic
3. Sunny f/16
4. Equivalent exposure

3-17. Which of the following terms describes the doubling and halving relationship between the aperture and the shutter?

1. Obscura
2. Mnemonic
3. Sunny f/16
4. Equivalent exposure

3-18. Which of the following is NOT a reason for knowing understanding basic exposure settings?

1. Light meters are mechanical; they may be inconsistent, wrong, or even fail
2. Light meters can't think for themselves; you may want to override reading if special lighting situations
3. You may want to control depth of field and stop action vice the camera doing it
4. All of the above

IN ANSWERING QUESTIONS 3-19 THROUGH 3-22 SELECT THE TYPE OF LENS THAT MATCHES THE DESCRIPTION GIVEN AS THE ANSWER.

3-19. Less than 40mm focal length and used in confined spaces or when photographer wants to cover a large area.

1. Macro
2. Fisheye
3. Telephoto
4. Wide-angle

3-20. Used for close-up photography and is capable of producing life-size images?

1. Macro
2. Fisheye
3. Telephoto
4. Wide-angle

3-21. Greater than 58mm focal length and appears to compress the perspective of an image.

1. Macro
2. Fisheye
3. Telephoto
4. Wide-angle

3-22. Makes objects appear to diminish in size rapidly as the distance from the camera increases and objects close to the camera appear far apart.

1. Macro
2. Fisheye
3. Telephoto
4. Wide-angle

3-23. In photographic terms, which of the following best describes astigmatism?

1. Optical center of the lens
2. Hyperfocal distance from the lens
3. Lens aberration that causes an off-axis point
4. Out-of-focus image, resulting from improper lens adjustment

IN ANSWERING QUESTIONS 3-24 THROUGH 3-29 SELECT THE CAMERA ACCESSORY THAT MATCHES THE DESCRIPTION GIVEN AS THE ANSWER.

3-24. Dyed in a specific manner in order to absorb light of certain colors.

1. Filter
2. Flash
3. Snoot
4. Scrim

3-25. Measures light.

1. Filter
2. Snoot
3. Lens hood
4. Light meter

3-26. Three-legged support for the camera.

1. Tripod
2. Hot shoe
3. Monopod
4. Lens hood

3-27. Electronic storage device.

1. Coaxial
2. Share point
3. Tandem cord
4. Memory card

3-28. Keeps strong sunlight from striking the lens.

1. Snoot
2. Barn door
3. Lens hood
4. Light meter

3-29. High-voltage light source that produces momentary high-intensity light.

1. Filter
2. Flash
3. Shutter
4. Light stream

3-30. At what distance from the subject's face should you hold the light meter when taking a reading?

1. 3 inches
2. 4 inches
3. 5 inches
4. 6 inches

3-31. Which, if any, of the following methods of measuring light is being used when the light meter is held at the position of the subject with the photoelectric cell toward the camera?

1. Incident
2. Reflected
3. Integrated
4. None of the Above

3-32. Which of the following occurs when light is transmitted through a filter?

1. The color of light is modified
2. The amount of light is reduced
3. The vibration direction of the light rays is limited
4. All of the above

3-33. Which of the following type of filters reduces the amount of light without changing the reproduction of colors?

1. Gelatin
2. Polarizing
3. Monochrome
4. Neutral density

3-34. What type of filter changes the way your camera sees and treats light and reduces the effects of haze?

1. Gelatin
2. Polarizing
3. Monochrome
4. Neutral density

3-35. What color is a light meter calibrated to see?

1. White
2. Black
3. Dark gray
4. Middle gray

3-36. Which of the following light meter methods requires you to take two readings from a scene – highlighted area and shadow area?

1. Bracketing
2. Darkest object
3. Brightest object
4. Brightness range

3-37. When employing the substitution light meter method of tiny objects or in a confined space, what can you use to take the place of the subject's gray tones?

1. Black card
2. White card
3. Camera bag
4. Back or palm of hand

3-38. Which of the following photo terms is defined as "the pleasing arrangement of subject-matter elements within the image"?

1. Contrast
2. Exposure
3. Composition
4. Center of interest

IN ANSWERING QUESTIONS 3-39 THROUGH 3-40 SELECT THE GENERAL RULE OF COMPOSITION THAT MATCHES THE DESCRIPTION GIVEN AS THE ANSWER.

3-39. *Tic-tac-toe like pattern that divides an image to locate the possible center of interest.*

1. Pattern
2. Perpendicular
3. Rule of thirds
4. Dynamic symmetry

3-40. *Center of interest found by drawing or imagining a diagonal line from one corner to another, then a perpendicular line to the first line from the third line?*

1. Pattern
2. Perpendicular
3. Rule of thirds
4. Dynamic symmetry

3-41. *Which of the following composition techniques appears to make an image appear harmonious?*

1. Unity
2. Pattern
3. Balance
4. Harmony

3-42. *Which of the following describes a line that directs the viewer's eyes to an image's center of interest?*

1. Leading
2. Symmetrical
3. Asymmetrical
4. Perpendicular

IN ANSWERING QUESTIONS 3-43 THROUGH 3-46 SELECT THE TYPE OF LINE THAT MATCHES THE DESCRIPTION GIVEN AS THE ANSWER.

3-43. *Strength, rigidity, power and solidarity.*

1. Curved
2. Vertical
3. Diagonal
4. Horizontal

3-44. *Peace, tranquility and speed.*

1. Curved
2. Vertical
3. Diagonal
4. Horizontal

3-45. *Movement, action and speed*

1. Curved
2. Vertical
3. Diagonal
4. Horizontal

3-46. *Grace, smoothness and dignity*

1. Curved
2. Vertical
3. Diagonal
4. Horizontal

3-47. What photo composition technique provides unity and structure through repetition?

1. Pattern
2. Texture
3. Volume
4. Framing

3-48. What photo composition technique brings realism and character to an image?

1. Pattern
2. Texture
3. Volume
4. Framing

3-49. Which of the following terms best describes the relationship of objects within an image?

1. Balance
2. Harmony
3. Symmetry
4. Perspective

3-50. Which of the following types of photos is NOT an example of controlled-action?

1. Sports shot
2. Group shot
3. Studio portrait
4. Environmental shot

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ASSIGNMENT 4

Textbook Assignment: “Videography”, Chapter 4.

4-1. Which of the following terms best describes the conversion of reflected light rays from a subject or scene into electrical impulses?

1. Television
2. Waveform
3. Oscilloscope
4. Studio camera

4-2. How many charge-coupled devices (CCDs) are found inside an electronic newsgathering (ENG) camera?

1. None
2. 1
3. 2
4. 3

4-3. Which of the following adjustments made to a video camera increases image contrast?

1. Gain
2. Tripod
3. Color bars
4. Neutral density filter

4-4. Which of the following situations occurs when a shot has more than one topic or center of interest?

1. Distributes focus
2. Increases interest
3. Weakens effectiveness
4. Focuses viewer's attention

4-5. Which, if any, of the following methods place a shot's center of interest in a dominant position?

1. Rule of thirds
2. Dominant factor
3. Dynamic symmetry
4. None of the above

4-6. Which of the following adjustments has the most influence on image quality?

1. AV
2. Brightness
3. Depth of field
4. Center of interest

4-7. Which of the following is NOT a factor that affects framing?

1. Noseroom
2. Headroom
3. Field of view
4. White balance

4-8. What percentage of an image is lost when shooting with most professional video cameras?

1. 5
2. 10
3. 15
4. 18

4-9. For which of the following reasons is it necessary to leave lead room for your subject when he or she is moving?

1. Reduces shadows
2. Improves audio quality
3. Ensures proper depth of field
4. Keeps subject from appearing to bump the edge of the frame

4-10. In addition to clearing your frame of unsightly objects, what other object must you pay close attention to visually in the background?

1. Cut-off points
2. Passing ships
3. A level horizon
4. Sunset lighting

IN ANSWERING QUESTIONS 4-11 THROUGH 4-14 SELECT THE VISUAL INFORMATION TERM THAT MATCHES THE DESCRIPTION GIVEN AS THE ANSWER.

4-11. Framing issues that may make a subject appear as if her body stops at the edge of the screen.

1. Close up
2. Headroom
3. Perspective
4. Cut-off point

4-12. Apparent sense of depth based upon the relative distance and position of the subject in the frame.

1. Unity
2. Balance
3. Viewpoint
4. Perspective

4-13. Full face shot with headroom and room for the subject's shoulders.

1. Close up
2. Full length
3. Lead room
4. Headroom

4-14. The camera position in relationship to the subject.

1. Unity
2. Balance
3. Viewpoint
4. Perspective

4-15. Which of the following shooting techniques adds drama and excitement to the frame?

1. Shooting in adequate natural light
2. Shooting from different viewpoints
3. Shooting from different angles
4. All of the above

4-16. Which of the following terms best describes a video story's foundation of continuity?

1. Viewpoint
2. Basic sequence
3. Establishing shot
4. Camera angle variation

IN ANSWERING QUESTIONS 4-17 THROUGH 4-19 SELECT THE VIDEO SHOOTING TERM THAT MATCHES THE DESCRIPTION GIVEN AS THE ANSWER.

4-17. In a shooting sequence, it introduces the scene and shows the entire area of action

1. Close up
2. Long shot
3. Medium shot
4. Camera angle

4-18. Focuses attention on an important subject or action.

1. Close up
2. Long shot
3. Medium shot
4. Camera angle

4-19. Narrows the center of interest, answering the "what" of a scene.

1. Close up
2. Long shot
3. Medium shot
4. Camera angle

4-20. When shooting a basic sequence, how much extra footage at a minimum should be included before and after the shot's main action to leave room for transitions and to ease the editing process?

1. None, time and b-roll too costly
2. 2-3 seconds
3. 5-6 seconds
4. 10 seconds

4-21. Which of the following items dictates the relative distance between shots?

1. Location
2. Transitions
3. Time of day
4. Subject matter

4-22. Which of the following reasons is the basis for always shooting on the same side of the action axis?

1. Avoid cut-off points
2. Emphasizes center of interest
3. Maintains directional continuity
4. Allows shooter to stay within basic sequence

4-23. Which of the following shooting techniques works to achieve a smooth, uninterrupted flow from one shot to another?

1. Overlapping
2. 180-degree rule
3. Basic sequencing
4. Static screen directional shooting

4-24. When shooting to achieve a smooth, uninterrupted flow of action, which of the following is NOT a factor to be considered?

1. Story
2. Dialogue
3. Control of the action
4. Indoors vs. outdoors shooting

4-25. Which of the following ways do cut-ins and cutaways preserve continuity?

1. Builds interest
2. Bridges time and distance
3. Covers changes in screen direction
4. All of the above

4-26. Which, if any, of the following events is considered semi-controlled action shooting?

1. Sports
2. Ceremonies
3. Hard-news situations
4. None of the above

IN ANSWERING QUESTIONS 4-27 THROUGH 4-32 SELECT THE MOVEMENT THAT MATCHES THE DESCRIPTION GIVEN AS THE ANSWER.

4-27. Movement in front of the camera, usually by the talent.

1. Panning
2. Primary
3. Dollying
4. Secondary

4-28. Sequence of shots from two or more cameras.

1. Tilting
2. Tertiary
3. Panning
4. Primary

4-29. Horizontal movement on a stationary pedestal following the primary action.

1. Dollying
2. Tertiary
3. Panning
4. Primary

4-30. What type of video shot is absolutely centered and allows the shooter to cross the action axis and establish a new direction of travel?

1. Cutaway
2. Long shot
3. Neutral shot
4. Extreme long shot

4-31. Which of the following variations to the basic sequence always precedes a long shot and establishes physical character?

1. Cut-in
2. Full figure
3. Neutral
4. Extreme long shot

4-32. Which, if any, of the following variations to the basic sequence could startle, confuse or withhold information from the viewer?

1. Reverse sequencing
2. Cut-ins and cutaways
3. Extended sequencing
4. None of the above

4-33. Which of the following terms best describes the organizing of footage into smaller, more manageable files?

1. Continuity
2. Digitizing
3. Sequencing
4. Sub-clipping

4-34. Which of the following terms best describes the orderly structuring of facts, ideas and abstract suggestions during the editing process?

1. Continuity
2. Digitizing
3. Sequencing
4. Sub-clipping

4-35. Which of the following devices is NOT associated with the most commonly used method of video editing?

1. Cut-in
2. Cutaway
3. Crosscutting
4. Compilation

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ASSIGNMENT 5

Textbook Assignment: “Multimedia”, Chapter 5.

5-1. Which of the following MC skills can be incorporated into a multimedia production?

1. Writing
2. Photography
3. Layout and design
4. All of the above

5-2. What happens to the quality of a) raster images and b) vector images when you increase their size?

1. a) decreases b) decreases
2. a) nothing b) decreases
3. a) decreases b) nothing
4. a) nothing b) nothing

5-3. Which of the following items should NOT be edited using vector-based software?

1. Charts
2. Drawings
3. Diagrams
4. Photographs

5-4. Which of the following actions helps improve multimedia production skills?

1. Practice
2. Experimenting
3. Reading graphics software manuals
4. All of the above

IN ANSWERING QUESTIONS 5-5 THROUGH 5-9 SELECT THE VECTOR TERM FROM THE LIST BELOW THAT MATCHES THE DESCRIPTION GIVEN AS THE ANSWER.

- | | |
|-----------|-----------------|
| A. Fill | D. Miter Limit |
| B. Path | E. Anchor Point |
| C. Stroke | F. Bézier Curve |

5-5. The basis for all vector drawings.

1. B
2. D
3. E
4. F

5-6. A tracing around an object that can be colored or patterned.

1. A
2. C
3. E
4. F

5-7 Adds color or pattern to an open area.

1. A
2. B
3. C
4. D

5-8. *A shape formed by lines collected at a point.*

1. B
2. D
3. E
4. F

5-9. *Which of the following instructions dictates policy for the marking and filing of all Navy graphics?*

1. OPNAVINST 3432.1
2. SECNAVINST 3104.1
3. CHINFOINST 5230.16
4. SECNAVINST 5720.44

5-10. *Which of the following terms best describes the actual placement of items on a page as well as the relationships among the items?*

1. Perspective
2. Layout and design
3. Multiple-page layout
4. Raster-graphic design

IN ANSWERING QUESTIONS 5-11 THROUGH 5-14 SELECT THE TERM THAT BEST MATCHES THE DESCRIPTION GIVEN AS THE ANSWER.

5-11. *Demonstrates movement and communicates feeling or mood?*

1. Unity
2. Balance
3. Rhythm
4. Emphasis

5-12. *Visual cues to tell the reader what elements belong together on a page.*

1. Unity
2. Balance
3. Rhythm
4. Emphasis

5-13. *Equal distribution of weight from the elements on a page.*

1. Unity
2. Balance
3. Rhythm
4. Emphasis

5-14. *Highlights one element over another, capturing the reader's attention.*

1. Unity
2. Balance
3. Rhythm
4. Emphasis

5-15. *Which of the following examples DOES NOT create unity in a layout?*

1. Kerning
2. Leading
3. Spacing
4. Grouping

5-16. *Horizontal lines in a layout communicate which of the following messages?*

1. Strength
2. Elegance
3. Movement
4. Relaxation

5-17. Curved lines in a layout communicate which of the following messages?

1. Strength
2. Elegance
3. Movement
4. Relaxation

5-18. In which of the following ways does using shapes enhance a layout?

1. Sustains interest
2. Organizes elements
3. Provides a starting point
4. All of the above

5-19. Which of the following items is considered an abstract shape?

1. Tree
2. Circle
3. Square
4. Handicap symbol

5-20. Which of the following design terms BEST describes the space between and around items in a layout?

1. Gutter
2. Galley
3. Leading
4. White space

5-21. What type of mood is created by using high-contrast colors in a layout?

1. Calming
2. Instability
3. Confusion
4. Excitement

5-22. Which of the following design elements is considered the ultimate tool for symbolic communication?

1. Size
2. Color
3. Shape
4. Texture

5-23. What is the main purpose of a good design layout?

1. Directs reader's attention
2. Conveys intended message
3. Aesthetically pleasing to the eye
4. All of the above

5-24. A 72-point headline is of what vertical length?

1. ¼ inch
2. ½ inch
3. 1 inch
4. 1 ½ inches

5-25. What, if any, of the following occurs when tight leading is used within your layout?

1. Fills the page
2. Airs out sentences
3. Decreases legibility
4. None of the above

5-26. What is the target line length for optimal readability?

1. 10 characters
2. 25 characters
3. 55 characters
4. 100 characters

5-27. What is the minimum point size you should use for text in a layout?

1. 7
2. 8
3. 10
4. 12

5-28. Times New Roman is an example of what design element?

1. Stroke
2. Kerning
3. Typeface
4. San serif font

5-29. What are the three types of indentions used in layouts?

1. Flush, hanging and regular
2. Flush, pulled and regular
3. Hanging, pulled and regular
4. Hanging, kerned and pulled

IN ANSWERING QUESTIONS 5-30 THROUGH 5-34 SELECT THE DESIGN ELEMENT THAT BEST MATCHES THE DESCRIPTION GIVEN AS THE ANSWER.

5-30. Invisible structure used to provide visual organization during layout process.

1. Grid
2. Gutter
3. Border
4. White space

5-31. Horizontal or vertical line used to offset areas on a layout.

1. Rule
2. Bleed
3. Border
4. Grid system

5-32. Photo or illustration that extends beyond a page margin.

1. Rule
2. Bleed
3. Gutter
4. Border

5-33. Decorative line or box used to give the layout an organized appearance.

1. Grid
2. Rule
3. Gutter
4. Border

5-34. Blank space between to facing pages.

1. Grid
2. Rule
3. Gutter
4. Border

5-35. Which of the following steps should be the first taken during the development of an electronic presentation?

1. Design
2. Testing
3. Planning
4. Production

5-36. Which, if any, of the following factors are the most important to consider when creating an electronic presentation?

1. Text and color
2. Number of slides
3. Simplicity and legibility
4. None of the above

5-37. What type of graphical relationship is created by using only one family of type in an electronic presentation?

1. Conflicting
2. Contrasting
3. Concordant
4. Combination

5-38. What type of graphical relationship is created by using separate, but clearly distinct, typefaces in an electronic presentation?

1. Conflicting
2. Contrasting
3. Concordant
4. Combination

5-39. Which of the following typefaces are recommended for use in electronic presentations?

1. Serif only
2. Slab-serif only
3. Sans-serif only
4. Slab-serif and sans-serif

5-40. Which of the following guidelines should be followed when creating presentation slides?

1. All caps for text
2. Three topics per slide
3. Six lines per slide, six words per line
4. All of the above

5-41. On average, what amount of time does a viewer spend reading each slide?

1. 2-second glance
2. 5 seconds
3. 7 seconds
4. 15 seconds

5-42. Which of the following types of color is best suited for use on slide backgrounds, when you want to create a receptive and passive atmosphere for your audience?

1. Cool colors
2. Warm colors
3. Bright colors
4. Neutral colors

5-43. Which of the following guidelines should be followed when using and deciding upon colors for your electronic presentation?

1. Avoid red-green combinations
2. Use bright colors for emphasis
3. Establish color palette and stick to it
4. All of the above

IN ANSWERING QUESTIONS 5-44 THROUGH 5-45 SELECT THE PRINCIPLE OF DESIGN FOR PRESENTATIONS THAT BEST MATCHES THE DESCRIPTION GIVEN AS THE ANSWER.

5-44. Major cause of unappealing layouts.

1. Contrast
2. Proximity
3. Alignment
4. Repetition

5-45. Most important visual attraction for electronic presentations.

1. Contrast
2. Proximity
3. Alignment
4. Repetition

5-46. When developing graphics for your electronic presentation to be given via an overhead projector, what concentration of dots per inch should you strive for?

1. 72
2. 150
3. 300
4. 600

IN ANSWERING QUESTIONS 5-47 THROUGH 5-49 SELECT THE MOVIE AUTHORING STAGE THAT BEST MATCHES THE DESCRIPTION GIVEN AS THE ANSWER.

5-47. Development of story line and writing of the script.

1. Design
2. Testing
3. Planning
4. Concept

5-48. Question-and-answer stage needed to establish the project and its purpose.

1. Design
2. Testing
3. Planning
4. Concept

5-49. Stage during which members of your intended audience review the product.

1. Design
2. Testing
3. Planning
4. Concept

5-50. Which of the following terms describes a type of multimedia production that is interactive, such as with computer-based training and games?

1. Linear
2. Nonlinear
3. Horizontal
4. Perpendicular

5-51. Which of the following terms best describes the process of filling the frames between the main points of action for fluidity in an animated production?

1. Keying
2. Walking
3. Morphing
4. Tweening

5-52. Which of the following Navy policies is the governing instruction for the maintenance and development of websites?

1. OPNAVINST 5040.05
2. OPNAVINST 5112.3
3. SECNAVINST 3104.1
4. SECNAVINST 5724.27

5-53. Which of the following terms best describes the unique address given to the location of a file on the Internet?

1. File transfer site
2. Domain name server
3. Internet protocol address
4. Uniform resource locator

5-54. During which stage of website creation would you use drawings, flowcharts and storyboards to map out ideas for pages?

1. Design
2. Concept
3. Planning
4. Production

5-55. Which of the following guidelines is a best practice when deciding upon text and where to place it on your website?

1. Use all caps
2. Center all text
3. Left-justify body text; center titles
4. Use common acronyms to save space and keep the page clean and simple

5-56. Which of the following guides should you adhere to when placing graphics on your website?

1. Keep images at 300 dpi
2. Do not compress images
3. Reduce images for quicker downloading
4. Only link to images on Navy.mil

5-57. Which of the following sections of the 1973 Rehabilitation Act established requirements for the public access to electronic information and information technology for people with disabilities?

1. Section 501
2. Section 503
3. Section 505
4. Section 508

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ASSIGNMENT 6

Textbook Assignment: *"Print Production", Chapter 6.*

6-1. Who is credited with inventing the mechanical moveable-like printing press?

1. Martin Cooper
2. Chester Carlson
3. George Eastman
4. Johannes Gutenberg

6-2. Which of the following is NOT a basic category of desktop publishing software?

1. Digital
2. Layout
3. Graphics
4. Composition

6-3. What type of desktop printer sprays electrically charged ink through tiny nozzles to form an image of high-quality resolution?

1. Laser
2. Inkjet
3. Thermal-dye
4. Digital duplicator

6-4. What type of desktop printer uses thousands of tiny heating elements that come into contact with donor ribbons to release color?

1. Laser
2. Inkjet
3. Thermal-dye
4. Digital duplicator

6-5. Which of the following terms best describes the high-speed printing system designed for high-volume photocopying and printing?

1. Laser
2. Inkjet
3. Thermal-dye
4. Digital duplicator

IN ANSWERING QUESTIONS 6-6 THROUGH 6-8 SELECT THE CHARACTERISTIC OF PAPER THAT BEST MATCHES THE DESCRIPTION GIVEN AS THE ANSWER.

6-6. Determined by the type of pulp used, treatments and end use for the paper.

1. Finish
2. Grade
3. Basis weight
4. Paper density

6-7 Texture of the paper

1. Finish
2. Grade
3. Basis weight
4. Paper density

6-8. Measurement of paper's compactness (how much light the paper lets in).

1. Finish
2. Grade
3. Basis weight
4. Paper density

6-9. Which of the following actions should you take when you begin to notice defective prints when using a digital duplicator?

1. Change the print color
2. Replace the master roll
3. Clean the thermal print head
4. Change the print density setting

6-10. Which of the following types of scanners has the capability of scanning three-dimensional objects?

1. Slide scanner
2. Hand scanner
3. Flatbed scanner
4. Copystand scanner

6-11. Which of the following types of scanners has the capability for small-quantity scanning?

1. Slide scanner
2. Hand scanner
3. Flatbed scanner
4. Copystand scanner

6-12. Which of the following is another term used synonymously with the knife angle of a paper cutter?

1. Draft
2. Bevel
3. Snubber
4. Cutting stick

6-13. Which of the following items keeps a paper cutter's knife from dulling too easily or breaking every time it's used?

1. Draft
2. Bevel
3. Snubber
4. Cutting stick

6-14. Which of the following terms best describes the metal bar that runs parallel to the knife that holds paper firmly in place during cutting?

1. Stock slide
2. Back gauge
3. Cutter clamp
4. Thumbscrew

6-15. Which of the following is NOT a common fold of paper used in print production?

1. Gate
2. French
3. Tabletop
4. Accordion

IN ANSWERING QUESTIONS 6-16 THROUGH 6-19 SELECT THE BINDING METHOD THAT BEST MATCHES THE DESCRIPTION GIVEN AS THE ANSWER.

6-16. Also known as padding, this method makes tablets or pads by cementing the edge of a stack of paper sheets.

1. Adhesive
2. Mechanical
3. Thread-sewing
4. Saddle-stitching

6-17. *Allows for flat binding and uses coils, combs or metal rings to join sheets of paper.*

1. Adhesive
2. Mechanical
3. Thread-sewing
4. Saddle-stitching

6-18. *Uses staples through the centerfold along the backbone of brochures or thin magazines?*

1. Adhesive
2. Mechanical
3. Thread-sewing
4. Saddle-stitching

6-19. *Most expensive binding process, usually reserved for fine literature and reference books?*

1. Adhesive
2. Mechanical
3. Thread-sewing
4. Saddle-stitching

6-20. *Which of the following terms describes the type of mat cutter used in photo matting?*

1. Emery
2. Carriage
3. Guillotine
4. Precision

6-21. *Which of the following describes a major difference between matting and mounting a print for display?*

1. Matting enhances the image
2. Matting is only used for photographs
3. A matted print is a protected print
4. A matted print is placed behind a cut opening; the mat surrounds the print

6-22. *In which of the following print-mounting methods is the bond often temporary?*

1. Dry
2. Wet
3. Porous
4. Pressure

6-23. *Which of the following rules IS NOT in adherence to the Counterfeit Act of 1992 for the use of money in illustrations?*

1. The illustration must be one-sided
2. The illustration must be an actual-size duplication of the actual currency
3. The illustration must be less than 3/4s or more than 1 ½ the size of the actual currency
4. All files used in the making of the illustration must be destroyed following use

6-24. *In what policy guidance will you find the Navy Visual Information Management and Operations Manual?*

1. OPNAVINST 3104.1
2. CHINFOINST 5720.8
3. DoD Directive 5040.02
4. SECNAVINST 5720.44

6-25. What is the purpose of a mandatory job order log used to track visual information products?

1. Inventory materials used
2. Maintain close control of services
3. Provide receipt for finished works
4. All of the above

ASSIGNMENT 7

Textbook Assignment: “File Management and Transmission”, Chapter 7.

7-1. Who assigns the Visual Information Record Identification Number (VIRIN)?

1. Defense Imagery Management Operations Center (DIMOC)
2. The originator
3. Navy Visual News Service (NVNS)
4. Chief of Information (CHINFO)

7-2. You are preparing a VIRIN for the third photograph shot on April 4, 2011. Which of the following examples is in the proper format?

1. 040411-N-SQ684-003
2. 110404-N-SQ684-001
3. 110404-M-SQ684-003
4. 110404-N-SQ684-003

7-3. How many data elements does a VIRIN consist of?

1. 4
2. 5
3. 13
4. 15

IN ANSWERING QUESTIONS 7-4 THROUGH 7-7 MATCH THE FIELD FROM THE LIST THAT MATCHES THE DESCRIPTION GIVEN AS THE ANSWER

- | | |
|------------|------------|
| A. Field 1 | C. Field 3 |
| B. Field 2 | E. Field 4 |

7-4. The year, month and day of acquisition or origination

1. B
2. D
3. A
4. C

7-5. The originator's Vision ID code

1. A
2. C
3. D
4. B

7-6. The image or unit of media number in sequential order

1. C
2. D
3. B
4. A

7-7. The service affiliation or status of the camera operator or originator

1. C
2. A
3. D
4. B

7-8. What information should be included on a VIRIN slate for a video?

1. Videographer name and rank
2. Brief description of the sequence
3. Release status of the video
4. All of the above

7-9. Which form is used for writing captions for motion imagery?

1. DD Form 10700
2. DD Form 2537
3. DD Form 1348
4. DD Form 2533

7-10. What are the two types of captions for video?

1. Total and Sequence
2. Sequential and Total
3. Sequence and Shot
4. Total and Shot

7-11. Which video caption type describes the contents of the entire video sequence?

1. Total
2. Sequential
3. Shot
4. Sequence

7-12. If system software does not support long file names, what information should the file name include?

1. Date in VIRIN format and last two characters of the sequence number
2. Date in VIRIN format and Vision ID
3. Description of the image or video
4. None of the above

7-13. Which file format is organized into alternating ("interleaved") chunks of audio and video data used for storing and playing back movie clips with sound on Windows™-based PCs?

1. MOV
2. DV
3. AVI
4. GIF

7-14. Which software takes a raw data file and turns it into a compressed file?

1. TIFF
2. RAW
3. CODEC
4. MIDI

7-15. Which file format is optimized for photographs and similar continuous tone images that contain many, many colors?

1. JPEG
2. GIF
3. MPEG1
4. BMP

7-16. What describes the average amount of data required to store one second of music, expressed in kilobits per second, or Kbps, with audio compression?

1. FTP
2. Bitrate
3. FFT
4. CODEC

7-17. Which file format is a flexible MPEG container format used for both streaming and downloadable Web content?

1. MP3
2. MPEG1
3. MPEG2
4. MPEG4

7-18. Which file format is a flexible container format for digital still images, commonly used in desktop publishing?

1. GIF
2. TIFF
3. MOV
4. JPEG

7-19. Which file format is a standard audio format for Windows™ operating systems, often used for storing high-quality, uncompressed sound?

1. AIFF
2. MIDI
3. MP3
4. WAV

7-20. Which file format employs a lossy compression system and is the most popular codec for storing and transferring music ?

1. MP3
2. WAV
3. MIDI
4. WMV

7-21. What is metadata?

1. File format commonly used to compress data for desktop publishing
2. File that contains commands that let MIDI-capable synthesizers recreate a specific musical passage
3. Pertinent information about the image embedded into the image's file information
4. Uniform copyright protection protocol that would work with a variety of digital players, software programs, and download sites

7-22. What information is contained in metadata?

1. Contact Information
2. Caption
3. Keywords about the photograph
4. All of the above

7-23. Which of the following is a preferred method to transfer image and video files to DIMOC?

1. Federal Express
2. E-mail
3. FTP
4. Social media site

7-24. Which client-server based transmission application allows users to routinely transmit large computer files using Windows based computers over IP-based networks?

1. FFT
2. HTTPS
3. HTTP
4. FTP

7-25. How should you keep information that is extremely valuable to our enemies?

1. Censored and classified
2. Classified and safeguarded
3. Uncensored and unclassified
4. Unclassified and safeguarded

7-26. What policy governs the safeguarding of classified material in the Navy?

1. OPNAVINST 5510.1(series)
2. SECNAVINST 5216.5(series)
3. SECNAVINST 5720.44(series)
4. OPNAVINST 3104.1(series)

Graphic Design and Print Production Fundamentals

Graphic Design and Print Production Fundamentals

Graphic Communications Open Textbook Collective

Wayne Collins; Alex Hass; Ken Jeffery; Alan Martin; Roberto Medeiros; and
Steve Tomljanovic

BCCAMPUS
VICTORIA, B.C., CANADA



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1. "Open Educational Resources," *Hewlett Foundation*, <https://hewlett.org/strategy/open-educational-resources/> (accessed September 27, 2018).

Introduction

Ken Jeffery



Figure I.1 Car graphics are an example of modern day print design

On any given day, you can look around your surroundings and come in contact with print design. Information comes to you in many forms: the graphics on the front of a cereal box, or on the packaging in your cupboards; the information on the billboards and bus shelter posters you pass on your way to work; the graphics on the outside of the cup that holds your double latte; and the printed numbers on the dial of the speedometer in your car. Information is communicated by the numbers on the buttons in an elevator; on the signage hanging in stores; or on the amusing graphics on the front of your friend's T-shirt. So many items in your life hold an image that is created to convey information. And all of these things are designed by someone.



Figure I.2 Times Square has many examples of print design

Traditionally referred to as graphic design, communication design is the process by which messages and images are used to convey information to a targeted audience. It is within this spectrum that this textbook will address the many steps of creating and then producing physical, printed, or other

imaged products that people interact with on a daily basis. Design itself is only the first step. It is important when conceiving of a new design that the entire workflow through to production is taken into consideration. And while most modern graphic design is created on computers, using design software such as the Adobe suite of products, the ideas and concepts don't stay on the computer. To create in-store signage, for instance, the ideas need to be completed in the computer software, then progress to an imaging (traditionally referred to as printing) process. This is a very wide-reaching and varied group of disciplines. By inviting a group of select experts to author the chapters of this textbook, our goal is to specifically focus on different aspects of the design process, from creation to production.

Each chapter begins with a list of Learning Objectives, and concludes with Exercises and a list of Suggested Readings on the Summary page. Throughout, key terms are noted in bold and listed again in a [Glossary](#) at the end of the book.

In [Chapter 1](#), we start with some history. By examining the history of design, we are able to be inspired by, and learn from, those who have worked before us. Graphic design has a very rich and interesting heritage, with inspirations drawn from schools and movements such as the Werkbund, Bauhaus, Dada, International Typographic Style (ITS), as well as other influences still seen in the designs of today.

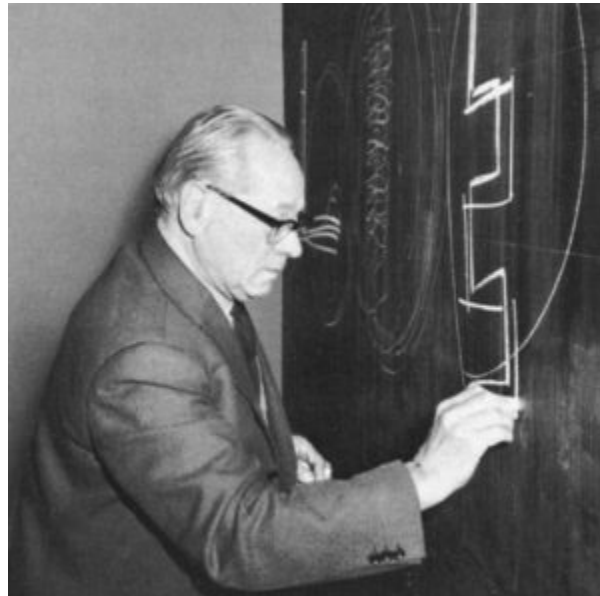


Figure 1.3 Johannes Itten was a designer associated with the Bauhaus school

We now work in an age where the computer has had an influence on the era of Post Modernism. Is this a new age? Are we ushering in an era unseen before? Or are modern-day designs simply a retelling of the same tropes we have seen for hundreds of years?

[Chapter 2](#) follows with a discussion about the design process. Contrary to what we tend to see in popular television shows and movies where advertising executives are struck with instant, usable, and bold ideas, design strategies are seldom insights gained through such a sudden outburst of inspiration. The design process is a deliberate, constructive, and prescriptive process that is guided by specific strategies. For example, before any piece of designed communication can be started, some very detailed research needs to be performed. This happens well before any graphic design or layout software is opened on a computer. Designing is a form of problem solving, where a system is created to communicate a specific

and targeted message. The design process is the way that a designer breaks the problem into discrete creative activities. First is an exploration of what is trying to be achieved. Facts are gathered about the problem, and the problem itself is often defined very specifically. The idea phase is where brainstorming and ideation occurs, often without judgment, as a way to gather as many different ideas and directions as possible. From this, solutions are evaluated, both for their perceived impact on the target audience and for their perceived effectiveness in portraying the desired message. Finally, all of this information is distilled into an accepted solution. Designers do not sit around waiting for ideas to just happen; they follow a process in order to make it happen.

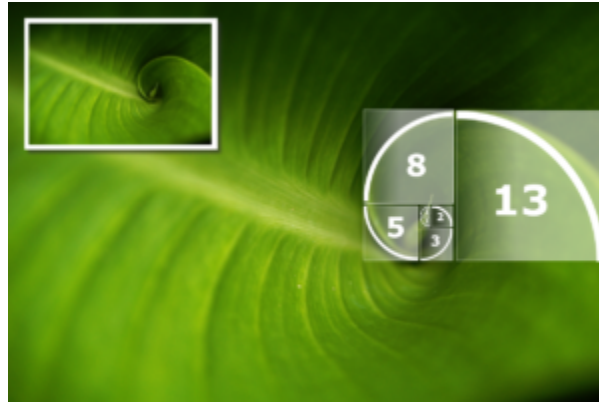


Figure I.4 The golden ratio is a constant that appears in nature

[Chapter 3](#) presents the most important and necessary design elements required for effective graphic layout and design. When designing a layout, the designer cannot just ‘throw’ all of the information onto the page. Design is a thoughtful process that makes use of many different skills to create a design that is both appealing and legible. We discuss the grid in its many forms, including different types of grid such as the ITS grid, the golden ratio, and even strategies for using no grid at all. Space is an important design element, with different items on the page requiring more or less area to be effective. We also talk about the density, or ‘colour’ of type on the page, along with a number of different typographical conventions for making the most of the collection of words on the layout.

In [Chapter 4](#), we begin to move along in the production process and discuss some of the more physical attributes of design. And one of the most important topics in creating printed products is that of colour. It is a complex part of the design process, affecting how an image is transmitted to the eye, how the colours are perceived, and what makes one thing look different from another, even if it is the same colour. Have you ever printed something on your home printer only to be disappointed that it doesn’t look like it did on your computer screen? Highly detailed systems of colour management are put in place to mitigate these differences.

As we proceed toward creating printed output, [Chapter 5](#) is where it all starts to come together. In the print process, this stage is called prepress. Prepress is where all the design work is translated from a file on the computer in front of you into a form that can be ‘printed’ onto a given surface. Imagine the requirements for creating not just one copy of a design, but thousands! This is a very important step, and if mistakes or production hurdles are not discovered and overcome at this step, then the project can end up being very costly for all parties involved, from the designer, to the printer, to the client. This chapter deals with topics such as preflight, imposition, separations, platemaking, and considerations for other print and finishing processes.

[Chapter 6](#) is a comprehensive look at how all of this design work will result in a finished product. The many ways that a design can be printed are varied and complex, but having some knowledge about how the print process works will help to create a more successful project. Is it going to be printed on a box, or on a billboard? How many copies are needed: one or one million? These and many more decisions influence how a product will be produced. This chapter outlines some of the more popular printing technologies, along with industry standard procedures for working with them. Suggestions for choosing the right paper (or other types of **substrates**) are also made along with best practices for working with colour on the printed page.

[Chapter 7](#) rounds out this textbook with a look at online technologies and how they affect, and are affected by, the printed word. We examine online web-to-print solutions and their contribution to bridging the process from graphic design to printed work. We also highlight other considerations such as branding and digital file resolution strategies. As the world has moved into an Internet-connected, always-on compendium of information, print remains a vital, relevant, and important part of the media mix. Effective communication campaigns make the most of *all* opportunities that media design and, in particular, print design can offer.

The goal of this text is to bridge the disciplines of communication design and print production to form a concise, accessible compendium outlining the design process in this modern, computer-driven age. While it is common, or perhaps easy, to surmise that graphic design is solely a computer-driven pursuit, when we take a step back, and look at the entire process, we see that computer-aided design is only one part of a larger picture. And by including this larger domain in our studies, we can truly gain an appreciation for the influences and strategies needed to be successful in this field.

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Chapter 1. Design History

1.1 Introduction

Alex Hass

Learning Objectives

- Identify the unique attributes of major modern graphic design styles, beginning with William Morris. The design styles discussed will be those that have a presence or an influence in our current visual culture:
 - Morris
 - Werkbund
 - Bauhaus
 - Dada
 - International Typographic Style (ITS)
 - Late Modern
 - Post Modern
- Evaluate the influence of past design styles on one another
- Explain the influence of culture on major modern graphic design styles
- Identify the cross-cultural influences of visual culture that impacted graphic design style
- Identify the technological influences that affected and advanced graphic design

Industrial Revolution Overview

The Craftsman

Before the Industrial Revolution (1760-1840 in Britain) most aspects of design and all aspects of production were commonly united in the person of the craftsman. The tailor, mason, cobbler, potter, brewer, and any other kind of craftsman integrated their personal design aesthetic into each stage of product development. In print, this meant that the printer designed the fonts, the page size, and the layout of the book or broadsheet; the printer chose (even at times made) the paper and ran the press and bindery. Unity of design was implicit.

Typography in this pre-industrial era was predominantly used for books and broadsheets. The visual flavour of the fonts was based on the historic styles of western cultural tradition — roman, black letter, italic, and grotesque fonts were the mainstay of the industry. Typography was naturally small scale

— needed only for sheets and pages — and was only large when it was chiseled into buildings and monuments.

Technological Shift

The Industrial Revolution radically changed the structure of society, socially and economically, by moving vast numbers of the population from agrarian-based subsistence living to cities where manufacturing anchored and dominated employment and wealth. Agrarian-based society was tied to an aristocracy overseeing the land and controlling and directing production through the use of human labour. In contrast, urban production, though still very much in need of human labour (female and child labour in particular was in huge demand), was dominated by the mechanized production of goods, directed and controlled by industrialists instead of the aristocracy. The factories were powered initially by steam, and eventually by gasoline and electricity. These new manufacturing models were dominated by an engineering mentality that valued optimization of mechanical processes for high yields and introduced a compartmentalized approach to production.

Design and Production Separate

The design process was separated from the production-based process for a number of reasons. Primary was the efficiency-oriented mindset of the manufacturers who were focused on creating products with low unit costs and high yield outcomes, rather than on pleasing aesthetics or high-quality materials. Design process is time consuming and was considered unnecessary for each production stage of manufactured goods.

Manufactured products were intended for the working and middle classes, and high-quality output was not a goal. These products were never intended to vie for the attention of the upper classes — enticing them away from the services and bespoke products of the craftsman (a contemporary example is Tip Top Tailors attracting Savile Row customers). Rather, they supplied common people with goods they had not been able to afford before. This efficient line of thinking created the still existing equation of minimal design plus low material integrity equalling low-cost products.

Design, rather than being a part of each step of production (implicit in the craftsman's approach), was added for form development and when a product needed more appeal for the masses — usually during the later stages of production through decorative additions. Design was now directed by the parameters and constraints of the manufacturing process and its needs.

Advertising Emerges

Despite low product standards, the high quantities and low costs of manufactured goods “stimulated a mass market and even greater demand” (Meggs & Purvis, 2011, p. 127). The historic role of graphic design for broadsheets and books expanded at this point to include advertising. Each company and product needed exposure to sell these manufactured products to the mass market — no earlier method of promotion could communicate to this number of people.

The design aesthetic of these times was relatively untouched by stylistic cohesion or design philosophy. Industrialists used a pastiche of historic styles that aspired to make their products look more upscale,

but did not go as far as to create a new visual language. This was a strategy that made sense and has since been repeated (consider early computer design aesthetics). Usually, when a new medium or communication strategy is developed (advertising in print and the posters of the Industrial Revolution), it uses visual and language styles that people are already familiar with, and introduces a new way to deliver the message. Too much change alienates, but novelty of delivery works by adding a twist on the shoulders of an already familiar form.

Font Explosion

In addition to its new role in promoting products to the mass market, graphic design moved forward with an explosion of new font designs as well as new production methods. The design of fonts had earlier been linked to the pragmatic and cultural objectives of producing books and broadsheets. With large format posters and numerous other print components, text needed to do much more than represent a phonetic symbol. Innovations in production affected — perhaps infected — printers with the pioneer spirit of the times, and all products and their potential were examined and re-evaluated. This attitude naturally included the function and design of fonts and the methods used to reproduce them. Text was often the only material used to promote its subject and became integral to a visual communication. Jobbing printers who used either letterpress or lithographic presses pushed the boundaries of both, competing with each other by introducing innovations and, in turn, pushing artists and type foundries to create more products they could use. An entirely new font category, slab serif — sometimes called Egyptian — was created. Thousands of new fonts emerged to meet the demand of the marketplace.

Photography

In addition to font development, the Industrial Age also contributed the photograph and ultimately its use in books and advertising. Photography (for print design) was originally used as a research tool in developing engravings, but this was costly and time consuming. Numerous inventors searched for ways to integrate photography into the press process since the early years of its development in the 1830s. Photo engraving eventually arrived in 1871 using negatives and plates. From that time forward, photography has been used to conceptually and contextually support the communication of graphic design in its many forms.

1.2 William Morris and the Arts & Crafts Movement

Alex Hass

Conditions and Products of the Industrial Age

The Arts & Crafts movement emerged in the second half of the 19th century in reaction to the social, moral, and aesthetic chaos created by the Industrial Revolution. William Morris was its founder and leader. He abhorred the cheap and cheerful products of manufacturing, the terrible working and living conditions of the poor, and the lack of guiding moral principles of the times. Morris “called for a fitness of purpose, truth to the nature of the materials and methods of production, and individual expression by both artist and worker” (Meggs & Purvis, 2011, p. 160). These philosophical points are still pivotal to the expression of design style and practice to this day. Design styles from the Arts & Crafts movement and on have emphasized, in varying degrees, either fitness of purpose and material integrity, or individual expression and the need for visual subjectivity. Morris based his philosophy on the writings of John Ruskin, a critic of the Industrial Age, and a man who felt that society should work toward promoting the happiness and well-being of every one of its members, by creating a union of art and labour in the service of society. Ruskin admired the medieval Gothic style for these qualities, as well as the Italian aesthetic of medieval art because of its direct and uncomplicated depiction of nature.

Many artists, architects, and designers were attracted to Ruskin’s philosophy and began to integrate components of them into their work. Morris, influenced by his upbringing in an agrarian countryside, was profoundly moved by Ruskin’s stance on fusing work and creativity, and became determined to find a way to make it a reality for society. This path became his life’s work.

Pre-Raphealite Brotherhood

Morris met Edward Burne-Jones at Exeter College when both were studying there. They both read extensively the medieval history, chronicles, and poetry available to them and wrote every day. Morris published his first volume of poetry when he was 24, and continued to write and publish for the rest of his life. After graduation, Morris and Burne-Jones tried a few occupations, and eventually decided to become artists. Both became followers of Dante Gabriel Rossetti who founded the Pre-Raphealite brotherhood that was based on many of Ruskin’s principles. Morris did not last long as a painter, eventually finding his design vocation while creating a home for himself and his new wife (Rossetti’s muse and model).

Discovering the lack of design integrity in Victorian home furnishings and various additional deficiencies in other aspects of home products, he chose to not only design his home, but all its furniture, tapestries, and stained glass.

Morris & Co.

In 1860, Morris established an interior design firm with friends based on the knowledge and experiences he had in crafting and building his home. He began transforming not only the look of home interiors but also the design studio. He brought together craftsmen of all kinds under the umbrella of his studio and began to implement Ruskin's philosophy of combining art and craft. In Morris's case, this was focused on making beautiful objects for the home. The craftsmen were encouraged to study principles of art and design, not just production, so they could reintegrate design principles into the production of their products. The objects they created were made and designed with an integrity a craftsman could feel proud of and find joy in creating, while the eventual owner would consider these products on par with works of art (an existing example is the Morris chair). The look of the work coming out of the Morris studio was based specifically on an English medieval aesthetic that the British public could connect to. The English look and its integrity of production made Morris's work very successful and sought after. His organizational innovations and principled approach gained attention with craftsmen and artisans, and became a model for a number of craft guilds and art societies, which eventually changed the British design landscape.

William Morris and the Kelmscott Press

Morris's interest in writing never waned and made him acutely aware of how the book publishing industry had been negatively affected by industrialization. One of his many pursuits included the revitalization of the book form and its design components through the establishment of the Kelmscott Press. The press was created in 1888 after Morris, inspired by a lecture about medieval manuscripts and incunabula publications, began the design of his first font, Golden, which was based on the Venetian roman face created originally by Nicolas Jenson.

In his reinterpretation of this earlier font, Morris strove to optimize readability while retaining aesthetic integrity — in the process reviving interest in font design of earlier periods. Morris used this font in his first book, *The Story of Glittering Plain*, which he illustrated, printed, and bound at his press. The design approach of this publication and all others Kelmscott produced in its eight years was based on recreating the integrated approach and beauty of the incunabula books and manuscripts of the medieval period. All aspects of the publication were considered and carefully determined to create a cohesive whole. The press itself used hand-operated machinery, the paper was handmade, and the illustrations, fonts, and page design were all created and unified by the same person to make the book a cohesive, beautiful object of design. Morris did not wholly reject mechanization, however, as he recognized the advantages of mechanical process. He considered, redesigned, and improved all aspects of design and production to increase physical and aesthetic quality.

Kelmscott Press produced over 18,000 volumes in the eight years of its existence and inspired a revival of book design on two continents. In addition, Morris inspired a reinterpretation of design and design practice with his steadfast commitment to Ruskin's principles. Future generations of designers held to Morris's goals of material integrity — striving for beautiful utilitarian object design and carefully considered functionality.

1.3 Deutscher Werkbund

Alex Hass

In the early years of the 20th century, the German Hermann Muthesius returned to Germany from England with Morris's Arts & Crafts concepts. Muthesius published the *The English House* in 1905, a book wholly devoted to the positive outcomes of the English Arts & Crafts movement. Muthesius was a sometime cultural ambassador, possibly an industrial spy, for Germany in England. His interest in the Arts & Crafts movement was not based on returning German culture to the romantic values of an earlier pre-manufacturing era. He was focused on infusing the machine-made products of Germany with high-quality design and material integrity. Muthesius believed manufacturing was here to stay. He was one of the original members of the state-sponsored Deutscher Werkbund — an association that promoted the union of art and technology. The Werkbund integrated traditional crafts and industrial mass-production techniques, and put Germany on a competitive footing with England and the United States. Its motto “Vom Sofakissen zum Städtebau” (from sofa cushions to city-building) reveals its range.

Design Embraces the Manufacturing Process

Peter Behrens and Henry van de Velde were also part of the original leadership, and with Muthesius developed the philosophy of *Gesamtkultur* — a cohesive cultural vision where design was the driving force of a wholly fresh, man-made environment. Every aspect of the culture and its products was examined and redefined for maximum use of mechanization in its production. The new visual language of *Gesamtkultur* was a style stripped of ornament in favour of simplicity and function. All areas of cultural production were affected by this new philosophy — graphic design, architecture, industrial design, textiles, and so forth — and all were reconfigured and optimized. Sans serif fonts dominated the reductive graphic design style as did standardization of sizes and forms in architecture and industrial design. Optimization of materials and mechanical processes affected every area. Germany embraced this new philosophy and visual style for its simplicity and exactness. In 1919, Walter Gropius, a modernist architect whose work was inspired by Werkbund ideals, was finally successful in opening a school he called the Bauhaus (in Weimar where artists, industrialists, and technicians would develop their products in collaboration). These products would then build a new future for German exports by virtue of their high level of functional utility and beauty.

1.4 Bauhaus

Alex Hass

The Bauhaus philosophy has become famous for its integrated approach to design education; “it precipitated a revolution in art education whose influence is still felt today” (Whitford, 1995, p. 10). Most art colleges and universities still base much of their foundational curriculum on its fundamental ideas.

The Bauhaus school was founded with the idea of creating a ‘total’ work of art in which all arts, including architecture, would eventually be brought together. The first iteration of the school brought together instructors from all over Europe working within the latest art and design styles, manufacturing ideologies, and technologies. An example of this new teaching style can be found in its first-year curriculum. This foundation year exposed all students to the basic elements and principles of design and colour theory, and experimented with a range of materials and processes. This allowed every student the scope to create projects within any discipline rather than focus solely on a specialty. This approach to design education became a common feature of architectural and design schools in many countries.

In addition to its influence on art and design education, the Bauhaus style was to become a profound influence upon subsequent developments and practices in art, architecture, graphic design, interior design, industrial design, and typography.

The school itself had three iterations in its 14-year run. With each iteration, the core concepts and romantic ideals were modified and watered down to work within the realities of the difficult Nazi culture. When the school was finally closed by its own leadership under pressure from the Nazi-led government, most of the faculty left the country to teach in less difficult circumstances and continued to spread Bauhaus precepts all over the world. Many of its artists and intellectuals fled to the United States. Because the Bauhaus approach was so innovative and invigorating, the institutions that were exposed to the Bauhaus methodology embraced its principles. This is why the Bauhaus had a major impact on art and architecture trends in Western Europe, the United States, and Canada.

Later evaluation of the Bauhaus design philosophy was critical of its bias against the organic markings of a human element, an acknowledgment of “... the dated, unattractive aspects of the Bauhaus as a projection of utopia marked by mechanistic views of human nature” (Schjeldahl, 2009, para. 6). And as Ernst Kállai proposed in the magazine *Die Weltbühne* in 1930, “Home hygiene without home atmosphere” (as cited in Bergdoll & Dickerman, 2009, p. 41).

The very machine-oriented and unadorned aesthetic of the Bauhaus refined and evolved, eventually informing the clean, idealistic, and rigorous design approach of the International Typographic Style.

1.5 Dada

Alex Hass

Dada does not mean anything. We read in the papers that the Negroes of the Kroo race call the tail of the sacred cow: dada. A cube, and a mother, in certain regions of Italy, are called: Dada. The word for a hobby-horse, a children's nurse, a double affirmative in Russian and Rumanian, is also: Dada. (Tzara, 1992)

– Tristan Tzara, *Dada Manifesto*

Dada was an artistic and literary movement that began in 1916 in Zurich, Switzerland. It arose as a reaction to World War I, and the nationalism and rationalism, which many thought had brought war about. Influenced by ideas and innovations from several early avant-gardes — Cubism, Futurism, Constructivism, and Expressionism — its influence in the arts was incredibly diverse, ranging from performance art to poetry, sculpture, and painting, to photography and photographic and painterly collage.

Dada's aesthetic, marked by its mockery of materialistic and nationalistic attitudes, became a powerful inspiration for artists and designers in many cities, including Berlin, Paris, and New York, all of which generated their own groups. The movement radically changed typographic ideals and created fresh approaches to text. Unburdened of its rules and conventions, type was allowed to become expressive and subjective. The poetic output of the group was fresh and different, and needed its typography to be as expressive and innovative as its content. Dada, in combination with aspects of Constructivist and Suprematist typography, balanced the cultural discipline created and applied to typography by other streams of contemporary design like the Bauhaus. This movement in particular advanced typography as a medium of its own. It promoted the use of typography as an art material that could be manipulated by artists and designers expressively and without preordained rules and structural principles.

Words emerge, shoulders of words, legs, arms, hands of words. Au, oi, uh. One shouldn't let too many words out. A line of poetry is a chance to get rid of all the filth that clings to this accursed language, as if put there by stockbrokers' hands, hands worn smooth by coins. I want the word where it ends and begins. Dada is the heart of words. (Ball, 1996)

– Hugo Ball's *manifesto*, read at Zunfthaus zur Waag on July 14, 1916

1.6 International Typographic Style

Alex Hass

International Typographic Style (ITS), also known as the Swiss Style, emerged in Switzerland and Germany in the 1950s. ITS became known for design that emphasized objective clarity through the use of compositional grids and sans serif typography as the primary design material (or element).

Guiding Principles

ITS was built on the shoulders of the ‘less is more’ ideal of the German Werkbund and the Bauhaus school. But its pioneers pursued ideologies that had much more depth and subtlety. Ernst Keller, whose work in design spanned over four decades, brought an approach to problem solving that was unique. His contribution to design was in defining the problem. For Keller, the solution to a design problem rested in its content. Content-driven design is now a standard practice. Max Bill, another pioneer, brought a purist approach to design that he had been developing since the 1930s. He was instrumental in forming Germany’s Ulm School of Design, famous for its ITS approach. The school introduced Greek rhetorical devices to amplify concept generation and produce greater conceptual work, while the study of semiotics (creating and understanding symbols and the study of sending and receiving visual messages) allowed its design students to understand the parameters of communication in a more scientific and studied way. At this time, there was also a greater interest in visual complexity. Max Huber, a designer known for his excellent manipulation of presses and inks, layered intense colours and composed chaotic compositions while maintaining harmony through the use of complex grids that structured and unified the elements. He was one of many designers who began using grids in strategic ways. ITS design is now known for its use of anchored elements within a mathematical grid. A grid is the “most legible and harmonious means for structuring information” (Meggs & Purvis, 2011, p. 355). Visual composition changed in many ways due to the grid. Design was already moving toward asymmetrical compositions, but now even the design of text blocks changed — from justified text to aligned flush left, ragged right. Fonts chosen for the text changed from serif fonts to sans serif, a type style believed to “express the spirit of a more progressive age” by early designers in the movement. Sans-serif typefaces like Helvetica, Univers, and Akzidenz Grotesk were favoured because they reflected the ideals of a progressive culture more than traditional serif fonts like Times or Garamond. ITS balanced the stabilizing visual qualities of cleanliness, readability, and objectivity with the dynamic use of negative space, asymmetrical composition, and full background photography.

Photography

ITS did not use illustrations and drawings because of their inherent subjectivity. Photography was preferred because of its objective qualities, and was heavily used to balance and organically complement the typography and its structured organizational grid. Often the photograph sat in the background with the type designed to sit within it; the two composed to strengthen each other to create a cohesive whole. ITS refined the presentation of information to allow the content to be understood clearly and cleanly,

without persuading influences of any kind. A strong focus on order and clarity was desirable as design was seen to be a “socially useful and important activity ... the designers define their roles not as artists but as objective conduits for spreading important information between components of society” (Meggs & Purvis, 2011, p. 355).

Josef Müller-Brockmann, another one of its pioneers, “sought an absolute and universal form of graphic expression through objective and impersonal presentation, communicating to the audience without the interference of the designer’s subjective feelings or propagandistic techniques of persuasion” (Schneider, 2011). Müller-Brockmann’s posters and design works feature large photographs as objective symbols meant to convey his ideas in particularly clear and powerful ways.

After World War II, international trade began to increase and relations between countries grew steadily stronger. Typography and design were crucial to helping these relationships progress — multiple languages had to be factored into a design. While clarity, objectivity, region-less glyphs, and symbols were essential to communication between international partners, ITS found its niche in this communicative climate and expanded beyond Switzerland, to America.

ITS is still very popular and commonly used for its clarity and functionality. However, there is a fine line between clean and simple, and simply boring. As the style became universal, its visual language became less innovative and was perceived to be too restrictive. Designers wanted the freedom to be expressive, and the culture itself was moving from cultural idealism to celebratory consumerism. ITS can be a very successful design strategy to adopt if there is a strong concept binding all of the design components together, or when there is a vast amount of complexity in the content and a visual hierarchy is needed to calm the design to make it accessible.

1.7 Late Modern | New York Style

Alex Hass

Late Modernism encompasses the period from the end of World War II to the early 21st century. Late Modernism describes a movement that arose from and reacted to trends in ITS and Modernism. The Late Modern period was dominated by American innovations spurred on by America's new-found wealth. The need for more advertising, marketing, and packaging was matched by a new mood in the culture — a mood that was exuberant and playful, not rigid and rule-oriented.

Late Modern was inspired by European avant-garde immigrants. These immigrants found work in design and quickly introduced Americans to early modern principles of an idealistic and theoretical nature. American design at this point had been pragmatic, intuitive, and organic in composition. The fusion of these two methodologies in a highly competitive and creative climate produced design work that was original in concept, witty, and provocative and, as personal expression was highly prized, full of a variety of visual styles. Paul Rand is one of the great innovators of this style. Rand was adept at using ITS when its rules and principles were called for, but he was also very influenced by European art movements of the times. In his work, he fused the two and made works that were accessible, simple, engaging, and witty. His work was inspirational, but his writing and teaching were as important, if not more, to redefining the practice of design. He restructured the design department at Yale and published books on design practice informed by ITS principles, softened by wit, and espoused the value of the organic look of handmade marks. As a result, artists and designers began to merge organic shapes with simple geometry.

The look of graphic design also changed through advancements in photography, typesetting, and printing techniques. Designers felt confident in exploring and experimenting with the new technologies as they were well supported by the expertise of the print industry. Designers began to cut up type and images and compose directly on mechanical boards, which were then photographed and manipulated on the press for colour experimentation. As well, illustration was once again prized. Conceptual typography also became a popular form of expression.

Push Pin Studios

An excellent example of this expansive style can be found in the design output of New York's Push Pin Studios. Formed by Milton Glaser and Seymour Chwast, Push Pin was a studio that created innovative typographic solutions — I♥NY— brand identities, political posters, books, and albums (such as Bob Dylan's album *Dylan*). It was adept at using and mixing illustration, photography, collage, and typography for unexpected and innovative visual results that were always fresh and interesting as well as for its excellent conceptual solutions. The influence of Push Pin and Late Modern is still alive and has recently experienced a resurgence. Many young designers have adopted this style because of its fresh colours, fine wit, and spontaneous compositions.

1.8 Post Modern

Alex Hass

By the early 1970s, the idealistic principles of Modernism were fading and felt flat and lifeless. Pluralism was again emerging as people craved variety as a reaction to the reductivist qualities that modernism espoused.

Punk

In the late 1970s in Britain, Australia, and parts of the United States, a youthful rebellious culture of anger and disdain arose against the establishment. In many ways, the design language of Punk echoed the Dadaist style, though Punk was anchored with a pointed, political message against the tyranny of society and the disenfranchisement of youth. A use of aggressive collages, colours, and experimental photography were its hallmarks. These free-form, spontaneous design works incorporated pithy tag lines and seethed with anger in a way that Dada work never attempted to achieve. Punk actively moved away from the conformities of design, and was anti-patriotic and anti-establishment. Punk established the do-it-yourself (DIY) ethos and stylized it with the angry anti-establishment mood of the mid 1970s, a time of political and social turbulence. DIY style was considered shocking and uncontrolled. However, the influence on design has been far reaching and subsequently widely emulated.

Jamie Reid, a pioneer of the Punk style, developed the visual signature look for the Sex Pistols and many other punk bands. His personal signature style was known for a collaged 'ransom note' typography that became a typographic style of its own. Reid cut letters out of newspapers and magazines, and collaged them together to be photographed. By doing this, he could see what he was creating as he went along, trying out different font styles and sizes and seeing the results instantly. Treating type as if it were a photograph also freed him from the restrictions of typesetting within a structured grid and allowed him to develop his ideas and concepts as he created. This unguided, process-free approach to design became a part of the Post Modern experimentation that was to come.

When Punk first exploded in the 1970s, it was deemed a youthful rebellion. In actuality, it was one of the many forms of visual expression that manifested as part of the Postmodernist movement that began as a reaction to the rigid restrictions of Modernism.

Early Post Modernism

Early Swiss Post Modern design was driven by the experimentations and teachings of Wolfgang Weingart who taught at the Basel School of design in Basel, Switzerland. Weingart was taught ITS by the masters of the style, Emil Ruder and Armin Hofmann at the Basel School. But once he became an instructor there, he questioned the "value of the absolute cleanliness and order" (Meggs & Purvis, 2011, p. 465) of the style. He experimented vigorously with breaking all typographic and organizational rules to see what the effect on the audience would be. He invigorated typography with energy and in turn

changed the viewer's response to the visual information. Instead of a simple fast reading, the reader now faced dynamic complexity free of any rules or hierarchies. The viewer was now compelled to spend more time with a design piece to understand its message and parse the meaning of its symbolism.

One of his American students, April Greiman, brought this new design language back to California with her and heavily influenced the youth culture there. David Carson, a self-taught designer working in the surf magazine world, took the ideas of the style and adopted them to his own typographic experiments in the surfing magazines he designed. For Carson, Post Modern design reflected the free spirit of the surf community.

Post Modernism is actually an umbrella term for many visual styles that came about after the 1980s. They are unified by their reaction to Modernism's guiding principles — particularly that of objectivity. A key feature of Post Modern design is the subjective bias and individual style of the designers that practise it. Additional defining stylistic characteristics can be summarized in the idea of 'deconstruction.' The style often incorporates many different typefaces breaking every traditional rule of hierarchy and composition. Visual organization becomes more varied and complicated with the use of layers and overlapping. The use of image appropriation and culture jamming is a key feature. Dramatic layouts that do not conform to traditional compositions are another common characteristic. A traditional grid is not used to organize the layout of the elements, making composition look 'free-style.' Other organizational systems for the elements developed — axial, dilatational, modular, and transitional systems created a fresh way to organize the information. The combination of multiple geometric shapes layered with photographs created depth that worked well on the computer monitor — now a component of contemporary society.

Post Modernism is still in use today, though selectively. The chaos created by our technological advancements needs to be balanced with the ease of accessing information. The Apple brand is a good example of a contemporary design approach that feels fresh and current, while delivering massive amounts of information in a clean and simple way. The Post Modern methods of built-in visual difficulty are less welcome in our data-saturated culture.

1.9 Summary

Alex Hass

The technological revolution of the 1990s brought the mobile phone and computer to every home and office and changed the structure of our current society much as manufacturing in the 1800s changed Britain and the Western world. As with the Industrial Revolution, the change in technology over the last 20 years has affected us environmentally, socially, and economically. Manufacturing has slowly been moved offshore and replaced with technology-based companies. Data has replaced material as the substance we must understand and use effectively and efficiently. The technological development sectors have also begun to dominate employment and wealth sectors and overtake manufacturing's dominance. These changes are ongoing and fast-paced. The design community has responded in many novel ways, but usually its response is anchored by a look and strategy that reduce ornament and overt style while focusing on clean lines and concise messaging. The role of design today is often as a way-finder to help people keep abreast of changes, and to provide instruction. Designers are once again relying on established, historic styles and methods like ITS to connect to audiences because the message is being delivered in a complex visual system. Once the technological shifts we are experiencing settle down, and design is no longer adapting to new forms of delivery, it will begin to develop original and unique design approaches that complement and speak to the new urban landscape.

Questions to consider after completing this chapter:

1. What design principles do Dada and Punk have in common?
2. What influence does ITS have on Post Modern design?
3. What influence does ITS have on current design practice?
4. How did World War II influence design education?
5. How did Morris and the Arts & Crafts movement help to create the Bauhaus design philosophy?
6. How did technology influence early German design?
7. How does technology influence contemporary design practice?

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Chapter 2. Design Process

2.1 Introduction

Alex Hass

Learning Objectives

- Explain the role of communication design in print and media
- Describe how the creative process relates to strategic problem solving
- Contrast how the creative process relates to the design process
- Define critical phases of the design process
- Discover how project research helps to define a communication problem
- Give examples of brainstorming techniques that generate multiple concepts based on a common message
- Learn about metaphors and other rhetorical devices to generate concepts
- Explore how concepts translate into messages within a visual form

Communication Design and The Design Process

The practice of graphic or communication design is founded on crafting visual communications between clients and their audience. The communication must carry a specific message to a specific audience on behalf of the client, and do so effectively — usually within the container of a concept that creates context and builds interest for the project in the viewer.

See an illustrated model of the design process here: [A Model of the Creative Process](#)

Overview of the Design Process

The process of developing effective design is complex. It begins with research and the definition of project goals. Defining goals allows you to home in on precisely what to communicate and who the audience is. You can then appropriately craft the message you are trying to communicate to them. Additional information regarding how to deliver your message and why it's necessary are also clarified in the research stage. Often the preferred medium becomes clear (i.e., web, social media, print, or advertising) as does the action you want your audience to take. Asking a millennial to donate to a cause is a good example. Research reveals that transparency of donation use, donor recognition, and ease of making the donation are vital to successfully engaging a millennial audience (Grossnickle, Feldmann, White, & Parkevich, 2010). Research also reveals that millennials resist negative advertising, so the

message must be crafted in positive terms that are anchored to a realistic environment (Tanyel, Stuart, & Griffin, 2013). Knowing this information before the concept development begins is vital to crafting a message that will generate the response your client needs. Critiquing and analysis allow you to evaluate the effectiveness of the design approach as it develops through the stages of an iterative process.

In order to design visual materials that communicate effectively, designers must understand and work with the syntax of visual language. Meaning is expressed not only through content but through form as well, and will include both intellectual and emotional messages in varying degrees.

Developing Concepts into Design Solutions

Designers are responsible for the development of the creative concepts that express the message. A **concept** is an idea that supports and reinforces communication of key messages by presenting them in interesting, unique, and memorable ways on both intellectual and emotional levels. A good concept provides a framework for design decisions at every stage of development and for every design piece in a brand or ad campaign. An early example of this is the witty and playful ‘think small’ Volkswagen Beetle (VW) advertising campaign of the 1960s. By amplifying the smallness of its car in a ‘big’ car culture, VW was able to create a unique niche in the car market and a strong bond between the VW bug and its audience (see Figure 2.1).



Figure 2.1 Volkswagen Beetle

When you implement solutions, you put concepts into a form that communicates effectively and appropriately. In communication design, form should follow and support function. This means that what you are saying determines how you say it and in turn how it is delivered to your audience. Design is an **iterative** process that builds the content and its details through critiquing the work as it develops. Critiquing regularly keeps the project on point creatively and compositionally. Critiquing and analysis allow you to evaluate the effectiveness of the whole design in relation to the concept and problem. The number of iterations depends on the skill of the designer in developing the content and composition as well as properly evaluating its components in critique. In addition, all of this must occur in the context of understanding the technologies of design and production.

As you begin to build and realize your concepts by developing the content, the elements, and the layouts, you must apply compositional and organizational principles that make sense for the content and support the core concept. Compositional principles are based on psychological principles that describe how human beings process visual information. Designers apply these principles in order to transmit meaning

effectively. For example, research has shown that some kinds of visual elements attract our attention more than others; a designer can apply this knowledge to emphasize certain parts of a layout and give a certain element or message importance. These principles apply to all forms of visual materials, digital media, and print.

When dealing with text, issues of legibility and readability are critical. Designers organize information through the use of formal structures and typographic conventions to make it easier for the viewer to absorb and understand content. The viewer may not consciously see the underlying structures, but will respond positively to the calm clarity good organization brings to the text.

Media Attributions

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2.2 Design Research and Concept Generation

Alex Hass

Defining Design Problem Parameters

Many designers define communication design as a problem-solving process. (The problem/opportunity is how to deliver information effectively to the desired audience.) The process that takes the designer from the initial stages of identifying a communication problem to the final stage of solving it covers a lot of ground, and different models can be used to describe it. Some are very complicated, and some are simple. The following sections break the design problem-solving process into four steps: (1) define, (2) research, (3) develop concepts, and (4) implement solutions.

2.3 Define

Alex Hass

Step 1: Define the Communication Problem

The inventor Charles Kettering is famously quoted as saying “a problem well-stated is half-solved.” Clearly the first step in any design activity is to define the communication problem properly. To do this, you will need to meet with clients to establish initial goals and objectives.

Here are some of the questions you should ask:

- What is the business of the client; what products or services does the client offer?
- What are the client’s long-term business goals? (What does the client want its business to have accomplished in 5 or 10 years?)
- What is the purpose of the project? What does the client hope to achieve with it? (The goals of a specific project are usually narrower than overall long-term business goals, but should fit within the larger picture.)
- What are the performance criteria that will be used to evaluate whether project goals are met?
- Who is the target audience?
- What is the client’s message to this audience?
- How does this project fit in with existing corporate materials?
- Does this piece require more than one format or medium?
- What corporate guidelines (if any) must be adhered to?
- Are illustration, photography, or any other special services required?
- Are there any special or unusual considerations around this project?
- What quantity is needed (for print)?
- What distribution method will be used (for print)?
- What is the budget?
- Who will approve the project? Will that person be available for sign-off when required?

Good planning at the beginning can make a project run smoothly and without surprises. Don’t assume anything; both the designer and the client should listen closely to each other and ask plenty of questions. Keep in regular communication, document discussions, and ensure that you have written confirmation of decisions.

2.4 Research

Alex Hass

Step 2: Conduct Research

Gather and analyze information What else do you need to know? The information you collected in the first stage is just a starting point — now you need to do more research in order to fine-tune your goals and process. Check every assumption, ask more questions, and add detail.

Research practices may involve:

- Competitor analysis: analyzing the competition to see what they do and determine their strengths and weaknesses
- **Ethnographic** research: observing user behaviour and culture
- Site research: observing and understanding the strengths and weaknesses of a space to optimize the effectiveness of the design experience you will be creating; site research is necessary to any design project that is situated in a built environment
- Marketing research: analyzing behaviour in terms of consumer practices, including demographic profiling (grouping people based on variables such as age/income/ethnicity/location to create profiles generally describing their thinking/behaviour)
- User testing: measuring the ability of the product or service to satisfy users' needs
- Co-creation: inviting end-users to **brainstorm** solutions with the design team before the concept phase of design begins

Incorporating Research into the Design Process

Research should be a part of all design process, but what kind of research is done, and who does it, will be determined by the scope and budget of the project. Some information may be publicly available, for example, through corporate publications or previously published marketing studies or market data, but a design company may need to partner with a research firm in order to do targeted in-depth research.

At the very least, design research should include:

- A literature review (gathering and reviewing all existing material that is relevant to your subject)
- Collected details (existing materials, corporate guidelines) of your client's business and the services the client offers
- Information on the **target audience** (What do they want? need? expect?)
- Analysis of competitors (Who are they? how are they different? how are they the same? how

do they advertise or make information available?)

- Estimates and technical advice from subcontractors (e.g., printers)

Some things to consider:

- Is a full design audit required? Much like a SWOT analysis, which assesses strengths, weaknesses, opportunities, and threats, a design audit applies the same stringent methodology to analyzing your competitors' visual presence in the marketplace.

A graphic design audit is a fantastic and relatively easy way to get a clear picture of how your competitors are perceived, what key messages they are communicating and how you look when placed alongside them. It's also a valuable exercise that informs you about the type of communication your customers are receiving on a regular basis from your key competitors. (Clare, 2006)

- What are the implications of the audience profile in relationship to the project goals?
- What is the most appropriate means to communicate with this audience (i.e., what media and marketing tools should you use)?
- How do the goals of this project fit into your client's long-term goals?
- Is your client's message what actually needs to be communicated in order to further the client's business goals?

Research takes time and can cost money, but in the larger picture will save time and money by helping to focus the direction of the design process. It also helps you provide justification for your proposed communication solutions to your client. Remember that all research must be carefully documented and raw sources saved and made available for future reference.

Now that you have gathered all the information, it's time to craft the design problem into a well-defined, succinct statement.

A Problem Well-stated is Half-solved

The writer Mark Levy, in his article [A Problem Well-stated is Half-solved](#), developed six steps you can take to state a design problem so its solutions become clearer:

1. State the problem in a sentence. A single sentence forces you to extract the main problem from a potentially complex situation. An example of a problem statement: "We need to increase revenue by 25%."
2. Make the problem statement into a question. Turning the problem statement into a question opens the mind to possibilities: "How do we increase revenue by 25%?"
3. Restate the question in five ways. If you spin the question from a variety of perspectives, you'll construct new questions that may provide intriguing answers.
For instance, try asking: "How could we increase revenue by 25% in a month?" "How could we increase it by 25% in an hour?" "How could we increase it by 25% in a minute?" "What could we stop doing that might cause a 25% revenue increase?" "What ways can we use our existing customer base to affect the increase?"
4. Give yourself thinking quotas. An arbitrary production quota gives you a better shot at coming up

with something usable, because it keeps you thinking longer and with greater concentration. When I asked you to “Restate the question five ways,” that was an example of an arbitrary quota. There’s nothing magical about five restatements. In fact, five is low. Ten, or even a hundred, would be far better.

5. Knock your questions. Whatever questions you’ve asked, assume they’re wrong-headed, or that you haven’t taken them far enough.
You might ask, “Why do we need an 25% increase at all? Why not a 5% increase? A 500% increase? A 5,000% increase? What other things in the business might need to change that would be as important as revenue?”
6. Decide upon your new problem-solving question. Based on the thinking you’ve already done, this step may not even be necessary. Often, when you look at your situation from enough angles, solutions pop up without much more effort.

However, if you still need to pick a single question that summarizes your problem, and none seems perfect, force yourself to choose one that’s at least serviceable. Going forward is better than standing still.

Now you can start brainstorming.

Concept Mapping

A good way to begin the process of research and problem definition is to write down everything that you already know about your subject. This brainstorming can be done in a linear way by developing lists, or in a non-linear way, popular with designers, called *concept mapping*. Concept mapping is a non-linear approach that allows a designer to see what is known and what still needs to be researched. Concept mapping is also used to generate concepts and to create associations and themes.

W5 + 1

The first step is to take a sheet of paper and write a central title or topic in the centre. Then surround this central idea with information gathered by answering the following questions, based on the 5 Ws (who, what, where, why, and when), plus one more, how:

- What are you trying to communicate? (the problem)
- Why must communication occur? (what is its purpose?)
- Who is the target audience?
- Where will communication take place? (in what medium and location?)
- When will communication take place?
- How will you implement the concept?
- What if? (what would be ideal?)

Once you’ve added all the information you have at hand, you will see any assumptions and gaps in that information, and you can begin specific directed research to create a larger, more objective picture.

Here is an example of a concept map (See Figure 2.2). To see a [concept map that details the scope of visual communication](#).

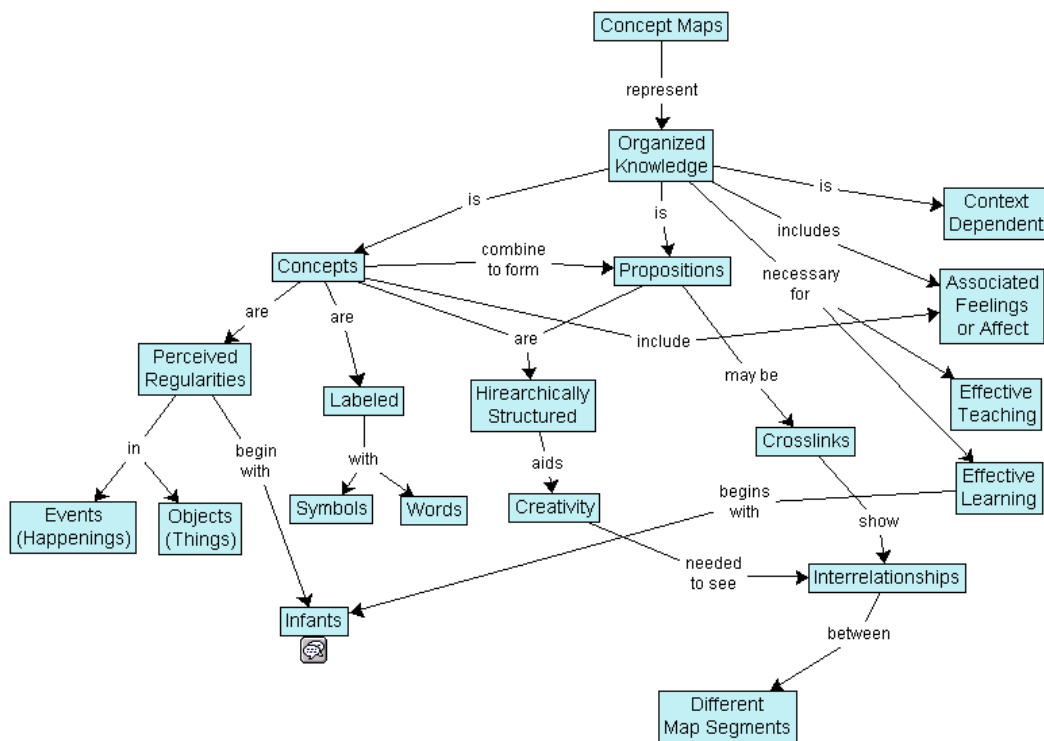


Figure 2.2 Example of a concept map

You can use the information in a concept map to generate other themes and concepts for your project. For example, in the concept map above, you could develop another theme by highlighting in yellow all information from the 1970s. This would reveal the parameters of design practice in the 70s and would additionally reveal what has been added and changed in design practice since.

Text Attributions

[A Problem Well-stated is Half-solved](#) by Mark Levy is used under a [CC BY-NC-ND 3.0 Licence](#).

2.5 Develop Concepts

Alex Hass

Step 3: Developing Concepts

Concept development is a process of developing ideas to solve specified design problems. The concepts are developed in phases, from formless idea to precise message in an appropriate form with supportive visuals and content. Once you have done your research and understand exactly what you want to achieve and why, you are ready to start working on the actual design. Ideally, you are trying to develop a concept that provides solutions for the design problem, communicates effectively on multiple levels, is unique (different and exciting), and stands out from the materials produced by your client's competitors.

Generate, test, and refine ideas

A good design process is a long process. Designers spend a great deal of time coming up with ideas; editing, revising, and refining them; and then evaluating their results every time they try something. Good design means assessing every concept for effectiveness.

The design process looks roughly like this:

- Generating a concept
- Refining ideas through visual exploration
- Preparing rough layouts detailing design direction(s)
- Setting preliminary specifications for typography and graphic elements such as photography, illustration, charts or graphs, icons, or symbols
- Presenting design brief and rough layouts for client consideration
- Refining design and comprehensive layouts, if required
- Getting client approval of layouts and text before the next phase

Developing Effective Concepts

A concept is not a message. A concept is an idea that contextualizes a message in interesting, unique, and memorable ways through both form and design content.

A good concept reinforces strategy and brand positioning. It helps to communicate the benefits of the offer and helps with differentiation from the competition. It must be appropriate for the audience, facilitating communication and motivating that audience to take action.

A good concept provides a foundation for making visual design decisions. For example, Nike's basic

message, expressed by its tagline, is “Just Do It.” The creative concept Nike has used since 1988 has been adapted visually in many ways, but always stays true to the core message by using images of individuals choosing to take action.

“It was a simple thing,” Wieden recalls in a 2009 Adweek video interview in which he discusses the effort’s genesis. Simplicity is really the secret of all “big ideas,” and by extension, great slogans. They must be concisely memorable, yet also suggest something more than their literal meanings. Rather than just putting product notions in people’s minds, they must be malleable and open to interpretation, allowing people of all kinds to adapt them as they see fit, and by doing so, establish a personal connection to the brand (Gianatasio, 2013).

A good concept is creative, but it also must be appropriate. The creativity that helps develop effective, appropriate concepts is what differentiates a designer from a production artist. Very few concepts are up to that standard — but that’s what you should always be aiming for.

In 1898, Elias St. Elmo Lewis came up with acronym AIDA for the stages you need to get consumers through in order for them to make a purchase. Modern marketing theory is now more sophisticated, but the acronym also works well to describe what a design needs to do in order to communicate and get people to act.

In order to communicate effectively and motivate your audience, you need to:

A — attract their attention. Your design must attract the attention of your audience. If it doesn’t, your message is not connecting and fulfilling its communication intent. Both the concept and the form must stand out.

I — hold their interest. Your design must hold the audience’s interest long enough so they can completely absorb the whole communication.

D — create a desire. Your design must make the audience want the product, service, or information.

A — motivate them to take action. Your design must compel the audience to do something related to the product, service, or information.

Your concept works if it makes your audience respond in the above ways.

Generating Ideas and Concepts from Concept Mapping

You can use the information in a concept map to generate additional concepts for your project by reorganizing it. The [concept tree method](#) below comes from the mind-mapping software blog (Frey, 2008)

1. Position your design problem as the central idea of your mind map.
2. Place circles containing your initial concepts for solving the problem around the central topic.
3. Brainstorm related but non-specific concepts, and add them as subtopics for these ideas. All related concepts are relevant. At this stage, every possible concept is valuable and should not be judged.

4. Generate related ideas for each concept you brainstormed in step 3 and add them as subtopics.
5. Repeat steps 3 and 4 until you run out of ideas.

Applying Rhetorical Devices to Concept Mapping

After you have placed all your ideas in the concept map, you can add additional layering to help you refine and explore them further. For example, you can use rhetorical devices to add context to the concepts and make them come alive. **Rhetoric** is the study of effective communication through the use and art of persuasion. Design uses many forms of rhetoric — particularly metaphor. If you applied a metaphor-based approach to each idea in your concept map, you would find many new ways to express your message.

Rhetorical Devices Appropriate for Communication Design

Allusion is an informal and brief reference to a well known person or cultural reference. In the magazine cover linked below, an allusion is used to underline the restrictive nature of the burqa, a full body cloak worn by some Muslim women, by applying it to Sarah Jessica Parker, an actor whose roles are primarily feminist in nature. (Harris, 2013)

Follow the link to see an example: [Marie Claire Cover](#)

Amplification involves the repetition of a concept through words or images, while adding detail to it. This is to emphasize what may not be obvious at first glance. Amplification allows you to expand on an idea to make sure the target audience realizes its importance. (Harris, 2013)

Follow the link to see an example: [Life's too short for the wrong job Marketing Campaign](#)

Analogy compares two similar things in order to explain an otherwise difficult or unfamiliar idea. Analogy draws connections between a new object or idea and an already familiar one. Although related to simile, which tends to employ a more artistic effect, analogy is more practical; explaining a thought process, a line of reasoning, or the abstract in concrete terms. Because of this, analogy may be more insightful. (Harris, 2013)

Follow the link to see an example: [WWF Lungs Before It's Too Late](#)

Hyperbole is counter to understatement. It is a deliberate exaggeration that is presented for emphasis. When used for visual communication, one must be careful to ensure that hyperbole is a clear exaggeration. If hyperbole is limited in its use, and only used occasionally for dramatic effect, then it can be quite attention grabbing.

Follow the link to see an example: [Final Major Project by Mark Studio](#)

A written example would be: *There are a thousand reasons why more research is needed on solar energy.*

Or it can make a single point very enthusiastically: *I said "rare," not "raw." I've seen cows hurt worse than this get up and walk.*

Hyperbole can be used to exaggerate one thing to show how it differs from something to which it is being compared: *This stuff is used motor oil compared to the coffee you make, my love.*

Hyperbole is the most overused rhetorical device in the world (and that is no hyperbole); we are a society of excess and exaggeration. Handle it like dynamite, and do not blow up everything you can find (Harris, 2013).

Metaphor compares two different things by relating to one in the same terms commonly used for the other. Unlike a simile or analogy, metaphor proposes that one thing is another thing, not just that they are similar (Harris, 2013).

Follow the link to see an example: [Ikea Bigger Storage Idea](#)

Metonymy is related to metaphor, where the thing chosen for the metaphorical image is closely related to (but not part of) that with which it is being compared. There is little to distinguish metonymy from synecdoche (as below). Some rhetoricians do not distinguish between the two (Harris, 2013).

Follow the link to see an example: [London Logo](#)

Oxymoron is a paradox presented in two words, in the form of an adjective and noun (“eloquent silence”), or adverb-adjective (“inertly strong”), and is used to impart emphasis, complexity, or wit (Harris, 2013). See Figure 2.3 for another example.

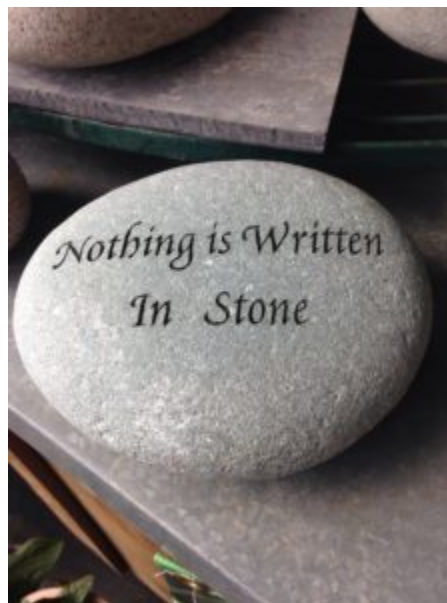


Figure 2.3 Example of an oxymoron

Personification attributes to an animal or inanimate object human characteristics such as form, character, feelings, behaviour, and so on. Ideas and abstractions can also be personified. For example, in the poster series linked below, homeless dogs are placed in environments typical of human homelessness (Harris, 2013).

Follow the link to see an example: [Manchester Dogs' Home Street Life](#)

Simile is a comparison of one thing to another, with the two being similar in at least one way. In formal

prose, a simile compares an unfamiliar thing to a familiar thing (an object, event, process, etc.) known to the reader. (Harris, 2013)

Follow the link to see an example: [Strong Handle Billboard](#)

Synecdoche is a type of metaphor in which part of something stands for the whole, or the whole stands for a part. It can encompass many forms such that any portion or quality of a thing is represented by the thing itself, or vice versa (Harris, 2013).

Follow the link to see an example: [A Global Warming Poster](#)

Understatement deliberately expresses a concept or idea with less importance as would be expected. This could be to effect irony, or simply to convey politeness or tact. If the audience is familiar with the facts already, understatement may be employed in order to encourage the readers to draw their own conclusions (Harris, 2013).

For example: *instead of endeavouring to describe in a few words the horrors and destruction of the 1906 earthquake in San Francisco, a writer might state: The 1906 San Francisco earthquake interrupted business somewhat in the downtown area.*

Follow the link to see an example: [Nike's Just Do It](#)

An excellent online resource for exploring different rhetorical devices is [“A Handbook of Rhetorical Devices”](#) (Harris, 2013). The definitions above have been paraphrased from this site.

Developmental Stages of Design

No design work should ever be done without going through an iterative development process in which you try out different ideas and visual approaches, compare and evaluate them, and select the best options to proceed with. This applies to both form and content.

The development of the concept starts with brainstorming as wide a range of ideas as possible, and refining them through a number of development stages until you are left with those that solve the communication problem most effectively.

The development of graphic forms starts with exploring a wide range of styles, colours, textures, imagery, and other graphic devices and refining them through development stages until you are left with those that best reinforce the concept and message.

The development process starts with **thumbnails** and works through rough layouts and comprehensives to the final solution. Thumbnails are small, simple hand-drawn sketches, with minimal information. These are intended for the designer's use and, like concept maps, are visuals created for comparison. These are not meant to be shown to clients.

Their uses include:

- Concept development and visualization of ideas
- Preliminary evaluation of content (they allow you to sift and sort ideas quickly and effectively)

- Preliminary evaluation of form (value studies, compositional studies, potential placement of elements)
- Note-taking (a tool to record verbal or visual information quickly and accurately)

Quantity is very important in thumbnails! The idea is to get as many ideas and options down as possible. Designers typically take one of two approaches when they do thumbnails: they either brainstorm a wide range of ideas without exploring any of them in depth, or they come up with one idea and create many variations of it. If you use only one of these approaches, force yourself to do both. Brainstorm as many ideas as possible, using a mix of words and images. The point here is the quantity of ideas — the more the better. Work fast and don't judge your work yet.

Once you have a lot of ideas, take one you think is good and start exploring it. Try expressing the same idea with different visuals, from different points of view, with different taglines and emotional tones. Make the image the focal point of one variation and the headline the focal point of another. The purpose here is to try as many variations of an idea as possible. The first way of expressing an idea is not necessarily the best way, much like the first pancake is not usually the best.

After you've fully explored one idea, choose another from your brainstorming session and explore it in the same way. Repeat this with every good idea.

Roughs are exactly that — rough renderings of thumbnails that explore the potential of forms, type, composition, and elements of your best concepts. Often a concept is explored through the development of three to five roughs. These are used to determine exactly how all of the elements will fit together, to provide enough information to make preliminary evaluation possible, and to suggest new directions and approaches.

The rough:

- Uses simple, clean lines and basic colour palettes.
- Accurately renders without much detail (the focus is on design elements, composition, and message)
- Includes all of the visual elements in proper relationship to each other and the page

Comps are created for presenting the final project to the client for evaluation and approval. The comp must provide enough information to make evaluation of your concept possible and to allow final evaluation and proofing of all content.

The comp:

- Is as close as possible to the final form and is usually digital
- May use final materials or preliminary/placeholder content if photographs or illustrations are not yet available

Hand-drawn or Digital?

Comps might be hand-drawn when you are showing a concept for something that doesn't yet exist, such

as a product that hasn't been fabricated, a structure that hasn't been built, or to show a photographer how you want material to be laid out in a photograph that has not yet been taken. Although you could create these comps digitally, it's often more cost effective to create a sketch.

Designers sometimes create hand-drawn comps in order to avoid presenting conceptual work that looks too finished to a client, so they will not be locked into a particular approach by the client's expectations.

Even in this digital age, you should draw all thumbnails by hand (using pen, pencil, or tablet) for the following reasons:

- You don't have to make time-wasting decisions that you shouldn't be making at this early stage (e.g., what typeface should I use? what colour should this be?)
- It's much faster than doing it digitally.
- Work done on a computer tends to look finished and professional, and this can trick you into thinking an idea is better than it is.
- The technology of a tool tends to define the way it is used. If you are using a computer, you will tend to come up with solutions that can be executed only on a computer, and that limits your creative options. For example, would you think of creating an illustration from coloured paper if you were using the computer?
- Hand-drawn sketches provide a paper trail that shows your concept development process and can be presented in case studies to reveal your entire design process in a more personal and engaging way.

Media Attributions

- [nothing-is-written-in-stone-527756_1920](#) © SBM is licensed under a [Public Domain](#) license

2.6 Implement Solutions

Alex Hass

Step 4: Solution Implementation

In this step, we are ready to select the final concept options and carry their application through to completion in producing the final design(s). This part of the process requires that you know how to work with photographers and illustrators, as well as with people in production technologies — primarily, programmers and printers. You may also require project management skills. You should also put a process in place so your final solutions can be evaluated for their effectiveness. Did they work? Did they achieve their goals?

There are many components that require attention during the production phase:

Production and Implementation

- Copy placement and preparation of layouts from approved text
- Liaison with suppliers and subcontractors
- Completion of photography, illustration, charts/graphs, icons/symbols
- Ongoing client liaison for proofreading and corrections
- Scanning and electronic preparation of images (black and white, duotones/tritones, colour); may include colour correction and/or digital manipulation
- Preparation of electronic files in line with press/prepress/web requirements
- Supervision of all prepress materials (final files and proofs)
- Organization, maintenance, and archiving of all digital materials related to the job

Production Supervision

- Discuss production options with client, solicit quotes, and select printer/programmer
- When contract is awarded, liaise with production services to discuss and refine project details
- Prepare or review production specifications
- Liaise with client and production to check proofs
- Oversee production to ensure quality control
- Follow up after production work is complete

Evaluation

Every step of a project should be evaluated in terms of the goals you have defined. Two fundamental questions about every design decision you make are:

- What does this accomplish?
- How does what is accomplished help to meet the project goals?

After the original design challenge has been defined, evaluate every stage of the process in that context. It's surprisingly easy to stray off track when you're designing. If you find yourself designing something brilliant, but it doesn't communicate what it should to the right audience, then all that brilliance is wasted.

Communication

Whether they are in print or multimedia, all design works are intended to communicate to a specific audience, and the design must support that function. All concepts must be evaluated with that end in mind. For example:

- Does the work communicate the key message(s) and support the client's goals?
- Does the work effectively integrate images, design, and text (form and content) to support that communication; create an overall 'look'; make the piece work as a unified whole with no distractions?
- Is the piece physically easy to read and/or understand?
- Do the design choices amplify material (subject matter, mood) in the text?
- Is the piece appropriate to the audience? (children, youth, adults, seniors have particular interests and needs)

Economic Efficiency

- What is possible and most effective within the budget?
- Will this method attract the desired audience/buyer?

Design and Materials

- Are the design choices compatible with technological requirements for production?
- For print materials, is there efficient and economical use of paper?
- Will the materials chosen support the intended use and method of distribution?

2.7 Summary

Alex Hass

Communication design can be described as a problem-solving process that can be broken into four steps: (1) define, (2) research, (3) develop concepts, and (4) implement solutions. Research should be a part of all design process determined by the scope and budget of the project. Concept mapping is a non-linear approach that outlines what is known, what is needs, creates associations and themes, and helps generate ideas. Good design takes time that involves generating and assessing concepts. Time is also spent editing, revising, refining , and evaluating ideas.

In conclusion, defining the design process is complicated as it has many stages and involves many steps at each stage. Complicating it further is the reality that every project is unique in its parameters, goals, time period, and participants. This chapter is meant to facilitate the beginning of how you define your individual design process by basing it on general guidelines. If you are still developing an understanding of your personal design strengths and weaknesses, allow extra time for each stage and track your time for each stage. You'll soon discover if you fall into the category of a brainstorming, conceptual, or project development type. Conceptual designers find it easy to develop multiple concepts, but less easy to take the steps to develop them to their full potential. Project development types are the opposite — finding concepts hard to create, but developing projects quite easy. Allow extra time to discover which category you fall into and also to develop strengths in your weaker area. As you gain experience developing design projects, you will start to personalize your design process and be able to estimate how long it takes with a fair degree of accuracy. This will help you to estimate project design costs more accurately and gauge the steps needed to bring a project to a successful conclusion.

Questions to consider after completing this chapter:

1. How does communication design work within the constraints of print and media?
2. How does the creative process relate to strategic problem solving?
3. How is the creative process related to the design process?
4. What are the critical phases of the design process?
5. How does project research help to define a communication problem?
6. What are some examples of brainstorming techniques that generate multiple concepts based on a common message?
7. How does using a metaphoric device generate concepts?
8. How do concepts translate into messages within a visual form?

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Chapter 3. Design Elements, Design Principles, and Compositional Organization

3.1 Introduction

Alex Hass

Learning Objectives

- Utilize basic design principles relating to visual composition
- Define design terminology pertaining to form
- Describe organizational systems and core principles for layout grids
- Differentiate between typographic categories
- Establish a visual hierarchy within a layout
- Express ideas using the principles of composition and form

Communication design is essentially the crafting of a message meant for a specific section of the public. This written message is infused with meaningful and relevant visual components. The composition of these components should amplify, clarify, and enhance the message for the viewer. To assist in making sound design choices, a designer applies principles of composition and principles of organization to the design elements selected for a project.

Understanding how to utilize the fundamentals of design elements, principles, and composition is necessary to be able to confidently move through the stages of the design development process and build a project from the initial design brief to the final published design work.

Definitions from various design sources about what comprises a design element are consistent for the most part, but defining design principles is not as consistent and varies from one text to the next. Marvin Bartel's (2012) definitions of these categories are both simple and on point. He defines a visual element as any "basic thing that can be seen," and a design principle as a method for "arranging things better." Also included in this chapter are organizational systems that can focus and direct the overall direction a composition will take.

3.2 Visual Elements – Basic Things That Can be Seen

Alex Hass

Point, line, and plane are the building blocks of design. From these elements, designers create images, icons, textures, patterns, diagrams, animations, and typographic systems. (Lupton & Phillips, 2014, p. 13)

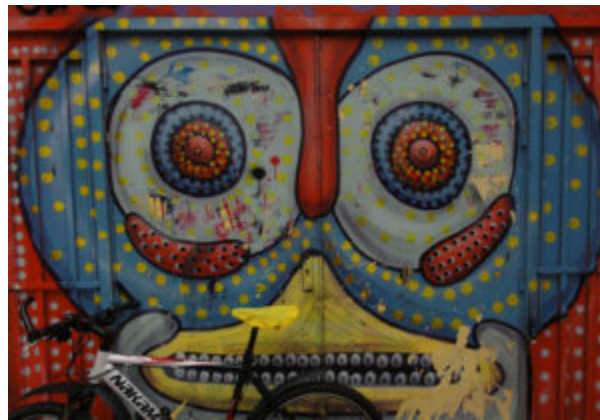


Figure 3.1 Design using points, lines, planes

Point

A point is a precise position or location on a surface. In purely mathematical terms, a point marks a set of coordinates — it has no mass at all. In this objective definition, a point is essentially a place. Visually, a point is a dot and therefore the basic building block of every variation of line, texture, and plane.

Subjectively, the term *point* has a lot of power. *Point* can direct attention, be the focus of attention, create emphasis, and cut through veiled information. The compositional term *focal point* brings the objective and subjective together by being the first place the eye is drawn to in a composition and usually contains the most important piece of visual communication.

Line



Figure 3.2 Lines (by Ken Jeffery)

A line is the second most basic element of design — a line is a collection of points arranged in a linear manner (see Figure 3.2). A line connects two points, or traces the path of a movement. A line can be actual or implied — for instance, as a composition of two or more objects in a row. Lines in nature act as defining planes — examples are a horizon or the silhouette of a forest against the sky. Long straight lines do not often occur in nature, and therefore when they are present, they tend to dominate the landscape visually. Natural settings are usually parsed by the eye into shorter sequences of curved or straight lines and organic shapes.

When made by the hand, a line is created by the stroke of a pencil, pen, brush, or any mark-making tool. These lines can be thin or wide, and are expressive and distinct, reflecting the texture of the tool used to make them. Lines can create a plane (a shape) by being clustered together or by defining a shape. If the line is thickened, it changes and becomes a plane. When lines are made digitally, they can acquire many of the same qualities possessed by hand-drawn lines through the application of effects.

Plane



Figure 3.3 Planes

Like lines, planes (shapes) can be organically made or they can be geometric, as in the example shown in Figure 3.3. A plane is a flat surface that has defined borders. “A line closes to become a shape, a bounded plane” (Lupton & Phillips, 2014, p. 38). Planes are excellent compositional tools for clustering visual elements into visual fields. A plane can also act as a separating device and allow the viewer to see that one section of information is not linked to another.

In design software, a vector graphic is a shape created by defining its parameters with a line, and then filling it with a solid or textured fill. Grids help to create and define typographic planes that float or interact with solid planes of image, texture, or colour. In the physical world, everything is composed of shapes that are either two- or three-dimensional. How you choose to organize and arrange the planes in your photograph, your illustration, or your design will structure the composition and determine not only how the elements intersect with one another but also how the viewer interacts with the composition.

Colour

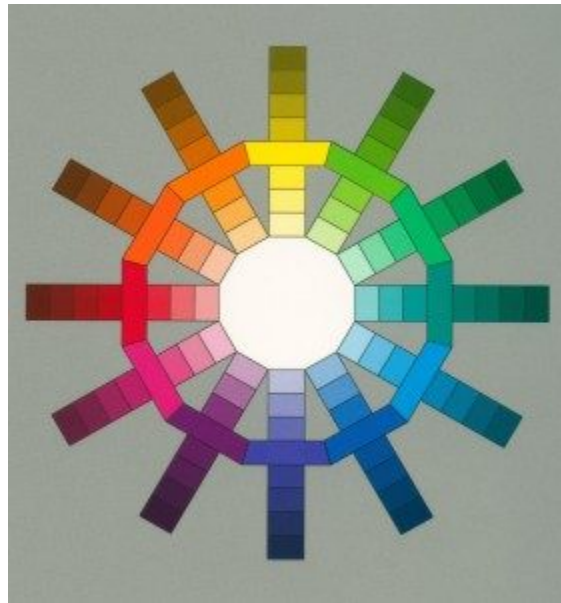


Figure 3.4 Colours

Graphic design has evolved over the last two centuries from a craft that designed text and images primarily in black and white for books and broadsheets, to a craft that works with full colour in analog and digital media and on every kind of substrate. Controlling and effectively using colour to support communication is now more important than it has ever been. Both media and advertising have become very sophisticated over the last few decades and are adept at creating exciting, sensuous, and energetic environments that are crafted with the skillful use of colour and texture. The public, in turn, has absorbed these unprecedented levels of image saturation with a variety of outcomes. One is an expectation that the visual palette match and enhance the message. A second outcome is a high expectation for strong and authentic visuals of places or objects. A third outcome is a cultural nostalgia for earlier looks created by various devices. Examples like 8-bit graphics or 1950s Kodachrome both possess unique colour and texture palettes and have properties the public can discern. When one of these nostalgic colour palettes is applied to an image, it adds another layer of meaning to the work, and that meaning has to make sense for the viewer.

The explosion of tools for making and sharing digital photography and graphics also reveals how good the general public has become at crafting visuals with relevant atmosphere and texture. The bar has been raised very high with colour use in contemporary times, and understanding colour basics is an absolute necessity.

RBG and CMYK Colour Spaces

Given that design and colour are united in every project, it is important to realize that there are two colour systems, and often a project needs to work in both. Digital media works in the additive colour system, and its primary colours are red, green, and blue (RGB). In this system, the absence of colour equals black, while combining all colours results in white. RGB is the colour system of visible light (see

Figure 3.5). This light system is called *additive* because the three primaries together create all the hues in the spectrum.

Subtractive colour is the system needed for print media, and its primary colours are cyan, magenta, yellow, and black (CMYK), as shown in Figure 3.5. In CMYK, the absence of colour equals white, while combining all colours creates black. Both of these systems have many overlapping colours but their colour spheres are not exactly the same. Understanding where the overlaps exist and where they don't correspond is vital to the success of a project. If your print materials cannot be replicated on screen, you will have a major design problem that will have to be corrected. Always choose colours that will work in both systems.

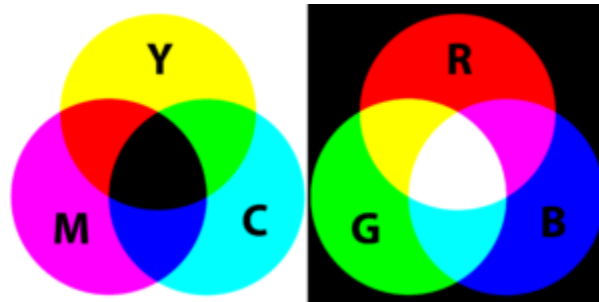


Figure 3.5 Primary colours for the additive and subtractive colour schemes

Environment is another aspect of colour choice that is very important. Both the natural world and the world within the screen vary from moment to moment and screen to screen. Colours are affected and influenced by the amount of atmospheric light available to them as well as by the colours in contact with the object they are viewing. Texture also changes our perception of a colour as does the brightness or darkness around it.

However much a designer hopes to define the parameters of a colour palette, there will always be unknown factors influencing the palette on the viewers' end. Create a palette that is focused enough to create the right atmosphere and energy level for your project, but one that doesn't rely too heavily on a specific colour. Careful, considered colour use will help define a message and create a mood that supports the composition and concept of a design work. Always create a palette that will work with both colour systems and also be robust enough to work in less than optimal environmental circumstances.

Negative Space

Negative space, which is also called *white space*, is the visually quiet area that surrounds the active area of a composition (see Figure 3.6). It is also referred to as figure/ground, and has a very important role in composition as it shapes the visual perception of the subject. Without negative space, there is no positive space — the effect is similar to seeing a polar bear in a snowstorm. Negative space is often thought of as as passive and unimportant, but the active elements or 'figure' are always perceived in relation to their surroundings by the mind of the viewer. The composition of the negative space frames and presents the active elements in a flat or dynamic way. If the surrounding area is busy with many other elements, the focal point loses its power because the elements all have a similar visual value. The works of Gustav Klimt exhibit this quality.



Figure 3.6 Example of negative or white space

If, on the other hand, the work is balanced and the negative space is active, it brings energy to the form and its space. The focal point or figure increases its visual power because there is contrast for the eye. Another way to look at this is to see that the range or gamut of visual activity is increased and therefore the experience is more satisfying to the eye.

When designers play with reducing or confusing positive and negative space, they create ambiguity. Ambiguity creates tension, which increases the interest of a composition to the viewer and also increases the visual energy of a design. There are three types of figure/ground relationships.

Stable figure/ground is the most common type. The positive element is clearly separate and defined against its negative space. A good example of this is text blocks in magazines or books.

Reversible figure/ground is the second type and is found in most of the work of M.C. Escher. Both the positive and negative space delivers ‘active’ information that feels equal to the eye and therefore creates a toggling effect in the viewer. One shape is comprehended while the other acts as its negative space, then the opposite happens and the negative space becomes meaningful and its opposite becomes the neutral ‘holding’ space.

Ambiguous figure/ground creates a confusing lack of focal point. The eye searches for a dominant visual ‘starting point’ in the composition but can’t find one. Often this creates energy, and if the effect is compelling, it invites the viewer to stay with the work for a long period of time, absorbing all of the visual information.



Figure 3.7 FedEx express truck

Designers often utilize figure/ground in the crafting of symbols, wordmarks, and logos because of its capacity to create meaning with the space surrounding a mark. An excellent example of figure/ground is the FedEx wordmark (see Figure 3.7). The negative space needed to define the letterforms also augments their meaning by creating a forward pointing arrow. In print design, negative space can also allude to what is outside the frame and makes the field of the page or poster larger than it physically is. On a static or moving screen, negative space has the ability to change the flow of time, to introduce a break, or to create space around an important point.

Composing strong figure/ground tension is an excellent skill to acquire for designers of any media. Crafting white space eventually becomes as important to a designer as selecting the words and the elements of a project. Composing the negative spaces of a composition will allow you to vary visual emphasis of the elements, and control and increase the visual energy overall.

Texture



Figure 3.8 Example of texture

Texture is a visual and a tactile quality that designers work with (see Figure 3.8). Texture is used both in composition and also on the printed substrate or media space. Designers create textures for their projects with anything at hand. A texture can be made with typography, generated in raster or vector software like Photoshop or Adobe Illustrator, or by using a camera and capturing elements in the material world.

Using texture thoughtfully will enhance a visual experience and amplify the context for the content. Often adding texture adds visual complexity and a bit of visceral depth to a two-dimensional design.

project. It can also tie one piece of design to another, or become a defining element of a brand or a series of communications.

The tactile aspect of a design work comes into play with the choices we make for the substrate we print on. The surface can be smooth or rough, glossy or matte, thick or thin, translucent or opaque, paper, plastic, concrete, metal, wood, or cloth. Paper can even have two or more of these qualities if we augment the original look of the paper with layers of varnish that reverse the tactile effect of the substrate. Often the choice of substrate is most effective if it is sympathetic to or contrasts with the concept and content of the piece. The choice of substrate texture affects how the viewer perceives the content — both physically and optically. Glossy substrates often feel sophisticated, hard, and cold. They are imbued with a sense of precision because the ink sits on top of the surface of the paper and retains almost all of its original integrity. A textured matte paper feels organic, accessible, and warm because the ink is partially absorbed by the paper, and is therefore influenced by and fused to its softer characteristics.

Pattern is part of the element of texture, but because of its special ability to hold content that is meaningful, and its long and significant cultural history, it deserves a special mention. All patterns can be reduced to dot and line and are organized by a grid system of some kind. Their ‘flavour’ is a reflection of the culture and time they come from and of the materials that created them. Patterns can be a subtle addition to the content of any design work. A pattern can be created using a relevant graphic (like a logo) or repeated multiple times, or it can support the organizational principles developed by the designer in a decorative way; for example, if a grid is based on the square and the texture of the pattern is also based on the square.

When the pattern is seen as a whole, its individual components melt away and lose their identity to the larger field of the pattern. This ability to focus on a pattern in multiple ways creates a second purpose for the graphic element (such as a circle, a square, a logo, or symbol) the designer has used. In modern design practice, pattern is an opportunity to augment the clean and simple material surfaces we work with and ornament a page or a website with a relevant texture.

Typography



Figure 3.9 Typography

Typography is the medium of designers and the most important element we work with (see Figure 3.9).

Typography not only carries a message but also imbues a message with visual meaning based on the character of a font, its style, and its composition. Words are meaningful in and of themselves, but the style and composition of words tells a reader you are serious, playful, exciting, or calm. Typography is the tonal equivalent of a voice and can be as personal or as general in flavour.

Typography traditionally has two functions in most design projects. One function is to call attention to or to ‘display’ the intent of a communication. This function is called titling or display typography and it is meant to call attention to itself. The second function is to present the in-depth details of a communication within a text block. This function requires a different typographic approach — one that is quiet and does not call attention to itself. Instead, it is intended to make the content accessible and easy to read.

Font Categories

There are many ways to categorize and subcategorize type. This overview discusses the seven major historical categories that build on one another. Serif fonts comprise four of these categories: humanist, old style, transitional, and modern. Italics, first designed in the 1500s, have evolved to become part of a font ‘family’ and were at one time a separate category. They were initially designed as independent fonts to be used in small pocket books where space was limited. They were not embraced as text fonts, but were considered valuable for adding emphasis within a roman text and so became part of the set of options and extensions a font possessed. The trajectory of use is the opposite for the sans serif category. Sans serif fonts have historically been used for display only, but in the 20th century, they became associated with the modern aesthetic of clean and simple presentation and have now become very popular for text-block design. Egyptian or slab serif fonts can be used as either display or text depending on the characteristic of the font design.

Blackletter

Schriftbeispiel Frühling
Schriftbeispiel Maximilian
 Schriftbeispiel Deutsche Zierschrift
Schriftbeispiel Deutsche Anzeigerschrift
 Schriftbeispiel Wilhelm-Klingspor-Schrift
Schriftbeispiel Wallau
 Schriftbeispiel Claudius

Figure 3.10 Example of Blackletter type

Blackletter was the medieval model for the first movable types (see Figure 3.10). It is also known as

Block, Gothic, Fraktur, or Old English. The look of this font category is heavy and dark. The letterforms are often condensed and put together tightly in a text block creating a dark colour (tone) for a page — between 70% and 80% grey. To put the tone in context, the usual tone of a modern text page is between 55% and 70% grey. The look of the letterforms makes it hard to read the page, because legibility was not their first function as it is today. The beauty of the font and the form of the book was the primary goal for early publications. Books were considered to be objects of wealth and beauty, not solely as a means to convey information.

Humanist

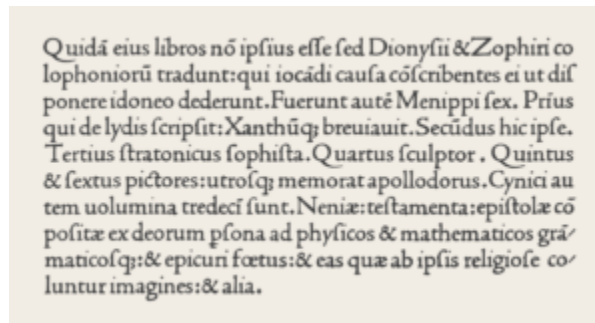


Figure 3.11 Example of Humanist type

Humanist fonts are also referred to as Venetian, because they were developed in and around Venice in the mid-15th century (see Figure 3.11). Their design was modelled on the lighter, open serif letterforms and calligraphy of the Italian humanist writers. The designers strove to replicate many of the characteristics found in this writing style, including multiple variations of a glyph (letterform) that a written document possessed. For instance, a font could have up to 10 different lowercase a's to set a page with. Humanist types were the first roman types. Though they were much easier to read and lighter on the page than blackletter, they still created a visually dark and heavy text block in contrast to the fonts we have become accustomed to. Humanist fonts have little contrast between the thick and thin strokes — the strokes are usually heavy overall. The x-height of a humanist font is small compared to contemporary fonts, and this impedes quick comprehension and legibility. Humanist fonts are not often used for these reasons, though they are well respected because they are the original model so many other fonts are based on. It is important to remember that these fonts were a perfect match to the earliest printing technologies and that those presses could not have printed our light and delicate fonts. Fonts have evolved alongside the technological advancements of the printing industry.

Examples of humanist fonts include Jenson, Centaur, Verona, Lutetia, Jersey, and Lynton.

Old Style



Figure 3.12 Example of Old Style type

Old style fonts, also known as Garalde fonts, are the next leap in font design, and their stylistic developments were driven by the technological advancement of presses and the improved skills of punchcutters (see Figure 3.12). Font designers began to explore the possibilities of their medium — both the metal of the punches and the abilities of the presses and their papers. The letterforms became more precise, their serifs more distinct. The contrast of the stroke weights was also increased, and the presses held true to the design and didn't distort them. The aim of these new fonts ceased to be about replicating the look of handwriting and more about refining the letterforms to create a lighter overall tone.

Examples of old style fonts include Goudy Old Style, Granjon, Janson, Palatino, Perpetua, Plantin, and Sabon.

Transitional



Figure 3.13 Example of Transitional type

A few centuries later, font design was again refined, and this time the impetus came from France and the Enlightenment movement. Fonts were created along the rationalist principles of the times. The strokes were contrasted further with very thick main strokes and very thin sub-strokes, and the serif, which capped the stroke, did not use bracketing (the rounding underneath the intersection of the two strokes). The letterforms took on a look that implied they were constructed mathematically and anchored within a grid. These new fonts broke with humanist and old style tradition and ceased to reference calligraphy.

Examples of transitional fonts include Baskerville, Bookman, Fournier, and Joanna (see Figure 3.13).

Modern



Figure 3.14 Example of Modern type

Modern fonts are also known as Didones and take the contrast started by the transitional fonts much, much further (see Figure 3.14). Bodoni is an excellent example font as nearly everyone can bring to mind the extreme contrast of its thick and thin strokes. The Frenchman Didot and the Italian Bodoni were the first to bring this design style to the public. Its major attributes align with the Romantic period's aesthetics.

Romantic letters can be extraordinarily beautiful, but they lack the flowing and steady rhythm of the Renaissance forms. It is that rhythm which invites the reader to enter the text and read. The statuesque forms of Romantic letters invite the reader to stand outside and look at the letters instead. (Bringhurst, 2004, p. 130)

The major characteristics of modern fonts are extreme contrast between thick and thin strokes, clean, unbracketed, hairline serifs, and a completely vertical axis. These fonts have an almost mechanical look because of their precise, sharp, and clean appearance. They also possess an elegance that compliments the time period they emerged in. Modern fonts are often used as display fonts and can sometimes be used for text, though very carefully.

Examples of modern fonts include Fenice, Zapf Book, New Caledonia, Bodoni, and Didot.

Egyptian



Figure 3.15 Example of Egyptian type

Egyptian is also known as slab serif, square serif, or mechanical (see Figure 3.15). This category of font was created in England in the 1880s — a design expression of the industrial revolution. The category was named Egyptian because of the popularity of all things Egyptian after Napoleon’s return from a three-year Egyptian expedition. The name of the style has nothing to do with any element of Egyptian culture. The style was created initially for display copy, but over the centuries, fonts like Clarendon have become popular for setting text blocks because they contain the quality of objectivity and yet still feel traditional.

Examples of Egyptian fonts include Officina Sans and Officina Serif, Clarendon, and every typewriter font.

Sans Serif



Figure 3.16 Example of Sans Serif

Sans serif fonts have existed since ancient times, but it was only in the late 19th century that font designers began to consider removing serifs and letting the letterforms stand on their own (see Figure 3.16). These fonts were initially considered appropriate only for titling and display purposes, and only became text fonts in the hands of the 20th-century modernists. The first sans serif forms were created on the early humanist and old style calligraphic forms, but eventually the forms were influenced by objective modernist principles and geometry.

Examples of sans serif fonts include Univers, Helvetica, and Akzidenz-Grotesk.

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3.3 Compositional Principles – Strategies for Arranging Things Better

Alex Hass

We have many words for the frustration we feel when an interface isn't directing us to what we need to know. Loud, messy, cluttered, busy. These words. . . express our feeling of being overwhelmed visually by content on a screen or page. We need them to express how unpleasant a user experience it is to not know where to direct our attention next. (Porter, 2010, para 1)

If everything is equal, nothing stands out. (Bradley, 2011)

The proper composition of visual elements generates not only visual stability, it enhances mood through composition and generates order that prevents visual chaos. Designers use compositional rules in their work to make the reader enter their work and experience a design environment that is calm yet exciting, quiet yet interesting. A magazine designer, for example, creates a grid and applies an order to the typographic elements creating a comprehensible hierarchy. This design system is interpreted in different ways, in pages and spreads, issue after issue. If the organizational system is versatile and planned with thought and depth, it can be used to produce unique and exciting layouts that remain true to the rules determined for the overall system initially designed. Organizational principles create a framework for design without determining the end results.

Compositional rules can be used to generate content as well as organize it. The Bauhaus artist and designer Laszlo Moholy-Nagy created a series of paintings by calling in a set of instructions to a sign painter using the telephone. Here is his account of the experience, written in 1944:

In 1922 I ordered by telephone from a sign factory five paintings in porcelain enamel. I had the factory's color chart before me and I sketched my paintings on graph paper. At the other end of the telephone, the factory supervisor had the same kind of paper divided in to squares. He took down the dictated shapes in the correct position. (It was like playing chess by correspondence). (Moholy-Nagy, 1947, p. 79)

Designing visual elements into a strong composition is a complex endeavour on its own, but increasingly designers are being asked to create vast compositional systems that other people will implement. Much like Laszlo Moholy-Nagy, designers need to be able to make strong compositional systems and also convey how their systems work, how to apply their rules, and how to apply them so they retain a relevant freshness.

Alignment



Figure 3.17 Alignment

Alignment refers to lining up the top, bottom, sides, or middle of a text, composition, or grouping of graphic elements on a page. Often a design composition includes a grid where the alignment of text blocks is dictated by the design of the columns of the grid (see Figure 3.17).

Typographically, horizontal alignment includes flush left (also called left justified or ragged right), flush right (also called right justified or ragged left), centred, and fully justified. Vertical alignment in typography is usually linked to baseline alignment. A baseline grid exists in digital software that is meant for layout of type and is the invisible line where font characters sit.

Contrast

Contrast is a visual device that increases the special character of both elements that have been paired. Contrast assists composition by creating focal points, and adds energy and visual range to a composition. Using contrast enables us to distinguish the qualities of one object by comparing differences with another. Some ways of creating contrast among elements in the design include the use of contrasting colours, sizes, and shapes. Johannes Itten, a design instructor and artist at the Bauhaus focused his research on the concept of contrast in both composition and colour. Itten's list of contrasts can be applied to both the composition and the atmosphere of a design work. His list includes these pairings: large/small, hard/soft, thick/thin, light/heavy, straight/curved, continuous/intermittent, much/little, sweet/sour, pointed/blunt, light/dark, loud/soft, black/white, strong/weak, diagonal/circular. No design makes use of only one kind of contrast, but usually one dominates the others.

Colour Contrast

Johannes Itten also worked with contrast in his seminal theory of colour and determined that there are seven kinds of contrast.

1. *Contrast of hue* occurs when a hue or colour is separated by being outlined in black or white lines. White lines weaken the 'strength' and appearance of the colour and the colours around the white lines seem darker. In contrast, a black line around a colour strengthens the appearance of the colour, while the colours around the black lines appear to be lighter.
2. *Light-dark contrast* is the contrast between light values and dark values.
3. *Cold-warm contrast* refers to the contrast between cool and warm colours. Warm colours are the red, orange, and yellow colours of the colour wheel, while cool colours are blue, green, and purple.
4. *Complementary contrast* is the contrast between colours directly opposite each other on the colour wheel.
5. *Simultaneous contrast* occurs between two colours that are almost complementary. One colour is one section to the left or right of the complementary colour of the other.
6. *Contrast of saturation* refers to the contrast between intense colours and tertiary or muted colors. Muted colours appear duller when placed next to intense colours, and intense colours appear more vivid when next to a muted colour.

7. *Contrast of extension* refers to the contrast between the area of one colour and another. Different areas of one colour are needed to balance another.

For text, contrast is achieved by using varied colours, serif and sans serif, type styles that are not often paired, or type in place of an image. As contrast in elements diminishes, the elements begin to feel similar, and the level of visual interest decreases.

Emphasis

A focal point in a composition draws the eye to it before the eye engages with the rest of the visual information. This is called *emphasis* and is achieved by making a specific element gain the attention of the eye. Emphasis is created in graphic design by making only one focal point and clearly emphasizing it by placing the elements on the page in positions where the eye is naturally drawn to the proper entry into the work. Designers rely on additional compositional principles to support the hierarchy of a composition such as contrast, repetition, or movement.

Designers use emphasis to assist viewers in identifying the relative importance of each element in a composition. Emphasis is strongly linked to visual hierarchy. Both emphasis and visual hierarchy create order for the viewer, allowing the eye to see the first element of importance, then the second, then the third, and so on. Graphic elements gain or lose emphasis by changing in size, visual intensity, colour, complexity, uniqueness, placement on the page, and relationship to other elements.

Movement

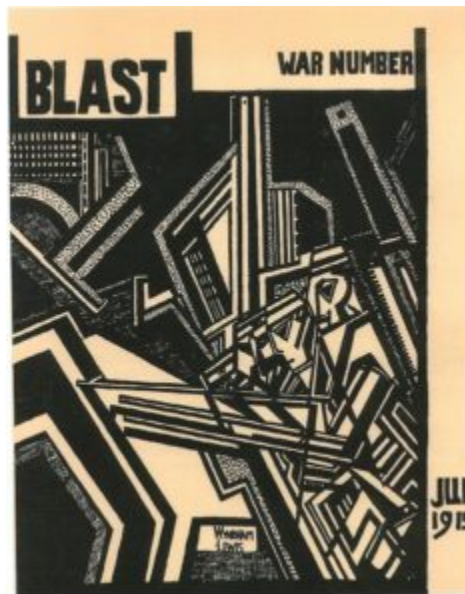


Figure 3.18 Example of movement

Movement is made by creating visual instability — like motion in a photograph that blurs the image, as shown in the example in Figure 3.18. Creating the illusion of movement photographically or artistically is not difficult because a blur translates into movement in the mind of the viewer. However, it is not

the only option for a designer. A composition can also achieve movement if the graphic elements are arranged in a way that directs the eye to move in a specific direction — usually by creating a diagonal that takes the eye up to the right corner (forward motion) or down to the left corner (backward motion). Movement can also be created using overlapping planes that imply depth and distance by becoming progressively smaller and lighter in tone (mimicking depth). Using typography as a visual medium is also an option. Overlapping the text blocks and/or sentences effectively creates both depth and movement (though it destroys legibility). David Carson is a designer who often uses this technique to create movement in his work.

Scale

Varying scale (size) is one of the major tools in the designer’s toolbox. Changing scale is important on two levels. The first is purely compositional — a composition needs variety in the size of its elements to be dynamic and effective. If all the elements have the same visual weight, the composition will be flat. Another aspect to varied scale is conceptual. If a design visually distorts the size relation of one element to another, the viewer is instantly engaged in discovering why. This is a great method to engage the viewer and add a twist to the message embedded in the design. A great example of this is the [‘think small’ ad campaign](#) of the 1960s for Volkswagen Beetle.

The series is witty and engaging and plays on how we perceive size. This distortion is witty and playful, and presents smallness as desirable. Subtle scale differences do not make much visual impact, but large ones are very dramatic. The concept and context of a project should determine the relationship of scale differences for a composition. Large differences in scale are suited to dramatic and energetic design content, while smaller differences in scale are appropriate for professional and institutional content.

Proximity and the Gestalt Theory of Visual Relationships

Proximity of elements is part of Gestalt theory, which is a framework of spatial relationships developed in the 1920s by the German psychologists Max Wertheimer, Wolfgang Kohler, and Kurt Koffka. The term Gestalt means *unified whole*, and points to the underlying conceptual structure of this framework. Gestalt works because the mind seeks to organize visual information. A composition created using Gestalt principles predetermines how each of the elements within it interacts with the others spatially. In this system of relationships, close proximity of objects, regardless of shape, size, or content, indicates a connection. There are six basic Gestalt principles: (1) similarity, (2) continuation, (3) closure, (4) proximity, (5) figure/ground, and (6) symmetry and order.

Similarity

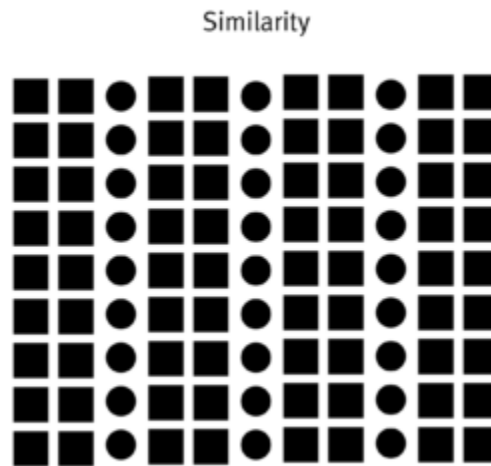


Figure 3.19 Similarity

When visual elements have a similar shape or look as one another, a viewer will often connect the discrete components and see a pattern or grouping (see Figure 3.19). This effect can be used to create a single illustration, image, or message from a series of separate elements. Similarity of medium, shape, size, colour, or texture will trigger a sense of similarity. The sense of grouping will be strengthened or weakened by increasing or decreasing the commonality of the individual elements.

Continuation

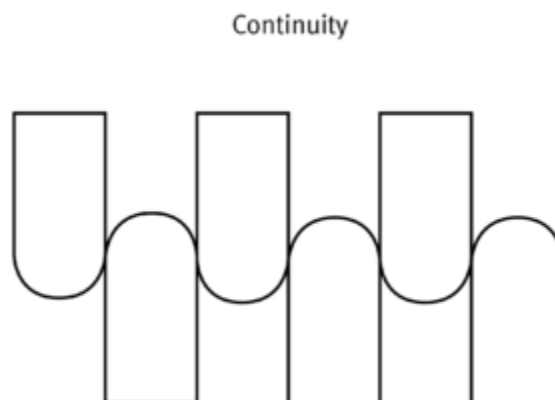


Figure 3.20 Continuity

Continuation is the tendency of the mind to see a single continuous line of connection rather than discrete components (see Figure 3.20). The eye is drawn along a path, line, or curve, as long as there is enough proximity between objects to do so. This tendency can be used to point toward another element in the composition, or to draw the eye around a composition. The eye will continue along the path or direction suggested by the composition even when the composition ends, continuing beyond the page dimensions.

Closure



Figure 3.21 Closure

Closure is a design technique that uses the mind's tendency to complete incomplete shapes (see Figure 3.21). The principle works if the viewer is given enough visual information to perceive a complete shape in the negative space. In essence, the mind 'closes' a form, object, or composition. In the example above, the triangle is formed by the viewer's mind, which wants to close the shape formed by the gaps and spaces of the adjacent circles and lines. The partial triangle, outlined in black also hints at the missing shape.

Proximity



Figure 3.22 Proximity

Proximity is an arrangement of elements that creates an association or relationship between them (see Figure 3.22). If individual elements are similar, they will probably be perceived first as a whole and second as discrete components. If, like the example above, some of the components form to create a large ‘whole,’ similar elements positioned away from the main shape will also be associated with the large shape. In this case, the viewer interprets them as falling off or away from the main shape. The shapes used do not have to be geometric to create the effect of proximity. Any components have a strong commonality in shape, colour, texture, size, or other visual attribute can achieve proximity. Proximity can also be achieved with dissimilar shapes and textures if cleverly and conceptually composed.

Figure/Ground

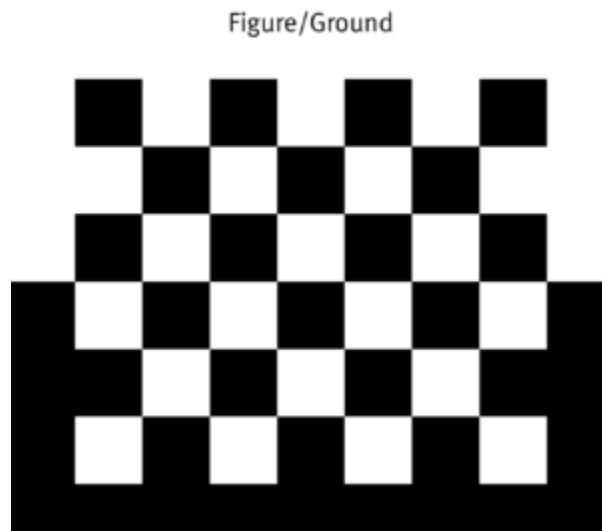


Figure 3.23 Figure/Ground

Figure/ground was discussed earlier, but it is part of Gestalt theory, so we present it here again. This principle describes the mind's tendency to see as two different planes of focus, information in both positive and negative space (see Figure 3.23). It works if those spaces are suggestive enough in their composition.

Symmetry and Order

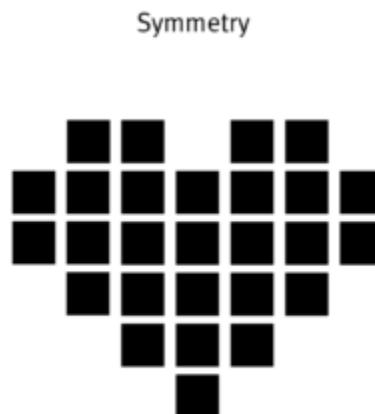


Figure 3.24 Symmetry

Symmetry and order follow the premise that a composition should not create a sense of disorder or imbalance (see Figure 3.24), because the viewer will waste time trying to mentally reorder it rather than

focus on the embedded content. The photographic example in Figure 3.25 is composed symmetrically and allows the viewer to concentrate on the figure in the centre. Achieving symmetry in a composition also gives the composition balance and a feeling of harmony.



Figure 3.25 Example of symmetry and order

Rhythm

Rhythm is integral to the pacing of a design composition and is also necessary for creating a pattern, as used in the example in Figure 3.26. The pacing of a repeating motif or element at regular or irregular intervals within a design determines the energetic quality of a composition; it also creates a consistent and unifying backdrop for the introduction of new elements.

Rhythm is the effect produced in a magazine or book by varying the placement of elements within the grid structure. The changes in the density of elements and visual tones of the spreads translate into a rhythmic visual energy as the energy of each page grows or shrinks. Rhythm is the glue that connects one page to the next; it reveals recurrent themes and creates movement, tension, and emotional value in the content. When viewers understand the rhythm of a book, a magazine, or a website, they will also appreciate the variations that break with or punctuate the rhythm and create interest, change, or tension.



Figure 3.26 Example of rhythm

Repetition

Repetition creates visual consistency in page designs or in visual identities, such as using the same style of headline, the same style of initial capitals, and the same set of elements, or repeating the same basic layout from one page to another (see Figure 3.27).

Excessive repetition, however, creates monotony. This usually leads to viewer boredom and dull, uninteresting compositions for the designer. Be sure to create a design system that allows the repetitions within it to be lively and interesting page after page. The example above uses a simple set of rules, but because the rules allow for colour and compositional changes, each discrete component is as interesting on its own as it is within the whole. If you cannot avoid excessive repetitions, try to add some visual breaks and white spaces where the eyes can rest for a while.



Figure 3.27 Example of repetition

Balance

Balance and symmetry are important design qualities because they are deeply embedded in human DNA. Because our bodies are symmetrical, we have a strong association and satisfaction with centred, symmetrical design. Balancing visual elements compositionally calms the tensions and grounds the design (see Figure 3.28). This is important if you wish to convey a sense of stability to the viewer. When we look at a design, we use our innate sense of what constitutes ‘right balance’ to assess its stability. If that stability is missing, we feel tension, which can counteract the core of the message. Centred design compositions work very well for stable, security-inspiring content, but what about content that demands attention, or tension, or excitement?

When a centred (or stable) composition is not desirable, developing an asymmetrical composition is the best strategy. Asymmetry has been explored in graphic design for the last 150 years, and designers continue to discover new strategies that feel fresh. Asymmetry has no empirical rules but is guided by balancing the distribution of main elements around the space of a composition in an unexpected way. Contrast and counterpoint are the main tools of composition in asymmetry — large shapes balance small ones; intense colours balance neutrals. Creating asymmetrical design is not easy because there are no firm rules to follow, but it is exciting to create and exciting to see for exactly the same reason.

by experimenting with, and breaking free from universal rules of visual structure. It is important is to match the structure of the composition to the needs of the project.

Typographic hierarchy is very important in design. A body of text is made more comprehensible by imposing order through a system of titles, subtitles, sections, and subsections. Hierarchy is created when the levels of the hierarchy are clear and distinguishable from one another. Subtle signs of difference are not effective. Typography acts as a tonal voice for the viewer, and must create clear variation in tone, pitch, and melody.

Hierarchy is usually created using similarity and contrast. Similar elements have equality in typographic hierarchy. Dominant and subordinate roles are assigned to elements when there is enough contrast between them. The bigger and darker an element is, the more importance it has. Smaller and lighter sizes and tones imply lesser importance.

Every hierarchy has a most important level and a least important level. The elements that fall between the two are ranked according to size and position. However, if you subdivide the text with too many levels, the contrast between different levels will blur their differences in the hierarchical order.

A good strategy to follow with text design is to apply three levels of typographic hierarchy.

Title

The function of a title is to attract the reader to the content of the text block. Often, the title is visually ‘flavourful’ and possesses a strong visual dynamic and energy.

Subtitle

Second-level typography gives the reader the ability to distinguish between types of information within the text block. This level of type includes subheads, pull quotes, captions, and anything else that can help detail and support understanding of the text-block information.

Text block

The text block is the content. As opposed to the ‘display’ function of the title and subtitle, the function of the text block is to make the content legible and easy to digest visually. Readers should be able to decide if they want to read this level based on primary (title) and secondary (subtitle) type levels.

Typically, a typographic hierarchy will convey information from general to specific as it progresses from title to text block. The general points presented in the title will be the most important and will be seen by most everyone. Think of how a newspaper is scanned for interesting news items: If readers are interested in the title, they may choose to read more detailed and in-depth information in the associated text block.

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3.4 Organizational Principles

Alex Hass

Compositional organization is complex, but even more so when applied to typography. Typography is a complicated medium to work with as it contains two levels of information (display and content), and requires its components to be read in proper sequence with proper emphasis, good legibility, and strong contrast to the substrate. Many elements need to be organized to allow the reader a seamless experience when reading the content. Designing with type requires adept handling of the hierarchy, refining and designing the display elements for focal emphasis and also refining the quiet details of the text block so it sits perfectly and quietly in its space.

Think of these organizational systems as ‘large picture’ constraints. Constraints (rules) allow a designer to focus on the other aspects of a project. Designers make myriad decisions about concept, style, visuals, form, font, size, spacing, colour, placement, proportion, relationships, and materials. When some factors are determined in advance, the designer is able to spend time with the other parts of the project. A well-defined constraint can free up the thought process by taking some decisions off the table. The following eight organizational systems cover composition for type (but can also be applied to general composition), including the traditional ordering system of the grid.

Grid

A grid is a network of lines that structure the placement of elements and create relationships between them. A grid divides a design space into vertical and horizontal divisions. The grid is a bridge between a design rationale and the beginning of implementation for each project, converting a concept into a structured space. It is an exceptional tool for composing, arranging, and organizing every kind of visual element. The grid usually works invisibly in the background, but it can become an active, visible element as well. Designers use grids in a variety of ways. They can be very disciplined about adhering to their grid structure from the beginning of a project, or use it as a starting point for composition and order.

Grid systems create a formal composition in comparison to more casual compositional approaches like transitional or random structures. Grids are often used in publication and web design because they introduce consistency and guide hierarchy. Consistent margins and columns create an underlying structure that unifies the multiple pages of a document or website, and makes the layout process more efficient.

The plan for the grid comes from the content and concept of the design project. The objective in creating a grid is to set up the relationships between elements in a way that stays true to the concept. For instance, if your publication is a book of poetry, the grid must have generous amounts of negative space and generous leading. If, on the other hand, your publication is a daily newspaper, the spacing relationships cannot be so generous, and have to clearly show which article relates to which image. Hierarchy of information must be very clear as well, and should reveal which news item is most important and which is least important. A well-made grid will naturally allow the designer generous scope for variation in

image style, text size, and graphic style. Often, a grid that is complex allows for some freedom where the designer can introduce a new element or effect.

A grid activates the entire surface of a project by making all of it available for active elements. It helps create both stable symmetrical and dynamic asymmetrical compositions. By breaking down space into smaller units, grids encourage designers to leave some areas open rather than fill up the whole page.

Types of Grids

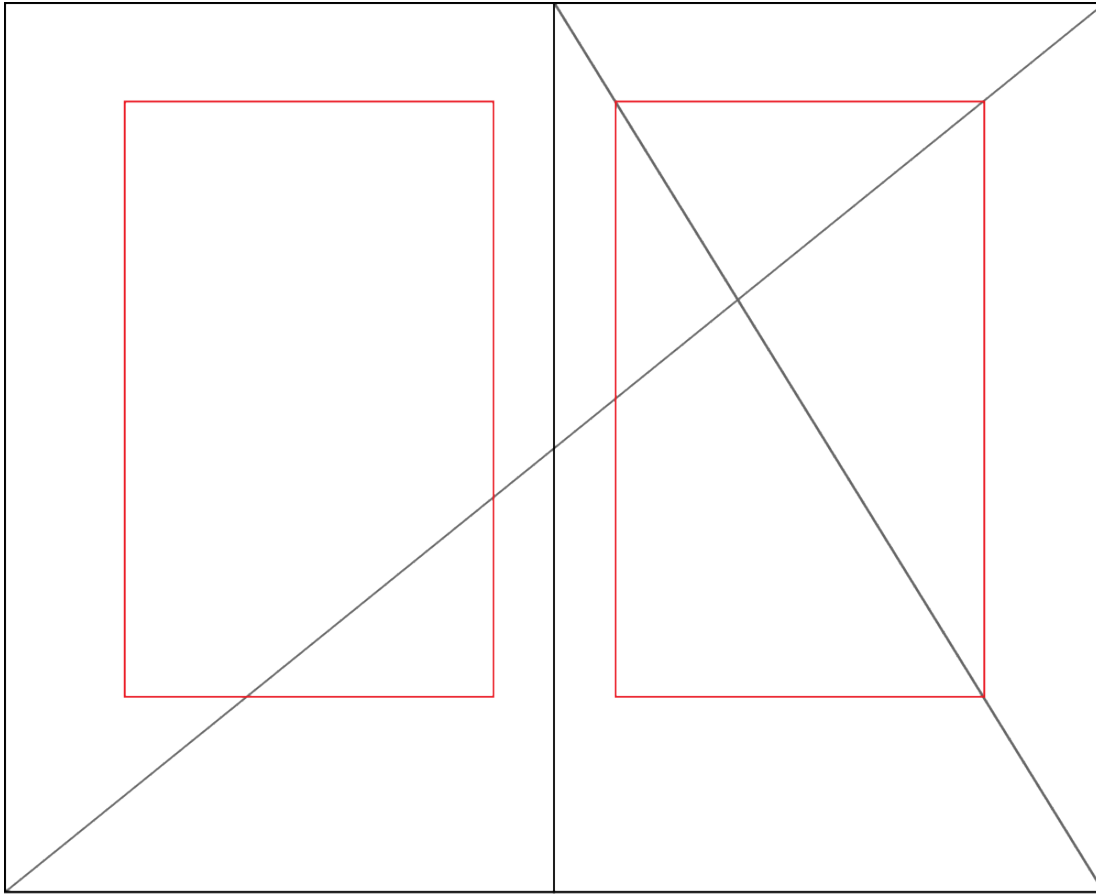


Figure 3.30 The golden section

The golden section is also known as the golden ratio, golden mean, or divine proportion, and it is found in mathematics, geometry, life, and the universe — its applications are limitless (see Figure 3.30)

The golden section is a ratio — a relationship between two numbers — that has been applied as an organizational system in art, design, and architecture for centuries. Expressed numerically, the ratio for the golden section is 1 : 1.618. The formula for the golden section is $a : b = b : (a+b)$. In other words, side a is to side b as side b is to the sum of both sides.

Graphic designers use the golden section to create grids and layouts for websites and books. Photographers use it to compose the focal point of an image and also to compose the elements found in an image.

Single-Column Grid



Figure 3.31 Single-column grid

A single-column grid is an excellent approach if the content a designer is working with is formatted in a simple manner (see Figure 3.31). Content that is appropriate for a single-column grid consists of main text for the text block, a few levels of display type, possibly some images, and finally page numbers.

The main column of this style of grid must sit properly on the page, held in place by the negative space that surrounds it. To determine the right amount of negative space on the top, bottom, and sides of the page, a designer usually considers facing pages as a spread. In books and magazines, the two-page spread, not the individual page, is the main unit of design. The designer determines the right amount of negative space on the top and bottom, gutter (inside margin), and outside edge. The spread is often symmetrical, and the pages mirror one another.

Multi-Column Grid



Figure 3.32 Multi-column grid

When a designer creates a grid for a document that is complicated, he or she may use multi-column grids because they allow for a complex hierarchy and provide more options for integrating text and visuals (see Figure 3.32). The more columns you create, the more flexible your grid will be. You can use the grid to articulate the hierarchy of the publication by creating zones for different kinds of content. The columns act as visual units that can be combined or kept separate. A photo can span several columns or be reduced to the width of only one. A text can also occupy a single column or span several.

Hang Lines

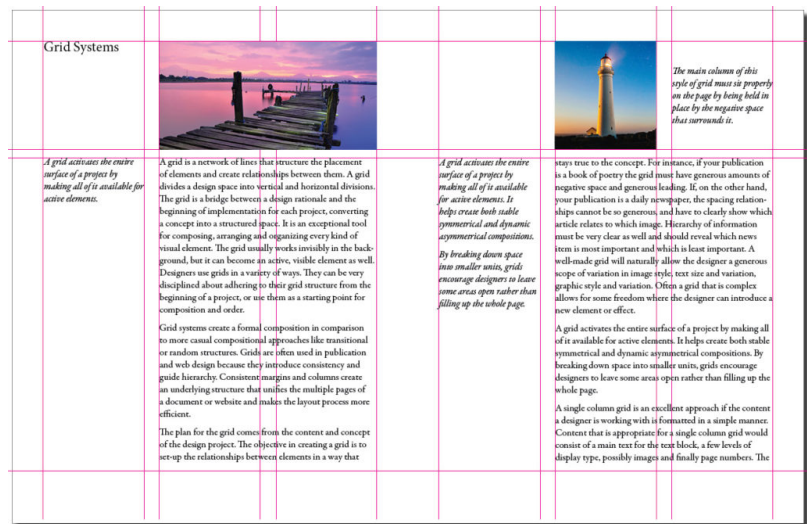


Figure 3.33 Hang lines

In addition to creating vertical columns in a grid, you can also divide the page horizontally. Often, a designer determines the placement of hang lines (see Figure 3.33) by applying the rule of thirds

(breaking up the horizontal plane into three equal parts). This compartmentalization allows the designer to reserve certain sections for images and others for the text block.

Modular Grid

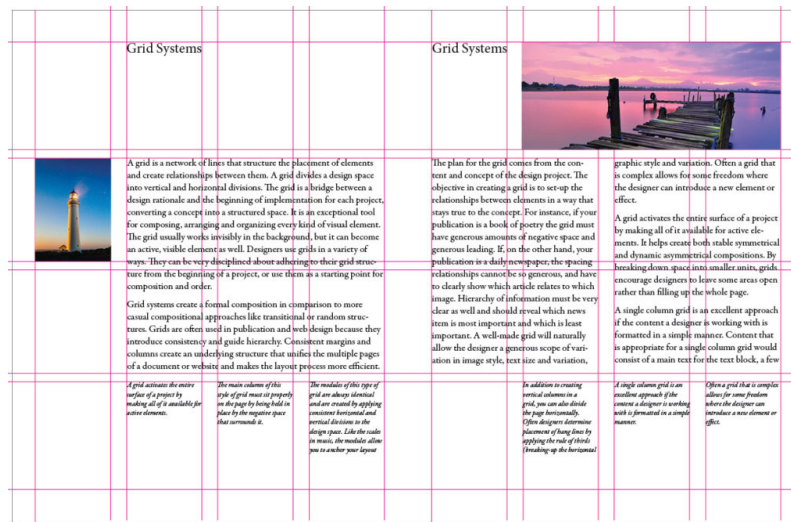


Figure 3.34 Modular grid

The modules of this type of grid are always identical and are created by applying consistent horizontal and vertical divisions to the design space. Like the written notes in a musical score, the modules allow you to anchor your layout elements and typography to a specific rhythm. With a modular grid, the horizontal guidelines are tied to the baseline grid that governs the whole document. Baseline grids serve to anchor most of the elements to a common leading (typographic line spacing). See Figure 3.34.

Baseline Grid

A baseline grid is the horizontal grid that determines where all of the type will sit. You can also use it to determine the placement and edges of your visual and graphic elements. To create a baseline grid, determine the right font, size, and leading for your text block, then go to your baseline grid settings (found with the other grid preferences) and change the baseline grid default (usually 12 pt) to the leading you will be using in your text block.

Axial

The axial system has a simple premise — all elements are arranged on either side of an axis or line. You can centre the axis itself in the composition or, for a more energetic asymmetrical composition, place the axis off centre to either the right or left. This compositional strategy creates a dynamic negative space on the opposite side. To create a more complex composition, designers often employ an axial system combined with another — like the radial or dilatational system (see below). They may also use double-axis compositions with the axes either parallel to each other, or intersecting to create a strong focal point. There are many instances of the axial system in nature — tree trunks, roots, and vines are good examples.

Like these organic examples, an axis does not need to be a straight line — it can be curved, zigzag, or circular.

Modular

Modular organization is a compositional method that utilizes rigour (by constraining the shape) and freedom from structure (modules can be any size and placed anywhere in the space). Modules can also be uniform and contained within a structure (a grid). A module is a fixed element used within a larger system or structure. For example, a pixel is a module that builds a digital image.

Bilateral

The bilateral system is based on mirrored symmetry and is therefore both classic and ubiquitous. Because of its predictability, it is a challenge for designers to work with. Nature exhibits many examples of bilateral composition — the bodies of mammals, the points of a snowflake, and the fractal symmetry of plants are all quickly understood, appreciated, and then dismissed by the viewer. To create a composition based on the bilateral system, a designer must make some part of the composition unusual. The designer can achieve this by moving the axis to a diagonal, off-centre location, which allows the negative space on either side of the bilateral composition to be varied. A second method is to introduce a double axis: the designer uses two columns of bilateral information and varies the size of each.

Radial

The radial system takes its name from the sun — all elements are arranged like rays coming from a central focal point. This is a dynamic compositional strategy as it references dynamic action. Examples of the radial form from the natural world, such as explosions, flowers, spiders, stars, and so on, are all exciting and dynamic. Much like it is difficult to handle the natural objects, reproducing a radial composition is not that easy. There are problems with legibility unless type is very carefully placed and scaled. Every line of type starts and ends in a different place, so continuity is also hard to control. For example, a designer may take a traditional approach so the text reads from top to bottom, or an inverse approach so the text reads from bottom to top. Arranging the text on either side of centre may also be effective. It is important to try placing the type in different positions and in different relationships until it works with the composition and is easy to read.

As in the organizational systems we have discussed, designers can add radial points for a more complex composition or combine a radial system with one that adds stability, such as a grid, axial, or modular system.

Dilatational

Dilatational systems mimic the look of still water when a pebble is dropped into it, creating rings of greater and greater size as they move away from the centre. Like the radial system, this composition has

a strong focal point, but unlike the radial system, the composition creates rings, not rays, that expand from the centre. Other examples of this system are the iris of the eye or representations of sound waves.

Random/Spontaneous

Creating a composition that does not follow any compositional principle is not as easy as it sounds. Finding examples of randomness is also one of the most difficult exercises for design students. Random design does not follow any rule, method, direction, or pattern. If a project calls for randomness, it is best to start with materials that are conducive to spontaneity like Jackson Pollock's paint throws. Allow the elements that fall to organize themselves naturally — eventually, a dynamic and fresh composition should emerge. Random compositions exhibit visual qualities that are not patterned, aligned, or horizontal. Instead, they tend toward compositions that exhibit overlapping, cropping, angling, and textures.

Transitional

The transitional typographic system is defined by the layering of lines of text into informal textured planes and shifting tonal bands. The shapes and bands created with this layering approach are not aligned with one another, and create an overall organic atmosphere. This visual approach is often used in Post Modern design where the clear legibility of text is not as important as the visual atmosphere of the design. Text planes in Post Modernist works point the viewer to the main theme of the message rather than articulate the message in clean, concise text arrangements.

Compositions using the transitional approach have a light, airy look that abstractly imply cloud formations or wood grain patterns rather than solid concrete shapes created by using the grid or axial systems. A transitional composition has lively and active negative space, and can create an excellent ground for a vital focal point if it is in sharp contrast to the rest of the composition.

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Figure 3.32

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3.5 Summary

Alex Hass

Exploring the design possibilities that the organizational systems discussed in this chapter possess is an endless undertaking. Once these systems are innately understood individually, a designer can begin to play with layering two systems within one design project. Combining contrasting systems often works well. For instance, an axial system combined with a radial system tempers the axial system's linear focus and anchors and diffuses the rays emanating from the radial shapes. A grid combined with a dilatation system gives the composition both vertical and horizontal structure that is softened by the rounded shapes. Organizational systems give the designer ways to distribute words or images within a structure while allowing negative space into the centre of the design space.

Compositional strategies are design constraints. The definition of a design constraint is to apply or impose limitations on the elements or design of a system. The compositional strategies (systems) discussed above are in fact design constraints, and they should be understood as parameters that assist the designer in the design process rather than as restraints that limit the designer's creativity. Parameters are necessary in every visual system. Applying a visual organizational system also allows the designer to focus on the message and the details of a design project rather than on the structure of the composition that holds the work together. Visual systems create visual unity.

Questions to consider after completing this chapter:

1. Name the design principle that distorts realistic relationships for visual effect and emphasis.
2. Name the three building blocks of design that pertain to form.
3. Describe the eight organizational systems that apply to typography.
4. What are two typographic categories?
5. How many levels of visual hierarchy are needed for hierarchy to exist?

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Suggested Readings

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Chapter 4. Colour Management in the Graphic Technologies

4.1 Introduction

Alan Martin

Learning Objectives

- Define the relationship between the observer, the illuminant, and the object in colour appearance
- Describe the physics of light and colour
- Recognize how the eye-brain system affects colour perception
- Explain the components of the CIE colorimetric system, specifically the Lab colour space and Delta E measurements
- Differentiate between device specific and device independent colour models
- Describe the role of colour management in achieving consistent appearance between proofing cycles and final printed production
- Define an ICC profile and describe its application in digital imaging
- Use a spectrophotometer to capture colour data from industry standard targets as the first step in profile creation
- Create ICC colour profiles for standard colour transformations
- Calibrate, profile, and colour manage an LCD monitor
- Describe the application of display, input, and output colour profiles in the electronic prepress workflow
- Apply colour profiles in a variety of industry-standard applications to achieve desirable results for graphic reproduction
- Combine source and destination profiles into a single device link profile for device specific colour transformations
- Apply colour management with ICC or device link profiles in the colour control module of Prinergy's Process Plan for proofing output
- Combine surplus spot colours into a single separation for successful printing-plate production

A knowledgeable application of a colour-managed **workflow** is required for the successful and predictable generation of all colour content in print production and related graphic technologies.

This process requires familiarity with the fundamental colour science that drives the practical steps of **colour profile** creation and colour profile use in our industry-standard software applications. From colour science, we can progress to an examination of the tools and detailed steps required for profile creation and successful profile use.

4.2 Colour Science

Alan Martin

The Colour Event

The first challenge in dealing with colour in graphic reproduction is to learn to think of colour as an *event* rather than as an attribute or characteristic of a particular object.

Colour is an event because it requires the participation of three components at a particular point in time to take place. In addition to the object, we require a light source and an observer. Only with the interaction of these three things — object, light, and observer — can we have a colour event or experience.

We need some help from three branches of science, physics, physiology and psychology, to understand how the object, light, and observer contribute to the colour event. If you like memory aids, you can use the acronym POLO to remind you of the three science P's and the object, light, and observer.

Object

The object and light fall under the domain of physics, while we need both physiology and psychology to describe the observer's role in the colour event.

The object's role is to interact with light, and the object can either reflect light back from its surface or transmit light through itself. Reflectance and transmission are the two potential interactions. The majority of objects are opaque, so most of the time we are dealing with the reflection of light. If an object is semi-opaque, and transmits a portion of light, we refer to it as translucent.

Light

Visible light is a tiny sliver of the total electromagnetic spectrum. The **electromagnetic spectrum** contains all forms of energy, ranging from kilometre-long radio waves at one end and progressing in shortening wavelengths down through microwaves, infrared waves, ultraviolet waves, X-rays, and finally, gamma waves with wavelengths of a subatomic dimension (see Figure 4.1).

Visible light is nestled in-between the infrared and ultraviolet range (see Figure 4.2). The progression from longest to shortest wavelength is from red (following infrared) to violet (preceding ultraviolet) in the 700 to 380 nanometre (millionths of a metre) wavelength distribution.

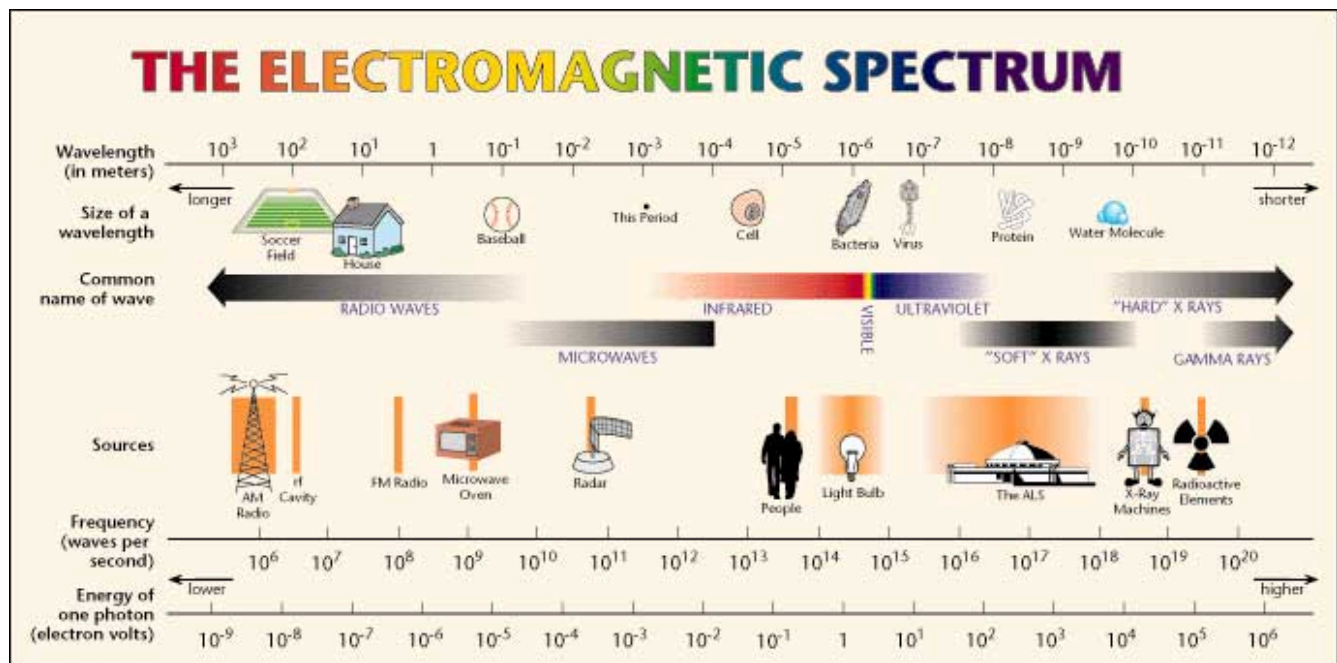


Figure 4.1 The Electromagnetic Spectrum

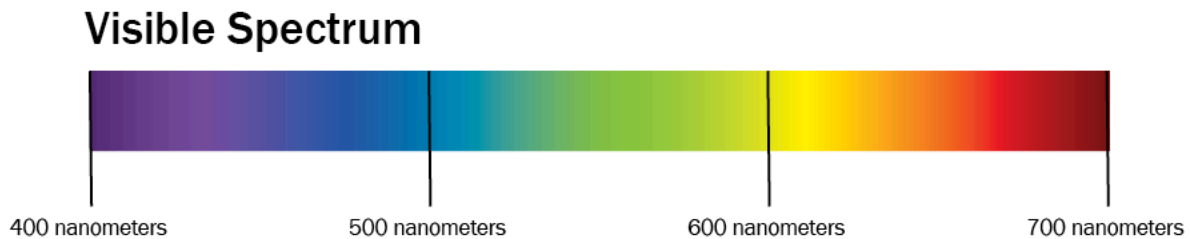


Figure 4.2 Visible Spectrum

We describe the **temperature** (relative warmth to coolness) of light in degrees Kelvin. Typical daylight ranges from 5000 to 6500 degrees Kelvin. We use the labels D50 and D65 to indicate daylight-viewing conditions at these temperature points.

Observer

The greatest complexity of the colour event occurs in the interaction with the observer. The science of physiology, the study of the human body's functions, provides half the story. Psychology, which provides insights about the function of the mind, completes the tale.

We begin with how our eyes, our optic systems, respond to light. Trichromacy and opponency are the key concepts.

Trichromacy

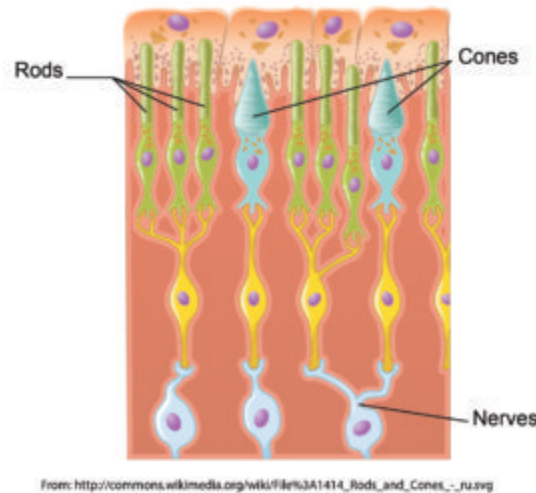


Figure 4.3 Rods and cones (adapted by Ken Jeffery)

We call it ‘visible’ light because it is the portion of the electromagnetic spectrum that our eyes are sensitive to. The two types of receptors in our eyes are cones and rods (see Figure 4.3). The cones respond to colour and the rods come into play in low-light situations when we see only varying shades of grey. There are three types of cones, each sensitive to approximately one-third of the visible spectrum. We characterize those segments of the spectrum as red, green, and blue, and this three-colour or trichromatic response by the cones is where all colour experience begins. Every colour we perceive comes from mixing varying volumes of the red, green, and blue signals from the three types of cones in our eyes.

The Additive Primaries

We refer to the *red*, *green*, and *blue* colour set (**RGB**) as the **additive primaries**. When we combine or add all three of these, we get the entire spectrum and, thus, white light. This is the primary colour set involved whenever we talk about the transmission of light, such as the display on a computer monitor, a tablet, or from a projector. For this reason, red, green, and blue are also referred to as the **transmissive primaries**.

The Subtractive Primaries

What happens when we project two of the three additive primaries on top of each other? This is the same as removing or subtracting one of the additive primaries from white light. Let’s start with red and green. Though not at all intuitive, if you have any experience with mixing paint or inks, the combination of red and green light produces yellow. Remember that we are adding light to light, so the production of a

brighter colour is to be expected. Continuing on: combining green and blue gives us a light blue that we call cyan, while the combination of red and blue produces magenta.

Since each of these colours is produced by subtracting one of the additive primaries from the full complement of white light, we refer to this colour set of *cyan*, *magenta*, and *yellow* (**CMY**) as the **subtractive primaries**. Each of the subtractive primaries acts as a filter for its complementary colour in the additive primary colour set. Cyan absorbs all red light, reflecting only green and blue. Magenta absorbs all green light, returning only red and blue; while yellow absorbs all blue light and reflects back only red and green. What colour would you see if you shone green light on a magenta patch?

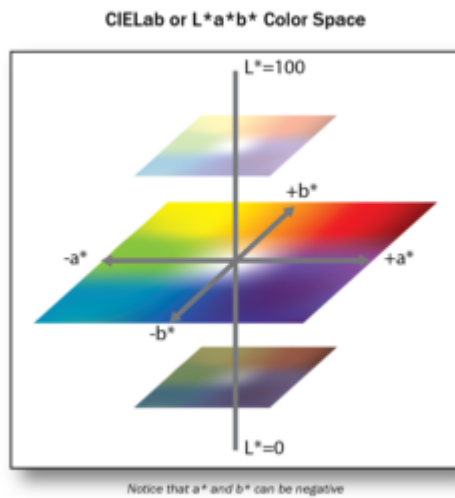
Just as we can produce any colour sensation in the transmission of light by mixing the appropriate quantities of red, green, and blue, we can produce the corresponding colour sensation when we put ink on paper by absorbing the necessary portions of the visible spectrum so that only the required amounts of red, green, and blue are reflected back. This is how cyan, magenta, and yellow work as our primary colours in the printing environment, and why we also call them the **reflective primaries**.

Opponency

The second half of the role that our human physiology plays in the observer's part of the colour event is the concept of opponency. Our eyes' tristimulus response (a response to the red, green, and blue portions of incoming light) is the input, but the interpretation occurs when we map that input to a location in a colour space determined by three axes of opposing sensations. We have a built-in colour map where we define our colour perception by identifying the perceived colour based on its degree of greenness to redness, blueness to yellowness, and darkness to lightness.

These three pairs of opposites — green-red, blue-yellow, dark-light — are the fundamental guide posts we use to position any colour we perceive on our internal colour map. These opponent colour pairs are exclusive colour entities, occupying opposing ends of the range of our interpretation. Unlike a yellowish-orange or a reddish-purple, we cannot imagine a colour having the properties of red and green or blue and yellow at the same time.

Lab Colour Space



Once the opponent nature of colour interpretation was understood, colour scientists were able to create a model colour space based on the opposing pairs. This is the **Lab colour space** (see Figure 4.4). The Lab variation of interest to us is officially called *CIELAB*, and all references in this textbook to *Lab* will mean *CIELAB*. Additionally, references to *L*, *a*, and *b* in this textbook are equivalent to the L^* , a^* , and b^* units of the CIELAB colour space. Each of the opposing pairs provides one axis of this three-dimensional colour space. *L* is the axis for darkness to lightness; *a* is the axis for greenness to redness; and *b* is the axis for blueness to yellowness. By providing a value for each of the *L*, *a*, and *b* attributes, a colour is accurately and uniquely located in the colour space. The tremendous utility of the Lab colour space is that it allows for the mathematical description of a colour in a non-ambiguous and meaningful way.

Psychology of Colour Perception

We come to the last of our three science P's: psychology. After the trichromatic response is passed to opponent interpretation in the physiology of our optic systems, the final engagement of colour perception occurs in our minds. This interaction complicates and potentially confounds our objective measurements, so it is critical to be aware of the typical issues that the filter of our mind brings to the arena of colour perception.

Colour Constancy

Colour constancy is how our mind adjusts our colour perception to discount or remove the effects of an overall colour cast due to a coloured illuminant. If we see someone wearing a yellow sweater illuminated by a bluish cast of light, we still 'see' a yellow sweater, even though we have no trouble identifying the colour in the sweater as green if it is isolated from the scene. In our mind, we remove the blue

constituents of all colours in the scene that we assume are coming from the tint in the light source. This behaviour is also known as **chromatic adaptation**.

The effect of **adjacency** is very similar to colour constancy. A colour placed next to a light colour appears darker than when that same colour is placed next to a dark colour (see examples in Figures 4.5 and 4.6). We make adjustments to our interpretation based on our assessment of the environment.

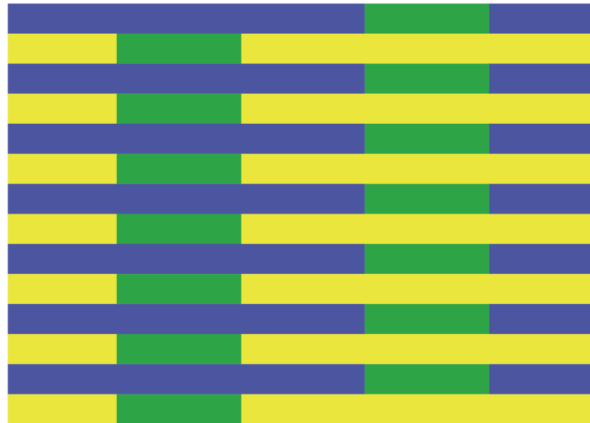


Figure 4.5 Both greens are the same colour



Figure 4.6 Both reds are the same colour

The effect of colour constancy provides a very important lesson in judging our success in colour matching: it is more important to preserve the overall colour relationships in our image than to focus on individual colour accuracy.

Memory Colours

In our mind's eye, not all colours are created equal. Due to their historical importance to our survival, we pay special attention to certain colours. Flesh tones, the blue of the sky, and the greens of grass are known as memory colours due to the additional weight they have in our hierarchy of colour.

We need to give these memory colours a priority when we evaluate our colour management efforts. If these key colours aren't right, then everything will look wrong.

The significant impact of our mind's contribution to colour perception enforces the requirement to take colour matching beyond the raw numbers we can extract from the physics and physiology of light's interaction with an object and our optic systems. The psychological components such as colour constancy and memory colours can only be accommodated by human intervention in a colour management system.

Media Attributions

- [1414 Rods and Cones modified-01-01](#) © Kaidor, adapted by Ken Jeffrey is licensed under a [CC BY-SA \(Attribution ShareAlike\)](#) license
- Lab colour space © Ken Jeffrey
- green-yellow © Ken Jeffrey
- colours in the middle © Ken Jeffrey

4.3 Measuring Devices

Alan Martin

We measure light to provide the data needed to manage colour in a graphic production environment. There are three ways to measure light and three corresponding tools available to take those measurements: densitometer, colorimeter, and spectrophotometer.

Densitometre

To measure only the volume of light, we use a densitometer. The **densitometre** provides a known volume of light and then records what remainder of that light is returned to the device. A transmissive densitometer records how much light gets through a semi-transparent material such as camera film, and a reflective densitometer measures how much light has bounced back. The majority of densitometers in the print environment are reflective.

How does measuring the volume of light help us? Maintaining a consistent thickness of ink in printing is a very good way to control consistency and quality, and measuring the amount of light absorbed by the ink is a very accurate indicator of ink thickness.

Since our eyes have to function over a very wide range of brightness, we have a non-linear response to increasing volumes of light. That means it takes approximately 10 times the amount of light for us to experience one step in our perception of brightness. To match this behaviour of our eyes, the density scale is based on powers of 10, with each larger whole number representing one-tenth the volume of light of the preceding number. A density reading of 1.0 means that 1/10 of the original light has been reflected back. This is a typical reading for a process Yellow patch in offset lithographic printing. A density reading of 2.0 indicates that 1/100 of the original light is returned, while a density reading of 3.0 shows only 1/1000 coming back. Black ink is usually in the 1.7 density range, with cyan and magenta at 1.3 to 1.4.

Scanning or hand-held densitometers are typically found in the viewing station by a press. Densities are recorded when the printed sample matches the desired result and then ongoing adjustments to maintain the target densities keep the printing on target.

Colorimetre

Colorimetres mimic the three-colour response of our eyes by using red, green, and blue filters to measure the amount of light present in each third of the spectrum. They have built-in software to calculate Lab values based on what volume of red, green, and blue is returned from a sample. Colorimeters are particularly useful for calibrating and profiling monitors. Some well-known examples of colorimeters are the X-Rite ColorMunki or i1 Display devices.

Spectrophotometre

Spectrophotometres measure slices of the spectrum to produce a spectral ‘map’ of the light reflected back from a sample. Spectrophotometers are typically more expensive than densitometers and colorimeters but are employed because they can more accurately do the jobs of both devices. They work by recording the light at specific wavelengths over the wavelength range of visible light, and then by converting this spectral data to colorimetric and densitometric values.

While we are talking about measuring spectral values, it is important to note that we do not depend on identical spectral values to achieve matching colour experiences. Different spectral values can trigger the same volume of colour signals in our optic system and lead to matching colour perception. In fact, we depend on this phenomenon in graphic production in order for proofing devices to simulate the colour output of a printing press or for any two devices to be colour aligned. The ability of the CMYK (cyan, magenta, yellow, black) process colour set to mimic most of the colours in the world is also based on the fact that we can achieve a colorimetric match without having identical spectral values.

4.4 Lab Colour Space and Delta E Measurements

Alan Martin

The CIE (Commission Internationale d'Eclairage or International Commission on Light) is a scientific body formed by colour scientists in the 1930s that has provided much of the fundamental colour knowledge we possess today. Three core definitions provided by the CIE are the standard observer, the Lab colour space, and Delta E measurements. The latter two are particularly important for colour management.

The Lab Colour Space Revisited

In section, 4.2, we mentioned the Lab colour space as a natural outgrowth of understanding the function of opponency in human vision. It's comprised of three axes: *L* represents darkness to lightness, with values ranging from 0 to 100; *a* represents greenness to redness with values of -128 to +127; and *b* represents blueness to yellowness also with values from -128 to +127.

Notice that there are no negative values on the *L* axis as we can't have less than zero light, which describes absolute darkness. The *L* axis is considered **achromatic** meaning without colour. Here we are dealing with the volume rather than the kind of light. In contrast, the *a* and *b* axes are **chromatic**, describing the colour character and the type of light.

The standard two-dimensional depiction is of only the *a* and *b* axes, with *a* as the horizontal axis and *b* as the vertical axis. This places *red* to the right, green to the left, *blue* at the bottom, and *yellow* at the top. If you found our previous mnemonic aid of POLO helpful, you can use RGBY to remember the colour pairs. For correct placement, remember that *red* is on the *right*, and *blue* is on the *bottom*.

Colours are more neutral and grey toward the centre of the colour space, along the *L* axis. Imagine that equivalent values of the opposing colours are cancelling each other out, reducing the saturation and intensity of those colours. The most saturated colours are at the extremes of the *a* and *b* axes, in both the large positive and negative numbers. For a visual depiction of the Lab colour space, open the ColorSync application found in the Utilities folder of any Macintosh computer and view one of the default profiles such as Adobe RGB.

Now it's time to explore the practical application of this colour map for the comparative analysis of colour samples. We can't make any progress in evaluating our success in colour matching unless we have a frame of reference, some yardstick to determine how much one colour sample is similar or different from another. That yardstick is the Delta E measurement.

Delta E

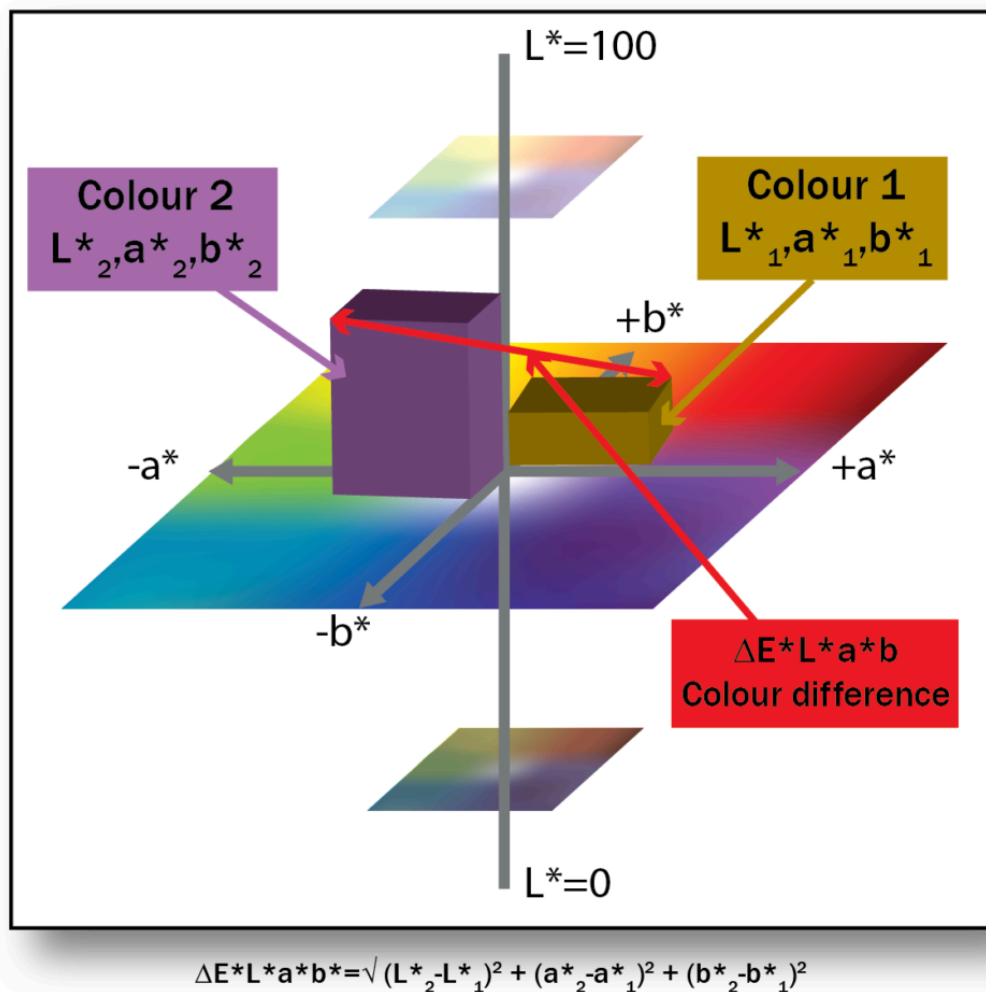
Colour Differences: ΔE_{Lab} 

Figure 4.7 Lab Colour Space

Delta, the fourth letter of the Greek alphabet and symbolized as a triangle, is used in science to indicate difference. **Delta E** is the difference between two colours designated as two points in the Lab colour space. With values assigned to each of the L, a, and b attributes of two colours, we can use simple geometry to calculate the distance between their two placements in the Lab colour space (see Figure 4.7).

How do we do that? It looks a lot like the formula used to determine the long side of a right triangle that you may remember from high school geometry. We square the difference between each of the L, a, and b values; add them all together; and take the square root of that sum. Written out as a formula it looks a little more daunting: $\sqrt{(L_1 - L_2)^2 + (a_1 - a_2)^2 + (b_1 - b_2)^2}$.

Let's try a simple example to see what we get. Colour 1 has a Lab value of 51, 2, 2 and Colour 2 is 50, 0, 0 (right at the centre of the colour space):

$$L_1 - L_2 = 51 - 50 = 1, \text{ and } 1 \times 1 = 1, \text{ so our first value is 1.}$$

$$a_1 - a_2 = 2 - 0 = 2; \text{ and } 2 \times 2 = 4, \text{ so our second value is 4.}$$

$$b_1 - b_2 = 2 - 0 = 2; 2 \times 2 = 4, \text{ so the third value is also 4.}$$

$$\text{Add them together: } 1 + 4 + 4 = 9; \text{ and take the square root: } \sqrt{9} = 3.$$

The Delta E (difference) between our two colours is 3. Could we detect that difference if we were viewing those two colours? Probably just barely. The minimum Delta E for seeing a difference is about 2. Smaller differences can normally be detected in neutral colours (such as our samples), while more saturated colours require a slightly larger Delta E. A Delta E of 4 is the upper threshold for acceptable machine repeatability or consistency.

Delta E provides a value indicating the overall difference between two colours. It does not provide any colour-related data such as which colour is lighter/darker, redder/greener, more blue/more yellow. To understand how the colours are different, we have to evaluate the comparative L, a, and b differences independently.

Experimentation over time has come to show that conventional Delta E is about 75% accurate in showing the difference we see between two colours. Delta E numbers exaggerate the differences in yellows and compress our perceptual distance between blues. To improve on the representation of our interpretation of colour difference, scientists have produced a modified formula known as Delta E(94).

Delta E(94)

Delta E(94) is a modified formula that provides about 95% accuracy in correlation to human perception of colour differences. Here it is in all its splendour:

$$\delta E_{94}^* = \sqrt{\left(\frac{\delta L^*}{k_L S_L}\right)^2 + \left(\frac{\delta C_{ab}^*}{k_C S_C}\right)^2 + \left(\frac{\delta H_{ab}^*}{k_H S_H}\right)^2}$$

where:

$$S_L = 1$$

$$S_C = 1 + 0.045 C_{ab}$$

$$S_H = 1 + 0.015 C_{ab}$$

$$K_L = K_C = K_H = 1 \text{ (for reference conditions)}$$

$$C_{ab} = C_{ab}^* \text{ (standard) OR } \sqrt{C_{ab,1} C_{ab,2}}$$

$$\delta H_{ab}^* = \sqrt{\delta E_{ab}^{*2} - \delta L^{*2} - \delta C_{ab}^{*2}}$$

You can see that it is still the comparison of three values: L, C, and H, where C and H are produced by applying modifying factors to the original Lab values to compensate for perceptual distortions in the colour space. Each difference is squared and the root taken of the sum of the squares, just as in the original Delta E formula.

There is an additional refinement in Delta E(2000) where further adjustments are applied to blue and neutral colours and compensations for lightness, chroma, and hue. This is a much smaller correction than the change from Delta E to Delta E(94).

The good news is that you don't need to understand or remember any of the details of these equations. Just remember that these are real numbers measuring actual plotted distances between colour samples. Delta E represents the distance between two points in the Lab colour space. Delta E(94) and Delta E(2000) are enhancements, providing improved numbers that more closely match our perception of colour differences.

Media Attributions

- Delta E in Lab Colour Space © Ken Jeffrey

4.5 Working with a Spectrophotometer to Read Standard Colour Charts for Output Profiling

Alan Martin

Armed with our fundamental concepts in colour theory, we can apply these principles to the physical process of colour management. The practical application to print production requires a procedure for measurement, colour profile generation, and the correct use of profiles in the manufacturing process. Let's begin with measurement and discuss the working components of a standard graphic arts spectrophotometer and the colour charts we would use it with.

X-Rite i-One (i1) Pro Spectrophotometer

The i1 Pro is one of the most common hand-held spectrophotometers used in the graphic reproduction industry. It can also be mounted in the iO base for automated scanning. As described in section 4.3, the **spectro** works by recording spectral data from incremental slices of the range of wavelengths included in visible light. To do this properly, the spectro must calibrate its white point to establish the baseline for interpretation. It does this by reading the white tile supplied in the baseplate that comes with the spectro. Each baseplate is uniquely matched to a specific spectrophotometer and marked with a serial number that corresponds to its spectro. Make sure you confirm that you have the correct baseplate that matches the serial number on your spectro. When used commercially, the manufacturer recommends that a spectro be returned for factory recalibration every two years. The packaging will include a certificate indicating the expiry date for the current calibration.

The spectro may also be identified (on both the serial number tag and surrounding the light-emitting aperture) as a UV-cut. This indicates it has an ultraviolet filter, which acts to remove the impact of fluorescence from optical paper brighteners. If you have access to more than one spectro device, be sure that any related measurements are done consistently either with or without the filter. Best practice is to use exactly the same instrument for any series of measurements.

The USB cable provides power to the spectro and so should be plugged directly into the computer and not into a peripheral such as a keyboard. Additional typical accessories for the spectro include a weighted strap and screw-in base for hanging the spectro against the screen of a monitor and a proof mount base with sliding rail for the spectro to read printed colour targets.

Colour Charts or Targets

You will typically be dependent on the colour management software application that you have chosen to produce a pdf file of the colour chart that your spectro can read. While in the software, you select a reading device (such as the X-Rite i1 Pro or i1 iO) from the list of devices that the software supports and then provide the dimensions for your output device. The choice of reading device will determine the

size of colour patches and page format, and the size of output will define how many pages are ganged to a sheet. When prompted, name the pdf with a clear identifier (output device and date or equivalent) and save it.

Once you have the pdf, use it for any direct output, such as a proofer, or to make a plate for your printing press so that the colour chart can be printed. In all cases, it is critical that no colour management be applied to the output device for the production of the chart so that the natural base state of the device is captured in the colour target produced. It is also essential that the proofer or press be in an optimal operating state so that the output is an accurate reflection of the device's capabilities. This may require a calibration process for a proofer or standard maintenance procedure on the press.

There are several colour chart standards that you should be aware of. The chart produced by your colour management software will likely be one of these or a slight variation thereof. The original standard is the IT8.7/3, composed of 928 colour patches. This was followed by the ECI 2002, which has 1,485 colour samples. There is now an update to the IT8, the IT8.7/4, which has extended the colour sampling to 1,617 patches. The larger number of patches provides a more detailed snapshot of the colour capability of the device that you are profiling. Of course, it takes more time to read the greater number of samples, so the newer sets are more manageable with automated reading devices such as the iO table. If you are reading with a hand-held spectro, choose the IT8.7/3 or smaller patch set if it is offered by your colour management software. The other trade-off between larger and smaller numbers of colour patches lies in the smoothness of colour transitions. Fewer data points mean less interpolation and potentially smoother curves in colour modulation. Be aware that it will require some experimentation on a device-by-device basis to determine the ideal intersection of accuracy and smooth interpretation for your measurement data.

The colour charts come in two standard patterns of organization: random and visual. Random is exactly that, and comprises the vast majority of charts that are produced for measuring. The colour swatches are distributed to provide optimal contrast between adjacent patches to aid the spectrophotometer that is reading them in distinguishing where one patch ends and the next begins. Having the colours scattered over the sheet also generates relatively even distribution of cyan, magenta, yellow, and black ink which leads to better performance from the press. The visual pattern places the colour blocks in a logical and progressive sequence so it's easy to see the chromatic ranges that are covered. Some scanning spectrophotometers can read the visual arrangement.

Measuring Your Colour Chart

Once you have used the pdf to generate the printed sample, you have to measure the sample. For charts from proofers, it is critical to wait a minimum of 30 to 90 minutes after the sample has been produced before measuring in order for the colour to stabilize. To create a measurement file, you need three things: colour management software; a target from that software; and a measuring instrument supported by the software. After connecting your measuring device to the computer (remember to connect directly to a USB port on the computer, not to a peripheral such as a keyboard), enter the measuring step of your colour management software. You will need to point to the correct measurement chart that was used, which can be easily identified if you have named it distinctively, and confirm the right measuring device is indicated. If you are getting errors once you begin measuring and can't proceed, the typical culprit is the selection of an incorrect colour chart or incorrect measuring device.

When you begin the measurement process, there are a few option prompts you may have to respond to. Some software allows for the averaging of multiple press sheets to produce an improved characterization of the device. This software can scan the colour bars placed at the bottom of the sheet and indicate which sheets are the best candidates for measuring. If you have chosen to do multiple sheets, then you will have to record the sheet number on each of the pages that you cut from the full press sheet in order to enter the sheet number correctly as you carry on measuring.

Proofing devices are stable enough that it is not necessary to average multiple sheets. You may still be cutting out single pages from a larger sheet (depending on the size of your proofing device) and should label the individual pages to stay organized. You can skip any of the prompts that deal with choosing multi-sheet options.

Once past the initial options, you will be prompted to calibrate the measuring instrument. Make sure the i1 Pro is correctly seated on its base plate and push the button. After successful calibration, you will be instructed to mount page 1 of your colour chart and begin measuring. For hand-held measuring with the i1 Pro, use the white plastic proof mounting base it came with. Secure your page under the spring clip at the top of the mounting base, positioning it so that the sliding clear plastic guide the spectro rides on can reach the first row of colour patches. The clear plastic guide has a horizontal opening that the head of the spectro nestles into to traverse the horizontal row of colour swatches. There is a cradle for the base of the spectro to rest on that slides horizontally across the guide. The spectro must begin on white paper to the left of the colour patch row, and finish on white paper to the right of the row. If your target has a semi-circle printed to the left of its colour rows, use it to position the chart under the scanning opening of the plastic guide. The left semi-circle on the opening in the guide should align with the printed semi-circle on the chart. If there is no printed semi-circle on the chart, allow $\frac{1}{4}$ – $\frac{1}{2}$ inch of white space showing in the opening to the left of the first colour patch.

With your chart properly placed in the mounting base, position the spectro all the way to the left on the plastic guide with its base in the sliding cradle and reading aperture in the cut-away channel. Press the button on the left side of the spectro and keep it pressed. Wait one second while the white of the paper is read (there may be a beep to indicate this is done), slide the spectro smoothly and evenly to the right until you reach white paper past the colour patches, and then release the button. You should be rewarded with a prompt to scan row B. Slide the entire plastic guide down one row, move the spectro all the way back to the left, and do it all over again! If you receive an error, clear the prompt and try scanning the same row again. Success at hand-held scanning comes with a little bit of practice and a Zen approach. Your degree of success will be inversely proportional to the amount of anxiety you feel. The techniques that contribute to getting it right are smooth and even passage of the spectro; consistent pressure (make sure you are not pushing down on the head); white paper at either end; and keeping the button pressed from start to finish.

After you receive a couple of errors on the same row, the software may switch to individual patch reading. In this case, the prompt will now say “Scan patch B1” instead of the previous “Scan row B.” You must position the read head over each individual patch and press the spectro’s button when prompted on screen. After completing one row of individual patches, you will be returned to full row scanning mode. This procedure allows the measurement process to go forward when the software is having trouble detecting colour boundaries in a particular row.

Having completed all rows on all pages (which may take some time), you will be prompted to save the

measurement file. Some colour management software will take you directly to the additional settings required to define a profile and then proceed with the profile creation.

4.6 The Measurement File's Role in Colour Profiling

Alan Martin

It's important to remember that the measurement file is not a profile! It provides the basic information about the colour behaviour of the device but needs some critical additional instructions and the processing of the colour management software in order to produce a colour profile that can be used for colour transformations. The measurement file is a snapshot in time of device behaviour and depends on the appropriate calibration of the device prior to the chart's creation for its accuracy.

Content of the Measurement File

```
CGATS.5
ORIGINATOR "1.1.6.3.717"
DESCRIPTOR "ColorFlow MeasurementData File"
CREATED "December 21, 2010 12:24:30 PM PST"
#Filename measurements547516763086197948.cgt
#Rows 26
#Columns 19
#This chart generated from averaging several files. This header extracted
from the first file
NUMBER_OF_FIELDS 51
BEGIN_DATA_FORMAT
SAMPLE_ID CMYK_C CMYK_M CMYK_Y CMYK_K XYZ_X XYZ_Y XYZ_Z
LAB_L LAB_A LAB_B D_RED D_GREEN D_BLUE D_VIS 380_NM
390_NM 400_NM 410_NM 420_NM 430_NM 440_NM
450_NM 460_NM 470_NM 480_NM 490_NM 500_NM
510_NM 520_NM 530_NM 540_NM 550_NM 560_NM
570_NM 580_NM 590_NM 600_NM 610_NM 620_NM
630_NM 640_NM 650_NM 660_NM 670_NM 680_NM
690_NM 700_NM 710_NM 720_NM 730_NM
END_DATA_FORMAT
NUMBER_OF_SETS 1976
BEGIN_DATA
A01 100 0 0 0 14.9593 24.264 56.2451 56.3512
-43.1895 -51.288 1.60652 0.381318 0.166744 0.739
0.7006 0.3927 0.3573 0.4336 0.5074 0.5794
0.6549 0.7106 0.7356 0.7434 0.7396 0.7272
0.7008 0.6495 0.5669 0.456 0.3352 0.2187
0.1228 0.0686 0.0436 0.0327 0.026 0.022
0.0214 0.0227 0.0256 0.0322 0.0417 0.0476
0.0458 0.0404 0.0327 0.0274 0.0312 0.0457
```

Figure 4.8 Example of measurement file

We can open the measurement file in a text editor and examine its structure to understand what information it contains (see Figure 4.8). The first section is header info and provides some basic

information about the file. This is followed by a key to the colour data that follows. The actual colour information comprises a row and column ID to identify the specific colour patch and then the numerical data that goes with the patch.

The key information is contained in the second section where the data format is laid out. This indicates what colour spaces are captured in the data for each colour patch. The first four values are CMYK; the next three are **XYZ** (a device independent colour space like Lab); the next three are Lab; then RGB; and finally there is a wavelength measurement for each of the 10 nanometer slices of the visible spectrum (380-730 nanometers; violet to red).

The CMYK values for each patch are fixed in the software, coming from either the IT8 or ECI specification. These CMYK values have to remain constant because they are our point of reference for all devices. When we read the patch with the spectro, it uses the spectral information (each of the 10 nanometer slices) to calculate the XYZ and Lab values that describe the colour appearance of the colour swatch. By matching the measured Lab value to the predetermined CMYK value supplied in the original pdf, we have the raw material to build a translation table describing the device's colour behaviour. Once we have this look up table (LUT), we can predict the Lab equivalent for any CMYK value produced on the device. Correspondingly, when we are given the Lab values from another device that we want to match, we can produce the appropriate CMYK values to provide that colour appearance.

Device Dependent Versus Device Independent Colour Spaces

We've defined CMYK, RGB, and Lab colour spaces, and we've seen how the first step in colour profiling is to measure output from a device to define a relationship between the CMYK device dependent and the Lab device independent numbers. Establishing this relationship between device dependent (RGB or CMYK) values and device independent (Lab) values is a fundamental component of the colour management process.

We call the CMYK and RGB colour spaces **device dependent** because the results we get from specific RGB or CMYK values depend entirely on the device producing them. When we tell a device to produce "50% cyan," we are saying, "Give me half of as much cyan as you can produce." Since the capacity and colour appearance of cyan from any two devices will not be the same, it should not be surprising that a specification of "half that much" will also produce colour events that do not match. Similarly, the RGB values on a monitor or projector simply specify some proportion of the full red, green, and blue signals that the device can produce. Since there is no common starting point between two monitors in terms of what a full red, green, or blue signal is, then providing the same RGB values to those two monitors will in no way provide an opportunity to generate the same colour appearance.

For RGB devices, RGB values simply identify the volume of signal for each channel. For printers, proofers, and presses the CMYK percentages dictate what proportion of pigments are deposited. The numbers associated with specific RGB and CMYK colours only have colour meaning when attached to a particular device. There is no inherent consistency between any two devices based on providing the same RGB or CMYK values.

So if the device dependent colour spaces don't give us any consistency or control of colour between devices, where can we turn? Enter the **device independent** colour spaces of Lab and XYZ. We

spoke of Lab earlier as the three-dimensional model colour science has produced to map the way we perceive colour. The Lab colour space is device independent because we do not depend on the values associated with the output of a specific device to enumerate the colour. Lab values are calculated from spectral readings in a controlled environment so that they define a consistent colour experience for any circumstance and from any device. Device independent colour is the Rosetta stone of colour management that allows us to translate from the unique dialect of colour behaviour on one device into a universal language and then back to the specific colour dialect of a different device and maintain the colour meaning.

The device independent colour spaces are known as profile connection spaces (PCS) since they provide this gateway service between the device dependent colour spaces of individual devices. Lab and XYZ are the two PCS allowed in the **ICC** specification that defines profile creation. From the examination of the measurement file, we can see how it provides the first step in establishing and tabulating a relationship between the device dependent values of a particular device's output and the corresponding device independent values that characterize the actual colour appearance associated with the output.

We've talked about the measurement file as the gateway to our profile creation, so let's see what steps remain to get us there.

4.7 Profile Creation

Alan Martin

What is a profile?

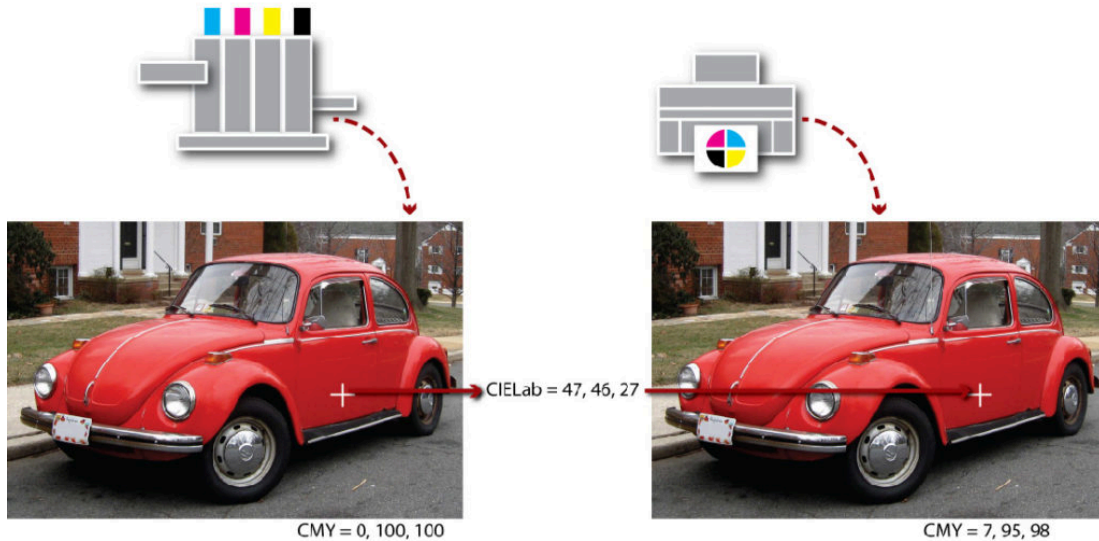


Figure 4.9 what is a profile

The measurement file contains the raw data of the relationship between the device dependent colour space of the device and the device independent colour space of the profile connection spaces (PCS). There are two additional parameters we have to provide along with this data in order for the colour management software to produce an output profile: total ink limit and black generation (see Figure 4.9).

Total Ink Limit

Total ink limit is a percentage, usually between 240% and 400%, that represents the upper threshold that the sum of the four process inks can total. Why would this change? Each device, in combination with its particular substrates (papers) and ink sets, has a different capability in terms of how much ink can be deposited. A coldset web newspaper press might be close to the lower end of 240%, while a high-end inkjet can support 100% from each of cyan, magenta, yellow, and black, and have a 400% rating. This total ink limit setting affects the colour distribution in darker colours. As the total ink limit decreases, dark colours require a higher proportion of black ink relative to CMY to stay within the ink limit percentage. With an ink limit of 360%, when black is at 90%, we still have room left for 90% of cyan, magenta, and yellow ($4 \times 90 = 360$). But if the ink limit is 240%, with black at 90%, we can't exceed 150% for the sum of the other three ($150 + 90 = 240$). Since cyan leads in a grey balance mix, we might have 60% cyan, 45% magenta, and 45% yellow ($60 + 45 + 45 = 150$). As the ink limit drops, black has to do more of the work of providing darkness for any heavy colour mix.

Black Generation

We also have to provide instruction on how the black component of the CMYK mix will be created. Remember that our subtractive primaries are CMY and that, theoretically, they provide all the colours in the visible spectrum. Where does K (black) come in? To bridge the gap between theory and real world performance, black ink does some very important things:

- It compensates for the spectral shortcomings of CMY inks: our inks are not perfect representations of what cyan, magenta, and yellow colours should be.
- It eliminates registration problems in black type: if there were no discreet black ink, every time we wanted to print black type we would have to stack cyan, magenta, and yellow on top of one another and make sure they fit perfectly.
- It helps us achieve easier neutrals: we can use black to replace the grey component of colours reducing the amount of CMY required to stay in balance on the press to provide consistent neutral tones.
- It provides cost savings: black ink is cheaper than coloured ink.
- It increases contrast: black's greater density extends the tonal range of CMYK printing and improves the appearance of the final printed piece.

Since black is an add-on to our primary CMY colour set, we must provide instructions for its creation. Typically, we specify the black start point, maximum black, and black strength.

- **Black start point:** The point at which black enters colour mixes (range of 0% to 50%). If the black start point is 20%, then tones from white to 20% will carry CMY only.
- **Maximum black:** The upper allowable percentage of black ink used in the K separation (range 70% to 100%).
- **Black strength:** The relative quantity of black versus cyan, magenta, and yellow in the neutral grey component of colours (range 5 to 75%). As the number increases, colours can contain more black.

Black strength settings are also referred to as grey component replacement (GCR) values in colour separations. These may be set as percentages or simply as light, medium, and heavy, where more equals a larger proportion of black taking the place of CMY in neutral tones. GCR is the successor to UCR (under colour removal), which only moved exactly equivalent amounts of CMY to the black channel. UCR separations exhibit a 'skeletal' black, where there is a small amount of content in the black separation. With GCR, and as the black strength increases, more and more content moves into the black channel.

Final Processing

With the measurement file available, and total ink limit and black generation specified, processing can start in the colour management software and an output profile created. It will take from two to five minutes for all the calculations to complete. You may be prompted to specify whether to save the profile in the system or user location, or both. The system location will make the profile available to

all users of the computer, while the user location will restrict it to the current user. Depending on your permissions at the computer, you may not be able to write into the system location. On an Apple OS X machine, the default location for the system is `System/Library/ColorSync/Profiles` and for the user, `Users/(userID)/Library/ColorSync/Profiles`.

Viewing Your Profile

The Mac provides a built-in tool for viewing a profile or comparing two profiles. From the Utilities folder, launch ColorSync. Select the second tab from the left and you'll see a selection window on the left and a display pane on the right. The selection window contains a list of all ColorSync aware locations on your computer. Tip open the available folders and browse to find the profile you wish to view. Select a profile and a three-dimensional representation of its **gamut** in the Lab colour space appears on the right. Use your cursor to rotate the profile through all three of its axes. From the drop-down triangle in the display pane, choose Hold for comparison. The current profile is ghosted back, and you can select a second profile to display at full strength on top of it so you can compare the relative gamuts of the two profiles.

Profile Limitations

Remember that your profile represents the behaviour of the device for particular imaging parameters such as a specific substrate, resolution (screen ruling), and ink set. If any of those parameters are significantly altered, it requires a new profile to accurately represent the colour results. For real-world applications, profiles representing related groups of parameters are employed. One profile might represent all uncoated stock at 100 to 133 lines per inch, a second for coated stock at 150 to 175 lines per inch, and a third for a high saturation ink set on glossy stock with high resolution stochastic screening.

Media Attributions

- [what is a profile](#) © IFCAR adapted by Ken Jeffrey

4.8 Beyond Output Profiling: Display, Input, and Device Link Profiles

Alan Martin

Up to this point, we have focused exclusively on the output profile in our discussion of profiling. This makes sense, since this is the predominant profile we are concerned with in graphic production. Output profiles characterize output devices such as printers, proofers, and presses, but there are other devices that we have to manage in the full spectrum of a colour-managed workflow, and these require two additional classes of **ICC profiles**: display and input.

Display profiles capture the colour characteristics of monitors, projectors, and other display devices. Input profiles characterize devices that capture images such as scanners and digital cameras.

Display Profiling

You may hear this class of profile referred to as *monitor profiling*, but the more accurate designation is *display profiling* to acknowledge the inclusion of components beyond the monitor such as the video card and video drivers. Though less commonly profiled, this class of profile encompasses digital projectors as well.

In preparation for display profiling, the cardinal rule of thumb is to make whatever adjustments we can in the actual monitor. Any software adjustments to the VideoLUT (the look up table stored on the video card) reduce the operating range of the monitor and limit the spectrum of the display. With the predominance of LCD monitors, this means that the brightness or white luminance is the only hardware adjustment available. If you see reference to black level or colour temperature settings, this harkens back to CRT monitors where these were actual hardware settings. For LCD monitors, these are software controls. For an LCD, all light comes from the backlight, which is a fluorescent array behind a diffuser, so the only monitor control is the brightness of this backlight.

Display profile software typically combines calibration and profiling. A setting called the vcgt (video card gamma type) tag in the display profile can download settings to the VideoLUT on the video card and change monitor behaviour. This is an unusual deviation from the standard protocol in colour management where the profile never alters the behaviour of the device. Calibration is used to optimize device function and characterization or profiling captures a description of device behaviour. Normally, the application of a profile should not have any influence on the device function.

Before calibration, it's essential to warm up an LCD monitor for 30 to 90 minutes. Check the full brightness. If the monitor has aged to the point where it can't achieve adequate brightness, then it should be abandoned as a candidate for profiling. Set the standard refresh rate and resolution that will be used on the monitor. If these are changed after profiling, then the profile cannot be considered accurate. Clean the screen with an appropriate gentle cleaner.

When you begin the profiling software, you will be prompted to identify your instrument. Colorimeters are often provided in display profiling packages, but most software works with standard

spectrophotometers (spectros), such as the i1 Pro.

The recommended settings to enter for the set-up phase are:

- White point: D65 (6500 K)
- Gamma: 2.2

The setting 6500 K is usually close to the native white point of an LCD monitor. You can choose Native White Point if you feel that 6500 is too far from the actual white point of your monitor. Gamma is the tone reproduction curve of the monitor. The setting 2.2 typically provides the smoothest gradients in monitor display.

Next is the choice of a patch set from small, medium, and large options. This determines the number of colour swatches that will be projected on screen for the instrument to read. The trade-off is between calibration time and colour range. Start with the small patch set and see if you are happy with the results.

To start this process, make sure the i1 is on its base plate for the instrument calibration step and then suspend the spectro in the monitor mounting strap on the monitor. The weight at one end of the strap hangs behind the monitor to counterbalance the spectro, and the i1 Pro locks into the mounting plate at the other end of the strap to keep it in place on the monitor screen. The reading aperture of the spectro should be approximately in the centre of the screen. Tip the monitor back very slightly to help the spectro sit flat of the front of the LCD.

When you tell the software to proceed, it begins projecting a series of colour swatches that the colorimeter or spectro records. As you did to produce the measurement file for your output profile, you are building a comparative table of known device values (the RGB swatches projected on the screen), with device independent values (Lab readings from the spectro) that describe their appearance. This may take from three to ten minutes. During this process, make sure that no screen saver becomes active and you keep the mouse out of the scanning area and. If you leave before the process is completed, check that the spectro is properly positioned when you return.

Once the colour patches are done, you will be prompted to name and save the profile. Make a habit of naming your profile with the date so its age can be easily checked. Saving display profiles is similar to saving output profiles, where the user chooses system and user options. With display profiles, there is no value in saving previous versions. All you are interested in is the current state of the monitor.

To see the active profile on a Mac, choose System Preferences/Displays/Color. The active profile will be highlighted at the top of the list. There is a check box toggle limiting the list so only profiles that are known to be associated with the monitor show.

Input Profiles

As mentioned, we need input profiles when we capture images. There are predominantly two types of devices associated with image capture: scanners and digital cameras. The fundamental concept in producing an input profile is that RGB device values scanned or photographed from a target are matched to device independent Lab values either provided by the target vendor or measured from the target itself.

For input profile creation, the targets always consist of two parts: a physical sequence of colour patches and a target description file (TDF) with the profile connection space (PCS) values for the swatches. The TDF accuracy varies from individually measured targets (done by you or a specialty vendor) at the high end to averaged samples from a batch run (an economical alternative).

As with output profiling, there are standard scanner target formats. We have IT8.7/1 for transmissive originals (film transparencies like slides) and the IT8.7/2 for reflective (photo print paper). These targets are available from a variety of vendors and allow you to match the material of the target to the material you will be scanning. If you will be scanning Kodachrome slides, you will want a Kodachrome IT8.7.1 target. Conversely, if your originals are Fuji photo prints, then you will want an IT8.7.2 target on the matching Fuji photo print paper.

The X-Rite ColorChecker targets are commonly used for digital cameras. There is the original ColorChecker with 24 tiles and the later digital ColorChecker SG with 140 colour tiles. The larger target can be used for initial set-up and there is a mini version of the original ColorChecker that will work in most photo shoots for an ongoing reference check.

Though scanners and digital cameras both fall into our domain of input profiling, they have some very different characteristics that we have to take into account when preparing to produce a useful profile. As with output profiling, we need to calibrate the device by stabilizing and optimizing its performance prior to capturing its colour behaviour. In order to stabilize, we need to understand the potential variables that the device presents. Scanners have a controlled light source and stable filters and typically have the option for extensive software intervention. In contrast, cameras have stable filters and moderate software controls but have the potential for hugely variable lighting conditions. The excessive variability of outdoor lighting limits useful profile creation to interior and in-studio camera work. If the lighting conditions can be controlled adequately in the studio, then colour-accurate capture can take place and colour accuracy can be maintained in the production work that follows.

Stabilizing a scanner's performance comes from turning off any automatic adjustments for colour correction:

- White and black point setting
- Removing colour casts
- Sharpening

If you can't turn these off, then the scanner is likely not a good candidate for profiling. Optimize the scanner's behaviour with an output gamma setting of 2.6 to 3.0.

Stabilizing a camera's performance comes from the appropriate lighting and capture settings. Use even lighting and full highlight and shadow exposure for target capture. For colour temperature, use grey balance for camera back devices, and white balance for colour filter arrays (CFA). Optimize the camera's bit depth retention with gamma 1.0 for raw profiling.

With calibration complete, it's time to capture the target. For a scanner:

- Mount straight
- Mask open bed areas

- Scan as high-bit tiff
- Open in Photoshop (beware of any automated conversions or profile assignments) to rotate, crop, and spot

Comparatively, for the digital camera:

- Light evenly
- Capture square
- Open in Photoshop (beware of any automated conversions or profile assignments) to rotate, crop, and spot

With the digital image in hand, we're ready for the input profile creation. Measure the commercial target with the spectro if you are not using a supplied target description file. Launch your colour management software and you will be prompted to identify the target image and the corresponding target description file. The profiling software reads the RGB values from the scanned or captured image, and the software processes the target description file and RGB measurement file to produce the input profile. File-saving options are very similar to what we have previous described for output and display profiles.

Device Link Profiles

Device link profiles are most closely related to the output class of profiles. A device link profile combines two output profiles to provide the specific conversion instructions between two particular devices. It provides the opportunity to maintain black and other separation purity (i.e., what begins as black only in the source colour space emerges as black only in the destination colour space) by removing the need for passing the colour transformation through the PCS. To define a device link, we identify a source and destination profile to our colour management software, specify the rendering intent, and provide details on how constrained the re-separation should be. By avoiding the passage into and back out of the PCS, we can very strictly control the parameters of the colour conversion. The options for conversion are:

- Full re-separation — Complete re-separation. Solid colours in the original file may not remain solid. The black generation parameters that you specify are used, which may result in using less chromatic ink and more black ink.
- CMYK integrity — All colour builds can be adjusted. The relative amount of black versus CMY will be preserved in content processed through the device link.
- Black purity only — Any colours other than the black channel (solid K, K-greys) can be adjusted.
- Colour and black purity — The same as fully constrained, but solid colours can be reduced to a tint.
- Fully constrained — Any colour made with only one or two inks will not have other inks added. Solid (100% tints) primaries and secondaries are not affected and remain solid.
- Ink optimizing — A proprietary term in the ColorFlow colour management software for applying a full re-separation with a heavy grey component replacement (GCR) algorithm.

Colour management software used to be required to preview the results of applying a device link. With the last few versions of Adobe Photoshop, a device link option has been added to the advanced dialog window of the Color Conversion menu, making device link previewing much more accessible. Currently, Photoshop only supports CMYK to CMYK device links. It does not support RGB to CMYK device links. Another alternative for viewing the results of applying a device link is to generate a virtual proof (VPS) in Kodak Prinergy with the device link specified. For details, see section 4.11 in this chapter.

With this extraordinary level of control, why don't we use device links for every colour conversion? The truth is, that with our gain in managing the colour conversion process, we sacrifice an even greater degree of flexibility. The premise of colour management and the use of profiles is that we do not have to generate a unique profile for each pairing of devices. With the power of the PCS gateway to provide the device independent colour description, we only need a single profile for each colour condition of a device and any two profiles can be positioned on either side of the PCS to provide a pathway for the colour conversion.

Where it does make sense to go to the extra trouble of generating a device link profile is a situation where a specific pairing of two devices is used over and over again, such as a proofer for a particular press condition, or to keep two presses in a shop matched for their colour output.

If we process an image from RGB to CMYK at the beginning of our production process, we gain the stability of having the image in our known CMYK space, but we surrender the flexibility of converting to the optimal CMYK space at final output. For final stage or late-binding conversion, we are dependent on the RIP environment for managing the calculations between the profile pair (see [Section 5.2](#)). A device link provides additional security in the conversion process by reducing the variability that can come with the processing application input that is part of a profile pair transformation.

4.9 A Review of the Profile Classes

Alan Martin

We've now touched on the four types or classes of profiles: display, input, output, and device link. What traits do they have in common? They are:

- Specified by ICC-defined file formats
- Contain colour tables
- Have device colour values associated with device independent colour values (PCS)
- Use a measuring device (spectrophotometer) and targets for creation
- Require a specified rendering intent
- Have standard OS library locations

There are also some unique characteristics for each profile class that help define the role they play in the overall colour management process. The display class of profiles:

- Have no separate, tangible target: the device 'is' the target
- Can affect device behaviour
- Are mostly integrated with device calibration

The input class of profiles:

- Are unidirectional: A to B table only (device values to PCS)
- Are able to exclude any external measuring (with a supplied TDF)
- Ensure that the target's job is tell us how the device 'sees' the target

Output (and device link) class of profiles:

- Use CMYK (versus RGB for display and input)
- Have black handling settings
- Have the largest and most complex colour tables
- Ensure the target's job is to tell us how the device 'makes' the target
- Provides preview capability for upstream editing

We also discussed the functions of a profile in the colour equation. The two functions are source and destination. A source profile is a profile used to convert device dependent RGB or CMYK information to a device independent colour space (Lab). A destination profile is a profile used to convert information from a device independent colour space (Lab) into a device dependent colour space of an output device

(RGB or CMYK). You can think of the source profile as the colour reference or the place from which our desired colour appearance comes. The destination profile describes the location where we are producing colour in the current pairing of devices. If we want a proofer to simulate the colour behaviour of a particular press, the press's profile is the source (the desired colour behaviour) and the profile for the proofer is the destination (our colour output).

Do not confuse a profile's class with its function; they are independent and separate characteristics. A particular output profile can assume the function of source in one colour equation and then turn around and assume the role of destination in a second. Take the example of the press above, where the press profile acted as the source. If we have multiple presses in the printing plant, and we have another press that is our master press for colour behaviour, the press profile that acted as a source for the proofer output will now function as a destination profile to align that press to the colour behaviour of the master press (the master press profile is the source profile in this pairing).

Profiles enable the two key processes of any colour managed workflow: clear communication of colour meaning and the transformation of device values to maintain colour appearance.

4.10 The Components and Purpose of a Colour Management System

Alan Martin

Our primary goal in colour management is to provide a consistent perceptual experience. As we move from device to device, within the limits of the individual device's colour gamut, our interpretation of the colour event should be the same.

As we've discussed, but it's worth repeating, we achieve that goal in two fundamental steps:

1. We give colour its meaning through device independent colour values correlated to a specific device's RGB or CMYK numbers.
2. We transform our destination device's specific values to match the perceived colour definitions of our source.

The Components

We have spoken at great length about colour profiles, but there are three additional pieces required to enact a colour-managed workflow: the profile connection space (PCS), a colour management module (CMM), and rendering intents.

The PCS provides the device independent colour definitions to which device values can be matched. The ICC specification allows the XYZ or Lab colour spaces for the PCS.

Profiles provide the look up table for the conversion of device values to PCS and vice versa. Any conversion requires two profiles (or a device link into which two profiles have been merged).

The CMM is the software engine that actually does the conversion. It lives in a product like Adobe Photoshop or Kodak Prinergy, where file processing takes place. The CMM provides two major benefits: it reduces profile size by doing the interpolation in colour calculations and compensates for shortcomings in the Lab colour space. The CMM does the heavy lifting by providing the computation of the conversion. For consistency, it is best to keep to a common CMM as much as possible. The Adobe Color Engine or ACE is the CMM seen referenced in the Color Setup dialog window of the Adobe Creative products.

Rendering intents are the instructions for dealing with out-of-gamut colours (see Figure 4.10). They are user-selectable controls to define colour rendition when you move colour from one device to another. There are four types of rendering intents: perceptual, saturation, relative colorimetric, and absolute colorimetric. Each intent represents a different colour conversion compromise, resulting in a different gamut mapping style.

Rendering intents

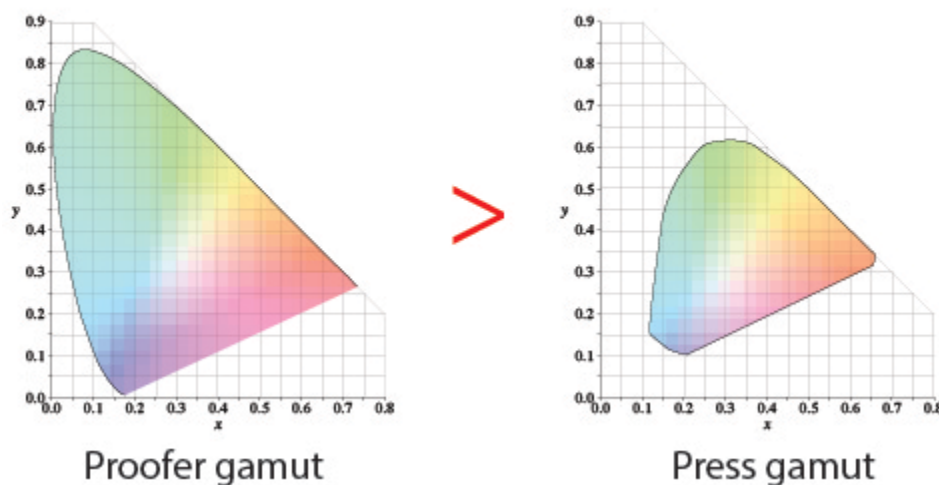


Figure 4.10

Perceptual and saturation intents use gamut compression, where the overall gamut space is adjusted. Relative and absolute colorimetric intents use gamut clipping, where colour matching is maintained throughout the available gamut, and out-of-gamut colours are moved to the available extremes of the destination gamut.

The perceptual intent is used mainly for RGB to CMYK transformations, which are typically image conversions. Since we are moving from a larger gamut (RGB) to a smaller gamut (CMYK), it makes sense to employ a rendering intent that preserves the overall relationship rather than one that emphasizes one-to-one colour matching within the gamut.

The saturation intent is the least relevant for colour-managed workflows. When you use this intent, colour saturation is preserved as much as possible at the expense of hue and luminance. The result is a bad colour match, but the vividness of pure colours is preserved. This intent is usually used for documents such as presentations, charts, and diagrams, but not for graphic arts jobs.

The two colorimetric intents, relative and absolute, are closely related. They are both used for CMYK to CMYK conversions where the gamuts of source and destination are closely matched or the destination is larger (typical of a proofer compared to the press it is matching). They emphasize exact colour matching for in-gamut colours and clip out-of-gamut colours.

The only difference between the two colorimetric rendering intents is in white point handling. The absolute intent pays attention to the colour of white in the source and reproduces that in the destination. Think of newspaper printing where the whitest colour is the paper that has a dull and beige tone. With an absolute rendering intent, a proofer matching the newspaper would add that beige colour to all of the white areas of the proof. This matching of white destination to white source colour is not usually necessary due to the chromatic adaptation or colour constancy that we discussed earlier. We have a built-in mechanism for adjusting to judge the overall colour relationship independent of the appearance of white. For this reason, the relative colorimetric intent is used most of the time and the white of the destination is not adjusted to simulate the white point of the source.

With all of the pieces of the colour management process clearly delineated, we can put them to use in our standard graphic arts workflow applications.

Attribution

Figure 4.10

Image modified from: [Comparison of some RGB and CMYK colour gamut](#) by BenRG and cmglee is used under a [CC BY SA 3.0](#) license.

4.11 Applying Colour Management in the Adobe Creative and Kodak Prinergy Software

Alan Martin

Colour management comes into play at two primary points in the print production workflow: during file creation with authoring tools like the Adobe Creative applications (Photoshop, InDesign, Illustrator), and then when the file is processed for output with a workflow software program such as Kodak Prinergy. Let's examine the details in these most widely used software tools to provide concrete examples.

Colour Set-up in the Adobe Creative Applications

The primary tool for colour management in the Adobe products is the Color Settings dialog under the Edit menu. Fortunately, these settings can be shared across all of the Adobe applications to coordinate a consistent delivery of colour strategy. Define your settings in Photoshop, as this is the application with the largest number of options, to guarantee that all possible options have been set to your choices.

Launch Photoshop and, from the Edit menu, choose Color Settings. There are three main sections to the dialog window: Working Spaces, Color Management Policies, and Conversion Options. Change the Settings option above the Working Spaces panel to North American Prepress 2. This applies a set of defaults that are optimal for a print production workflow.

Working Spaces is Adobe's name for default profiles. These are the profiles that will be used if no other information is available. If you open a file that is *untagged* (the terminology for a document that has no profile attached to it), the profile listed for the colour space matching the file will be *assumed* and used as long as the file is open. It will not persist with the file once the file is closed. If you create a new file in the application, the profile listed will be *assigned* and the profile reference will move forward with the file.

Let's review and clarify the terminology associated with describing the status of a colour profile relative to a particular document or file. A file that has a profile is referred to as *tagged* while one without profile is *untagged*. A tagged document can have one of two relationships with its colour profile. The colour profile can be *embedded* or *assigned*. An embedded profile is actually written into the file content. This increases the file size, but guarantees that the desired profile will be available. For an assigned profile, only a reference to the profile is contained in the document. File size is reduced, but access to the profile depends on the application and environment processing the object. You can think of an *assumed* profile as a temporary assignment that will only last as long as the file is open.

For Working Spaces options, the RGB default of Adobe RGB (1998) that comes with the North American Prepress 2 setting is a perceptually even RGB space, which makes it better for editing and a good choice. The CMYK field is where you should choose a profile specific to the final output device if it is known. The SWOP profile is a reasonable fallback and is commonly used as the industry standard

for generic work. Be aware that choosing SWOP will constrain the gamut to the capability of a web offset print condition.

The list of profiles available for selection comes from the various ColorSync aware folders that we have previously discussed. Priority is given to profiles in the Library/Application Support/Adobe/Color/Profiles/Recommended folder, and these profiles are listed first. If you have a profile that you wish to give prominence to for selection, place it in this folder.

The Color Management Policies subsection controls behaviour when opening or creating documents and when moving objects between documents. There are three options for each of the available colour space settings: Off, Preserve Embedded, or Convert to Working.

The choice of Off is the most misleading, because we can't actually turn colour management off: there is always an assumed profile if no other information is presented. With Off, copy and paste of an object moves tint values: a 50% cyan value from the originating document lands as 50% cyan in the destination document.

Preserve Embedded does what it says and maintains what's in place. New documents use the Working Space profile and become tagged. An untagged file assumes the working space profile but stays untagged. If you copy and paste native RGB objects, they are converted. If you copy and paste native CMYK objects, the tint values are maintained.

Our final choice for colour management policy is potentially the most dangerous. Convert to Working converts tagged documents using the existing profile as a source profile and the Working Space profile as the destination. If you do not have the Alert check boxes ticked, this can happen without your awareness. For an untagged document, it assumes the Working Space profile. Copy and pasting RGB or CMYK objects always converts to preserve appearance (changes the tint values).

After reviewing the choices, the recommendation for Color Management Policies is Preserve Embedded, and make sure all Alert boxes are checked. This allows you to confirm that any action is what you actually want before proceeding.

The last section of the Color Settings dialog window is the Conversion Options. The Engine option refers to the colour management module (CMM) that will be used for calculations in the colour conversions. The default choice of the Adobe Color Engine is good for maintaining consistency. Here we have as well the Rendering Intent entry, which will function as a default unless an alternate intent is specified in any dialog. Relative Colorimetric is a reasonable choice unless you know that almost all of your conversions will be RGB to CMYK for which Perceptual is the appropriate intent option. Always check Use Black Point Compensation. This maps the black point source to the black point destination, avoiding any clipping or flattening of the darkest colours and maintains the full dynamic range.

Now that we have all of our working parameters correctly defined, we can OK the Color Settings dialog and look at the basic mechanism for using colour profiles in the Adobe Creative applications. There are two actions we can invoke from the Edit menu to apply colour profiles: Assign Profile and Convert to Profile.

Assign Profile allows us to select a source profile for the open document. This action will replace the existing profile for a tagged document or provide a new reference for an untagged file. To have the

association persist, you must save the file and check the option to embed the current colour profile. Assigning a profile will change the onscreen appearance of the file but not alter any of the file's tint values (colour data). We are simply instructing the computer on how the original CMYK or RGB values would look if they are coming from our new source (described in the look up table of the new colour profile).

Convert to Profile is an immediate and irreversible (once the file is saved) transformation of the document's tint values. The assigned profile is used as a source and the user selects a destination profile and rendering intent. The conversion takes place and the file now has new RGB or CMYK numbers as a result. If you use the advanced dialog to specify a device link profile, then the currently assigned source profile is ignored for the calculations since the device link contains information for both the source and destination conditions.

Both the Assign and Convert dialog windows come with a Preview check box that will allow you to toggle between the before and after state to visually validate your choices and experiment with the effects of choosing different rendering intents.

Assessing the Effect of a Colour Profile

Once the profile is applied, what should we be looking for? Both on screen and when comparing hard-copy (printed) samples, there are specific areas of the image that should be checked. There is also industry-specific language used in describing colour appearance that it is helpful to be familiar with. The areas of the image to pay special attention to are saturated colours, flesh tones, neutrals, and the highlights. Proof and print sample sheets will have four or five images that emphasize these areas along with tone ramps in the process and overprint colours. Focusing on these areas of interest will make it easiest to identify variation when checking for colour matching.

The terminology that is often employed is *colour cast*, to indicate a shift toward a particular colour; *heaviness*, to suggest excessive tone (particularly in the highlights); *dirty*, to specify too much complementary colour resulting in greying; and *flat*, to describe a lack of contrast and/or saturation. Knowing the terminology will help you understand the comments your co-workers may make and will help remind you of the types of analysis you should be doing.

Additional Colour Tools in Adobe Acrobat

In addition to the fundamental profile handling procedures described above, there are several powerful and useful colour tools in Adobe Acrobat that can be used once you have exported your desktop file to a PDF. These are found among the Print Production Tools in the Acrobat Tools menu. Two are of particular note: Convert Colors and Output Preview.

Convert Colors allows you to convert colour spaces, such as changing RGB content to CMYK. It also enables transforming *spot colours* (such as Pantone) to CMYK. In addition, if the file incorrectly contains multiple instances of a spot colour that should all appear together on the same printing plate (i.e., Pantone 283 and *special blue*), they can be linked to behave as a single entry on the colour palette.

Output Preview does not apply any changes to the file, but is an extraordinarily powerful review

mechanism. It enables you to confirm that colour elements in the file are as they should be before you commit to the expensive step of actual output. With Output Preview, you can turn individual separations on and off to check overprints and knockouts; check the separation list to confirm which elements are attached to each separation; identify the colour space of each object; and even highlight any area that exceeds your threshold for total ink coverage.

Profile Use in Kodak Prinergy

The final topic in our exploration of colour management in graphic technologies is an example of the application of colour management in a print production workflow. We'll use one of the predominant workflow applications, Kodak Prinergy, as a model.

The processing instructions for file handling in Prinergy are contained in a *process template*. Input files are 'refined' to PDF in the Prinergy workflow and an important portion of the refining process is the instructions relating to colour conversions. In addition, we have process templates for output both to proof and final output. These templates also contain colour control options. For both *refine* and *output* process templates, the colour management information is contained in the Match Colors box of the Color Convert subsection.

Prinergy offers a comprehensive colour management application of its own called ColorFlow. There is a check box in Color Convert to turn on ColorFlow awareness and pass all of the colour management decisions to what has been predefined in ColorFlow. Discussing the structure and functional logic of ColorFlow is beyond the scope of this text. To use Prinergy as a more generic workflow example, we'll uncheck the ColorFlow option and turn off the integration.

The standard location to store profiles for use by Prinergy is \Prinergy\ CreoAraxi\data\ICC-Profiles. Profiles are not immediately available from this location in Prinergy's drop-down menus, but can be browsed to if placed in job-specific subfolders.

Let's look at the Match Colors section of the refine process template. With ColorFlow integration turned off, the entry fields under Assign Input Device Conditions become available. If you check Override Embedded Profiles, then profiles that are checked on in the Assign Input Device Conditions section will replace all existing profiles in the files being processed. Notice that there is a very granular level of control, with independent entries for CMYK images, CMYK graphics, RGB images, and RGB graphics. If you specify a device link profile, it will override any tagged profile whether or not Override Embedded Profiles is checked.

Convert to Destination is where you indicate the destination profile. This will only be used for instances not covered by a device link in the assign section. Remember that any device link contains both source and destination information. Beneath the Convert box is a box for selecting rendering intents. Entries are only available for the options that were checked on under Assign Input Device Conditions. The default entry is Perceptual since most input files will require image conversions from larger colour gamuts.

For output process templates in Prinergy, the options are very similar to what has been described above. We typically use colour management for output to proofs, either single page or imposed. There is a separate ColorFlow section to uncheck to enable the more traditional colour management approach. In the Match Colors box, Match Colors in Page Content must be checked on for any colour profiles to

be applied. Also, you must select one of the following radio buttons—As Defined Below, If Not Set in Refining, or Exactly as Defined Below— so you will be able to choose a profile in the Input Device Conditions box. Since all content will now be in the CMYK space from the refine process template, there are no longer independent options for RGB, graphics and images: only one source or device link can be specified. The rendering intent is entered in the Rendering Intent field. The destination profile (usually the proofer profile) goes in the Device Condition box. Once again, this destination profile will be ignored if a device link has been chosen for the source.

By following the steps described, the workflow application user can produce predictable and accurate colour reproduction results through both the file processing and output steps of any print production workflow.

4.12 Summary

Alan Martin

In essence, colour management is a translation process. The tools and precepts of colour science give us the lexicon to populate the dictionaries of each of the devices we use in our graphic technology workflow. Our device's dictionary is the colour profile we generate with the help of a colour target, an instrument to measure the target and colour management software to process the measurements.

Since the device's dictionary (colour profile) defines the specific RGB or CMYK values of that device in a device independent colour language, we have a conduit between any two devices. By aligning the device independent values between the two devices, we can translate from the device dependent values of our source to the new RGB or CMYK values at our destination to provide a common colour experience.

With an understanding of how to configure our standard graphic arts applications to effectively use our device's profiles, we can make successful colour translations happen in our real-world production scenarios. Successful colour translations provide the improved productivity that comes with predictability and confidence in process control.

Questions to consider after completing this chapter:

1. What are the three components of the colour event?
2. How does visible light relate to the electromagnetic spectrum?
3. How does the zone theory of optical systems resolve the apparent incompatibility of trichromacy and opponency?
4. What is the importance of the Lab colour space?
5. Define Delta E.
6. Which of RGB, CMYK, and Lab are device dependent colour spaces, and which are device independent colour spaces?
7. How does a spectrophotometer work?
8. What is the purpose of a colour target?
9. What Mac OS utility can be used to view colour profiles?
10. How does a measurement file relate to an ICC profile?
11. What is the vcgt tag in a display profile?
12. Name the common characteristics of output, display, and input profiles.
13. What characteristics are unique to each of output, display, and input profiles?

14. Working Spaces serve what purpose in Adobe's Color Setup dialog?
15. Which Acrobat tool allows for the merging of spot colours?
16. How do we make a device link profile?
17. Where is a device link profile used in Prinergy's output process template?

References

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Suggested Readings

Fraser, B., Murphy, C., & Bunting, F. (2004). *Real world color management* (2nd ed.). Berkeley, CA: Peachpit Press.

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Chapter 5. Pre-press

5.1 Introduction

Wayne Collins

Learning Objectives

- Explain why raster image processing requires so much data for print imaging
- Compare resolutions required for digital media and print media
- Compare and contrast the positive and negative attributes between using process and spot colours
- Discuss why Pantone colours are more accurate on a printed swatch than on screen.
- List a number of different industry standard spot colour systems
- Describe trapping issues that occur when adjacent colours are imaged independently
- Analyze different imaging technologies for trapping requirements
- Interpret how black ink is to be used in overprint and boost situations
- Define transparency within the context of prepress workflow management
- Differentiate between flattening transparency on the desktop, or at raster image processing
- Describe the most common press sheet imposition styles
- Analyze different binding styles to select the correct imposition required
- Identify opportunities for nesting multiple images to save materials
- Explain the importance of preflight within the context of pre-press workflow

North America's fifth-largest manufacturing sector is graphic communications technologies. We can become aware of just how huge this industry is by listing all the manufactured images we see in our day. Your list might include the morning paper or magazine you read, the graphic on the side of the bus you ride to work, and the labels on the grocery shelf where you select your evening meal. Increasingly, more of the graphics that are driving that massive industry are produced with computer graphics software on personal computers. Most of the graphics software used to create the images for reproduction is designed to create images for electronic media — primarily the Internet. Computer graphics designers are not aware of, or concerned with, optimizing their designs for the manufacturing process they are driving. This problem is a root cause of less profitability in most sectors of the graphic communications industry. To tackle this problem, we must become aware of all that happens to a computer graphic from the time it leaves the picture created on the computer screen to the image on the label on the package on the grocery shelf, or the photograph on the side of a bus.

We must first distinguish between traditional pre-press technologies and the pre-imaging processes that are relevant in today's graphic communications industry. Pre-press processes are different from

the way we process images for electrophotographic imaging or imaging with an inkjet engine. We must also distinguish between preparing images for a lithographic press and a flexographic press. Electrophotography and inkjet are growing technologies used to produce customized — or individualized — communications materials. Lithography and flexography are used to manufacture mass-produced media products. These four imaging processes are the core imaging technologies that reproduce 90% of the images produced in the graphic communications industry.

Many graphic designers are not aware of what must happen to the computer graphics they produce in order to ready them for manufacturing reproduction. Their experience is limited to hitting ‘command P’ and their computer graphic magically transforming the illuminated masterpiece on their Apple Cinema Display, to the disappointing rendition that appears on the tray of their inkjet printer. Most of the pre-imaging processes are automated in software functions that are built into the print driver, so people are not aware of how a computer graphic must be prepared for an imaging device. Since more and more of the images produced through inkjet, electrophotography, lithography and flexography start their lives as computer graphics, it is important to understand these pre-imaging processes to properly design computer graphics for the manufacturing process.

This chapter will analyze six pre-imaging processes in detail, and describe how they are altered to prepare computer graphics differently for each of the four imaging technologies. We will refer back to the computer graphic design/creation process to outline how graphics could be altered so they can be more effectively reproduced with each imaging technology. This is the missing link in the graphic communications business in today’s marketplace. Designers create computer graphics in software that is increasingly designed for electronic image creation. They do not realize that the same graphic they created for a home page on the Internet should not be used for the cover of a book. They email the image to a lithographic print production facility and the pre-press department of that facility does hand springs trying to alter the image to work on their sheet-fed presses. This adds time and cost to the job that is usually buried. The designer never gets feedback on how the design could be altered to be more effective for lithographic production.

When pre-press was a computer-to-film process, there were two important factors that ensured designers got this critical feedback. The software for computer graphic production was specialized for print creation and content could be photographed or computer-generated and combined on film. Computer graphic designers knew their image was only going to be used for the cover of a book and created it appropriately. They also had to submit their computer graphic to a graphic communications production facility that was separate from the lithographic print facility. If there were extra costs incurred to prepare the computer graphic for a lithographic press, the designer was informed and invoiced for the extra work the image preparation entailed. So the designers were working with computer graphic software that would not let them create imagery that was not appropriate for print production, and if they did dream up an image that did not work well, they were immediately informed of the extra costs they were incurring.

In the 21st-century marketplace, all graphics that drive our four primary imaging technologies are created on the computer. Computer graphics software is designed to create effects for images that will stay in the electronic media: web, broadcast, digital film, and hand-held communication technologies. Pre-imaging processes are either automated or a part of the print manufacturing business and usually considered the painful part of feeding the print machinery that no one wants to talk about. So computer graphic designers drive software that lets them create outrageous images for imaging reproduction manufacture. They are less concerned about the ‘print’ part of a media campaign, and manufacturers

are hesitant to inform them that their designs incurred extra costs to reproduce. We can contribute to a solution to this problem by analyzing all of the pre-imaging processes for each type of reproduction manufacture and link them back to the computer graphic design software.

We will examine six pre-imaging processes:

- Raster image processing (RIP) technologies that are common to all four manufacturing processes
- Colour management for repeatability, as a part of the RIP process
- Trapping to lithographic and flexographic specifications
- Transparency, which is a visual effect that has a great impact on imaging
- Imposition for pre-RIP and post-RIP for media utilization
- Preflight analysis and automation for computer file creation

5.2 Raster Image Processing

Wayne Collins

The raster image processor (RIP) is the core technology that does the computational work to convert the broad range of data we use to create a computer graphic into the one-bit data that drives a physical imaging device. Let's examine the creation of a single character of the alphabet, or **glyph**. A font file delivers PostScript language to the RIP that describes a series of points and **vector** curves between those points to outline the letter A. The RIP has a matrix grid at the resolution of the output device and computes which spots on the grid get turned on and which are turned off to create the shape of that letter A on the output device. The spots on the grid can only be turned on or off — which is how binary data is encoded — either as 0 or 1. The grid then acts as a switch to turn a mechanical part of the imaging engine on or off.

With computer-to-plate technology for lithographic printing plate production, a laser is used to expose an emulsion on a printing plate. Most plate-setters have a resolution of 2,000 to 3,000 lspi (laser spots per inch). The RIP calculates all the spots that must be turned 'on' to create the graphic that will be imaged on the printing plate. If the image fills a typical sheet-fed press, it is (30 inches x 3,000 lspi) x (40 inches x 3,000 lspi) = 1.08 trillion, which takes 10 gigabytes of computer memory to store and transfer. A printing plate for flexographic print production is created by turning a laser on and off at a slightly lower resolution. An inkjet printer uses the same RIP process to deliver the same one-bit data to each inkjet nozzle for each colour of ink in the printer. Most inkjet engines have a resolution between 600 and 1,200 spots per inch — so the matrix grid is smaller — but if it is an eight-colour printer, the data for all eight nozzles must be synchronized and delivered simultaneously. An electrophotographic (Xerox) printer usually has a resolution similar to an inkjet printer and utilizes a similar RIP process to change a grid of electrostatic charges to positive or negative on an electrostatic drum that is the maximum media size the machine can image. Each colour in the printer has a separate **raster image** that charges the drum in the right spot to attract that colour of toner to that exact location. The data for each colour must be synchronized for simultaneous delivery. The data must refresh the charge on the drum after each print in order to pick up new toner. That is a very important fact to remember when we talk about personalizing print with variable data later in this chapter.

This basic understanding of RIP's place in a computer graphic workflow is essential to understanding how to prepare files for, and manage, RIP resources. It is also essential in solving some of the common problems we see in various RIPs. When we compare the two mass production imaging technologies, lithography and flexography, to the personalized imaging technologies, electrophotography and inkjet, we can identify some core similarities. In lithography and flexography, a high-powered laser is used to alter a physical emulsion that is durable and finely grained enough to let the laser image a spot that is one three-thousandth of an inch without affecting the spot of equal size beside it. We can reliably image that spot in a serif of a glyph set in one point type or a hair on a face in a photo that is imaged with a 5 micron frequency modulated (FM) screening pattern. The mass production technology assures us that the first print will be identical to the millionth print.

The raster grid of one-bit data that the RIP produces must be delivered to the imaging drum or the inkjet

nozzle for every image that is produced with an inkjet printer or an electrophotographic engine. This is what allows us to make every image different and personalize it for the person we are delivering the image to. It also makes the process slower and less reliable for mass production. The RIP produces a lower resolution raster grid, so the detail in photos and letter shapes is not as precise. We can have a RIP discard data if we have too much detail for the raster grid it is producing. The RIP does not do a good job of interpolating more data to produce additional detail in a photo or graphic shape if that information is missing to begin with.

That brings us to examining the resources that a RIP must have to produce a perfect raster for every graphic shape it renders, and for every colour being reproduced. The resource a RIP consumes is data. In the graphic communications industry, we should all wear T-shirts that say ‘Pigs for data!’ just to distinguish us from our media colleagues who are producing computer graphics for electronic media. If we think of a RIP as an auto assembly line we are feeding with parts, in the form of files in different data formats, it will help us understand how to make a RIP more efficient. If we feed too many parts into the assembly line, it is easier to throw some parts away than it is to stop and recreate a part that is missing. If we feed the assembly line with five times as many parts needed to make a car, it is still more efficient to throw parts away than it is to stop and recreate a missing part.

If we apply this analogy to image resolution, we can point to examples where designers regularly repurpose images from a web page to use on a book cover or poster print. The web page needs to deliver the photo across a network quickly and only needs to fill a typical computer screen with enough detail to represent the photo. A typical photo resolution to do that properly is 72 pixels per inch. Now remember that the raster grid for a lithographic printing press that will print the book cover is 3,000 lspi. Our RIP needs much more data than the web page image contains! Most of the photos we are reproducing today are captured with electronic devices — digital cameras, phones, scanners, or hand-held devices. Most store the data with some kind of compression to reduce the data the device has to store and transfer. Those efficiencies stop at the RIP though, as this computational engine has to decompress the data before applying it to the graphic page it is rasterizing. It is like breaking a steering wheel down to wires, bolts, and plastic sleeves that efficiently fit into a one-inch-square shipping package, and putting this ‘IKEA furniture’ steering wheel onto an auto production line for the assembler to deal with in two-point-two minutes!

On the other hand, we can capture a digital photo at 6,000 pixels per inch (ppi) and use it on a page scaled to half the original dimension. That is like packing a finished steering wheel in 10 yards of bubble wrap and setting it on the assembly line in a wooden shipping crate! So it is important for designers to pay attention to the resolution of the final imaging device to determine the resolution that the RIP will produce from the graphic files it is processing.

Halftone Screening

It is important to stop here for a discussion about halftone screening that a RIP applies to photographs and graphics to represent grey levels or tonal values in a graphic element. We described how the RIP makes a grid of one-bit data, but graphics are not just black and white — they have tonal values from 0% (nothing) printing to 100% (solid) printing. If we want to render the tonal values in-between in half percent increments, we need 200 addresses to record the different values. Computer data is recorded in bits, two values (on and off), and bytes, which are eight bits strung together in one switch. The number

of values a byte can record is 256 — the number of combinations of on and off that the eight bits in the byte can express. A computer records a byte of data for each primary colour (red, green, and blue — RGB) for each detail in a photo, as a *pixel* (picture element), which controls the phosphors on electronic imaging devices. A RIP must convert the eight-bit RGB values into the four primary printing ink colours (cyan magenta, yellow, and black — CMYK). There are two distinct steps here: (1) conversion from RGB to CMYK continuous tone data (24 bit RGB to 32 bit CMYK); and (2) continuous tone to one-bit screening algorithms. We have to be in the output colour space before we can apply the one-bit conversion. It converts the eight-bit tonal values into one-bit data by dividing the area into cells that can render different sizes and shapes of dots by turning spots on and off in the cell. A cell with a grid that is 10 laser spots wide by 10 laser spots deep can render different 100 dot sizes (10 x 10), from 1% to 99%, by turning on more and more of the laser spots to print. If we think back to the plate-setter for lithographic platemaking, we know it is capable of firing the laser 2,000 to 3,000 times per inch. If the cells making up our printing dots are 10 spots square, we can make dot sizes that have a resolution of 200 to 300 halftone screened dots in one inch. A RIP has screening (dot cell creation) algorithms that convert the data delivered in RGB pixels at 300 pixels per inch into clusters of laser spots (dots) for each printing primary colour (CMYK).

This description of how a RIP processes photographic data from a digital camera can help us understand why it is important to capture and deliver enough resolution to the RIP. It must develop a detailed representation of the photo in a halftone screened dot that utilizes all of the laser spots available. The basic rule is: Required PPI = 2 x lines per inch (LPI) at final size. So if you need to print something at 175 lines per inch, it must have a resolution of 350 pixels per inch at the final scaled size of the reproduction. Use this rule if you are not given explicit direction by your print service provider. You can use a default of 400 ppi for FM screening where lpi is not relevant.

WYSIWYG

It is important to know that each time we view a computer graphic on our computer screen, it is imaging the screen through a RIP process. The RIP can change from one software program to another. This is why some PDF files look different when you open them in the Preview program supplied with an Apple operating system than they do when opened in Adobe Acrobat. The graphics are being processed through two different RIPs. The same thing can happen when the image is processed through two different printers. The challenge is to consistently predict what the printed image will look like by viewing it on the computer screen. We use the acronym **WYSIWYG** (what you see is what you get) to refer to imagery that will reproduce consistently on any output device. Designers have faced three significant challenges in trying to achieve WYSIWYG since the advent of desktop publishing in the early 1980s.

The first challenge was imaging typography with PostScript fonts. The second was colour managing computer screens and output devices with ICC profiles. The third and current challenge is in imaging transparent effects predictably from one output device to another. Font problems are still the most common cause of error in processing client documents for all imaging technologies. Let's look at that problem in depth before addressing the other two challenges in achieving WYSIWYG.

Font Management

The development of the PostScript computer language was pioneered by Adobe in creating the first device independent font files. This invention let consumers typeset their own documents on personal computers and image their documents on laser printers at various resolutions. To achieve WYSIWYG on personal computer screens, the font files needed two parts: screen fonts and printer fonts. Screen fonts were bitmaps that imaged the letter shapes (glyphs) on the computer screen. Printer fonts were vector descriptions, written in PostScript code, that had to be processed by a RIP at the resolution of the printer. The glyphs looked significantly different when imaged on a 100 dpi laser printer than they did on a 600 dpi printer, and both were quite different from what graphic artists/typographers saw on their computer screen. That was not surprising since the shapes were imaged by completely different computer files — one raster, one vector — through different RIP processors, on very different devices. Many graphic designers still do not realize that when they use Adobe type font architecture they must provide both the raster screen font and the vector PostScript font to another computer if they want the document that utilizes that font to process through the RIP properly. This was such a common problem with the first users of Adobe fonts that Microsoft made it the first problem they solved when developing TrueType font architecture to compete with Adobe fonts. TrueType fonts still contained bitmap data to draw the glyphs on a computer screen, and PostScript vector data to deliver to a RIP on a print engine. The TrueType font file is a single file, though, that contains both raster and vector data. TrueType fonts became widely distributed with all Microsoft software. Microsoft also shared the specifications for TrueType font architecture so users could create and distribute their own fonts. The problems with the keeping screen font files with printer font files went away when graphics creators used TrueType fonts.

The quality of the fonts took a nose dive as more people developed and distributed their own font files, with no knowledge of what makes a good font, and what can create havoc in a RIP. Today, there are thousands of free TrueType fonts available for downloading from a multitude of websites. So how does a designer identify a good font from a bad font? The easiest way is to set some complicated glyphs in a program like Adobe InDesign or Illustrator and use a ‘convert to outlines’ function in the program. This will show the nodes and bezier curves that create the glyph. If there are many nodes with small, straight line segments between them, the font may cause problems in a RIP. Remember that PostScript was meant to be a scalable device independent programming language. If the poorly made glyphs are scaled too small, the RIP has to calculate too many points from the node positions and ends up eliminating many points that are finer than the resolution of the raster image. On the other hand, if the glyph is scaled too large, the straight lines between points make the smooth curve shapes square and chopped-looking. These fonts are usually created by hand drawing the letter shapes, scanning the drawings, and auto tracing them in a program like Illustrator. The ‘convert to outlines’ test reveals the auto tracing right away, and it is a good idea to search out another font for a similar typeface from a more reputable font foundry.

Another good test is to look at the **kerning** values that are programmed into the font file. Kerning pairs are glyph shapes that need the space between them tightened up (decreased) when they appear together. A good font usually has 600 to 800 kerning pair values programmed into its file. The most common pair that needs kerning is an upper case ‘T’ paired with a lower case ‘o’ (To). The ‘o’ glyph must be tucked under the crossbar of the T, which is done by programming a negative letter space in the font file to have less **escapement** when the imaging engine moves from rendering the first shape to when it starts imaging the second shape. If we set the letter pair, and put the curser in the space between them, a

negative kerning value should appear in the kerning tool. If no kerning value appears, the font is usually a poor one and will cause spacing problems in the document it is used in.

Another common problem occurred when combining Adobe Type 1 fonts with TrueType fonts in the same document. Adobe was the creator of the PostScript programming language, and although it was easy enough to copy its code and create similar fonts, Adobe has maintained fairly tight control over licensing the PostScript interpreting engines that determine how the PostScript code is rendered through a raster image processor. The RIP stores the glyph shapes in a font file in a matrix that can be speedily accessed when rendering the glyphs. Each glyph is assigned an address in the matrix, and each font matrix has a unique number assigned to it so that the RIP can assign a unique rendering matrix. Adobe could keep track of its own font identification numbers but could not control the font IDs that were assigned to TrueType fonts. If a TrueType font had the same font ID number as the Adobe Type 1 font used in a document, the RIP would establish the glyph matrix from the first font it processed and use the same matrix for the other font. So documents were rendered with one font instead of two, and the glyphs, word spacing, line endings, and page breaks were all affected and rendered incorrectly. For the most part, this problem has been sorted out with the creation of a central registry for font ID numbers; however, there are still older TrueType font files out there in the Internet universe that will generate font ID conflicts in a RIP.

Adobe, Apple, and Microsoft all continued to compete for control of the desktop publishing market by trying to improve font architectures, and, as a result, many confusing systems evolved and were discarded when they caused more problems in the RIPs than they solved. There is a common font error that still causes problems when designers use Adobe Type 1 fonts or TrueType fonts. Most of these fonts only have eight-bit addressing and so can only contain 256 glyphs. A separate font file is needed to set a bold or italic version of the typeface. Some page layout programs will allow the designer to apply bold or italic attributes to the glyphs, and artificially render the bold or italic shapes in the document on the computer screen. When the document is processed in the RIP, if the font that contains the bold or italic glyphs is not present, the RIP either does not apply the attribute, or substitutes a default font (usually Courier) to alert proofreaders that there is a font error in the document. The line endings and page breaks are affected by the error — and the printing plate, signage, or printout generated becomes garbage at great expense to the industry.

To solve this problem, Adobe actually cooperated with Microsoft and Apple in the development of a new font architecture. OpenType fonts have unicode addressing, which allows them to contain thousands of glyphs. Entire typeface families can be linked together to let designers seamlessly apply multiple attributes such as condensed bold italic to the typeface, and have the RIP process the document very closely to what typesetters see on their computer screen. PostScript is also the internal language of most page layout software, so the same OpenType font files are used to rasterize the glyphs to screen as the printer's RIP is using to generate the final output. There can be significant differences in the RIP software, but many font issues are solved by using OpenType fonts for document creation.

One common font error still persists in the graphic communications industry that acutely underlines the difference between creating a document on a single user's computer but processing it through an imaging manufacturer's workstation. Designers usually own a specific set of fonts that they use for all the documents they create. The manufacturer tries to use the exact font file each designer supplies with the document. The problem once again involves the font ID number, as each font file activated in an operating system is cached in RAM memory to make the RIP-to-screen process faster. So the font

files the manufacturer receives can be different versions of the same font created at different times, but assigned the same font ID number. For example, one designer uses a 1995 version of Adobe's Helvetica typeface and another uses a 2015 version, but the two typefaces have the same font ID number. The manufacturer's operating system will not overwrite the first font matrix it cached in RAM, so it is the first font file that renders the document on screen and will be sent down to the RIP. Usually, there are few noticeable changes in the glyph shapes. But it is common for font foundries to adjust kerning values between letter pairs from one version to the next. So if a manufacturer has the wrong version of the font file cached in RAM, a document can have line-ending changes and page reflows. This is a hard error to catch. There are programs and routines the imaging manufacturer can implement to clear the RAM cache, but many times, more 'garbage' is generated before the problem is diagnosed. Modern PDF creation usually includes the production of a uniquely tagged font subset package that only contains the glyphs used in the document. The unique font subset ID avoids the potential for font ID conflicts.

Managing fonts on a single user computer has its own challenges, and Apple has included Font Book with its operating systems to help manage fonts in applications on an Apple OS. Adobe offers Typekit with its latest Creative Cloud software to provide greater access to a wide variety of typefaces from a reliable foundry. Third-party font management programs like Suitcase Fusion also help graphic artists manage their fonts for repurposing their documents effectively. It is still the responsibility of individual operators to know how to use the fonts in their documents. They should also make sure that the fonts are licensed and packaged to deliver to other computer systems so that they can drive many different RIPs on a wide variety of output devices.

5.3 Colour

Wayne Collins

The second challenge with implementing WYSIWYG for electronic documents that are imaged on substrates is managing colour expectations. Chapter 4 discussed the challenges of colour management from the perspective of how we see colour, measure it, and manage output devices with ICC profiles. In this chapter, we will explore colour management from the perspective of how we recognize and manage the ICC profiles that are embedded in client documents. We will also explore the preflight issues in managing spot colours in documents. This will also lead us to a discussion of trapping for lithography and flexography.

To design with colour in computer graphics software, we must understand how the software generates the colour values. Page layout and illustration software usually have several systems for creating colour on a page. The colour settings or colour preferences attached to a file can change from one document to another or in the same document restored from one computer to another. If a designer uses the RGB colour model to specify the colours in a document, the colours on the monitor can change depending on the translations done to the colour settings. This is a major turning point for designers creating documents intended to stay in the electronic media. No one pays much attention to how a particular colour of red is rendered from one web browser to another. Designers pay more attention to how the colours interact relative to one another in web-page documents. It is only when we image a computer graphic on a substrate that we must pay attention to rendering the exact hue of red from one device to another. Coca-Cola has very exact specifications for the red used in its documents that tie into its brand recognition. So designers for documents intended for imaging on substrates must use colour models that are proven to render exactly the same results from one output device to another.

Pantone Colours

This is a lofty ideal that the graphic communications industry aspires to. There are systems in place that are proven to render very accurate results. There are challenges in understanding the systems, and one wrong step in the process and accuracy is destroyed. The process starts with how a designer chooses colours in a document. The most-used system for choosing accurate colours was created by the Pantone company. Pantone has developed a library of ink recipes that are published as swatch books. A designer can buy a printed book of a library of colours that matches an electronic library that can be imported into computer software programs. Designers compare their on-screen rendering of a colour to the printed sample swatch. If a designer is developing a corporate identification package with logos that use Pantone 123 and Pantone 456, the designer can be assured that the documents he or she creates will be imaged with inks that have similar spectral values to the swatch books used to choose the colour. I say similar, because the swatch books fade over time, and the substrates the books are printed on don't usually match all the substrates a corporate logo is imaged on.

It is also important to realize that the Pantone library was created to mix pigments for **spot colour** inks rather than **process colour** inks. Spot colours are mixed independently and must each be applied

to the substrate independently. Process inks are only the four primary colours: cyan, magenta, yellow, and black. Process inks are transparent and are intended to be combined by halftone screening different percentages on a substrate to render any colour in the Pantone library. Spot colour inks are more opaque and are intended to be applied to a substrate one at a time, through distinctly separate printing units. Since most colour photography is colour separated to render the photo in only the four primary process inks, most documents are created intending to convert the spot colours to process colours. They can be imaged with the photographs in the document. A designer must know how many colours the output device is capable of when deciding which colours will remain as spot colours and which will be converted to CMYK process colours. Most inkjet and electrophotographic devices are only capable of imaging with the four process colours. Some lithographic presses have extra printing units that can print spot colours, so six- and eight-colour presses commonly print the four process colours and two (or four) extra spot colours in one pass. It is not uncommon to have 10- and 12-colour flexographic presses that image no process colours but use 12 spot colours. This is because, historically, flexo plates cannot consistently reproduce very fine halftone dots reliably. This is changing with the development of high-definition plating technology, so we are seeing more photographic content produced well on flexographic presses. Flexography is primarily used in the packaging industry where spot colours are very closely tied to brand recognition in retail outlets. A designer must be very aware of the imaging technology used to reproduce a document when deciding which colours will remain spot colours.

This is where the next round of challenges begins when preflighting (assessing) documents for imaging to substrates. If design elements stay as spot colours, it is a simple process to maintain the spot colour on the output device and to image with the appropriate ink or toner. Some software will not maintain the spot colour in a document easily in some situations. Usually, the problem comes with applying gradients to spot colours. It is very easy to introduce a median colour value on a spot colour gradient that is simulated with a process colour value. The screen version displays a nice smooth gradient that looks like what the designer intended to create. When imaging on a substrate, the gradient will have to be broken down into individual colours: from the solid spot colour to a value of CMYK and back to spot colour. It is very hard to recognize this by viewing the document, or even a composite PDF file. Viewing separated PDF files, or using a ‘separations’ tool in Acrobat, will show the problem before it gets to a printing plate.

There are also colour problems associated with nested files generated in different software. For example, if we create a magazine page with a headline colour named “PMS 123,” add a logo created in Adobe Illustrator with type in a colour named “Pantone 123,” and insert a PDF ad created in Apple’s Pages layout with a border specifying “PANTONE 123,” then even though they are all the same, colour-separating software will generate three separate spot colour plates for that page. The spot colours have to be named exactly the same and come from the same library. Some modern workflows include aliasing rules that will match numbered PMS colours to try to alleviate the problem. Colour libraries can be a problem as well, especially if our software allows the library to convert the spot colour to a process colour. The same colour library in two different versions of Adobe’s Creative Suite software can generate a different process colour recipe for the same Pantone colour. This is not a problem if all the document elements are created within one software package and all spot colours are converted to process colours. The problem arises when a designer places a graphic file from other software on a page with the same colour elements. A logo created in an older version of Adobe Illustrator will use that colour library to look up process colour recipes that can be very different from the recipes in a recent colour library used in Adobe’s InDesign software. So all the Pantone orange colours in a document are supposed to look the same, but do not because the spot colour to process colour conversion has not been

done with the same library. The problem becomes worse when we combine files from different software vendors, as designers often have to do when building a document. It is common these days to bring together graphics created in Microsoft Office and Apple software and generate a final document with Adobe InDesign. The best way to create consistent documents for reproduction is to specify a common CMYK colour value that will print reliably on the output device.

Pantone also publishes a swatch book that shows the difference between the swatches run as spot colour ink mixes, and the same swatch printed as halftone screen builds of process inks. This is a designer's most valuable tool for specifying process ink recipes. It also illustrates that many Pantone colours cannot be simulated very well using halftone screen values of the four process inks. It is very apparent that very vibrant orange, purple, and green Pantone spot colours are not achievable with process inks. There are systems like Hexachrome for colour separations that use more than just CMYK inks to extend the gamut of the Pantone colours that can be reproduced. There are also more and more inkjet and electrophotographic engines that will use extra spot colours to extend the colour range of the device beyond CMYK. The businesses that employ those devices usually know they are unique in the marketplace and have developed marketing tools to help designers use those capabilities successfully.

Accuracy in Design

If we reflect back to the concept of WYSIWYG for a moment, we can use the Pantone selection process to illustrate the challenge very well. If we ask a designer to choose colours for a document based on computer screen displays, we know that the RGB or HSL values they can select will be far too vibrant for reproduction with any imaging engine. To set proper expectations for WYSIWYG, we ask the designer to calibrate a monitor and select the proper output profiles to tone down the screen view and set more realistic expectations. We also ask that a print designer use printed swatch books to select from a library of specified colours and assign realistic CMYK process colour values to her or his colour palette. If those steps are followed, there is a very reasonable chance that the process will achieve WYSIWYG. However, it can break down in a few places. The spot colour swatch books set expectations about colours that cannot be achieved with process inks. When a mixture of spot colours and process inks are used, it is difficult to display both on the same computer screen with reliable colour. Graphics files can originate in different software with different libraries using different process colour recipes for the same Pantone colours.

There are also many spot colour libraries to choose from, and designers don't know when to use each library. We have described why the Pantone library is a North American standard, and some of its limitations. There are other design communities in the world that use spot colour libraries that are included as choices in graphic creation software tools. There are almost as many spot colours to choose from as there are free fonts files to download from the Internet. Spot colour classification has led to thousands of discrete colours being given unique names or numbers. There are several industry standards in the classification of spot colour systems. These include:

- Pantone, the dominant spot colour printing system used in North America and Europe.
- Toyo, a spot colour system common in Japan.
- DIC colour system guide, another spot colour system common in Japan.
- ANPA, a palette of 300 colours specified by the American Newspaper Publishers Association for spot colour usage in newspapers.

- GCMI, a standard for colour used in package printing developed by the Glass Packaging Institute (formerly known as the Glass Container Manufacturers Institute, hence the abbreviation).
- HKS is a colour system that contains 120 spot colours and 3,250 tones for coated and uncoated paper. HKS is an abbreviation of three German colour manufacturers: Hostmann-Steinberg Druckfarben, Kast + Ehinger Druckfarben, and H. Schmincke & Co.
- RAL is a colour-matching system used in Europe. The RAL Classic system is mainly used for varnish and powder coating.

The guiding principle for using any of these spot colour systems is to check that the manufacturer of the reproduction is using that ink system. The Trumatch library is quickly gaining favour as a tool for colour selection. That library of spot colours has been developed to be exactly replicated with process colour halftone screening. There are no spot colours a designer can choose from that library that cannot be reproduced well with standard process inks. As more computer graphics are being produced on digital imaging devices that only use CMYK, this colour library is becoming the choice for cross-platform or multi-vendor media publications.

5.4 Trapping

Wayne Collins

Trapping can be a very complex procedure in pre-imaging software for certain imaging technologies. It is an electronic file treatment that must be performed to help solve registration issues on certain kinds of press technologies. Generally, if a substrate has to move from one colour unit to another in the imaging process, the registration of one colour to another will not be perfect. That mis-registration must be compensated for by overlapping abutting colours. As soon as two colours touch in any two graphic elements we must create a third graphic element that contains both colours and overlaps the colours along the abutment line. That third element is called a *trap line* and can be generated many different ways that we will review.

Electrophotography

First let's look at the differences between the four most common imaging technologies and determine where and why we need to generate these trap lines. Electrophotography, or toner-based digital printers, generally use only process colours. Each time an electrostatic drum turns, it receives an electrical charge to attract the toner colour it is receiving. The drum keeps turning until all colours of all toners are on the drum, and then all colours are transferred to the substrate at one time. There is no chance for mis-registration between the cyan, magenta, yellow, and black toners as they are imaged at the resolution of the raster generated by the RIP, and the placement of the electronic charge for each colour can be adjusted until it is perfect, which makes it stable from image to image.

Lithography

Let's compare electrophotography to the lithographic print process. In lithography, a printing plate is generated for each colour and mounted on a plate cylinder. The plates are registered by manually turning wrenches to hold plate clamps, so the plate-mounting procedure can generate registration errors. Each colour printing unit is loaded with a separate ink, a plate that has been imaged to receive that ink, and a blanket that offsets the image from the plate before it transfers it from the blanket to the substrate. This is another mechanical transfer point that can cause registration errors. Most high-end lithographic presses have servo motors and cameras that work together to adjust for mechanical registration errors as the press runs. The substrate must travel from one printing unit to the next, and it is here that most registration errors occur. There are slight differences in the substrate thickness, stability, lead (or gripper) edge, and a different rate of absorbing ink and water that cause slight mis-registration. Also, consider that most sheet-fed litho presses are imaging around 10,000 sheets per hour, and we are only talking about movements of one-thousandth of an inch. On most graphic pages, however, the naked eye can see a mis-registration of one-thousandth of an inch, so the process must be compensated for. The solution is generating trap lines to a standard for lithography of three one-thousandths of an inch. This trap line allowance in abutting colours allows for mis-registrations of two-thousandths of an inch that will not show on the final page.

Inkjet

Inkjet is the next imaging technology we must assess and compare. The print heads on all inkjet machines are mounted on the same unit travelling on the same track. Each ink is transferred one after the other and the substrate does not move after receiving each colour. It is like electrophotography in that mis-registration between print heads can be adjusted electronically, and once in register remain stable for multiple imaging runs on the same substrate. If the substrate is changed between imaging, the operator must recalibrate to bring all colours into registration, and ensure the placement of abutting colours is perfect and no compensation is needed. As a result, no trapping will be needed for most inkjet imaging processes.

Flexography

Flexography is the fourth imaging technology we need to assess. This technology has the most points where mis-registration can occur. The printed image must be raised on the plate to receive ink from an anilox roller that can deliver a metered amount of ink. The computer graphic must be reduced (or flexed) in only one direction around the plate cylinder. A separate printing plate is developed for each colour and mounted on a colour unit that includes an ink bath, anilox roller, doctor blade, and a plate cylinder. The substrate travels from one print unit to the next on a continuous web that is under variable amounts of tension. If a graphic has a lot of white space around it, the substrate can be pushed into the blank space and cause distortion and instability in the shape and pressure of the raised inked image on the substrate. Flexography is used to image the widest range of substrates, from plastic films to heavy corrugated cardboard. This process absolutely needs trap lines generated between abutting colours. Standard traps for some kinds of presses can be up to one point (1/72 of an inch, almost five times our standard litho trap). Graphic technicians need to pay particular attention to the colour, size, and shape of the trap lines as much as to the graphic elements. In most packaging manufacturing plants, there are pre-imaging operators that specialize in creating just the right trapping.

Let's examine some of the ways these traps can be generated. The simplest way is for a graphic designer to recognize that he or she is designing a logo for a package that will be imaged on a flexographic press that needs one-point trap lines generated for all abutting colours. The designer isolates the graphic shapes that touch and creates overprinting strokes on those graphic elements that contain all colours from both elements. That doesn't even sound simple! (And it's not.) It becomes even more complicated when the graphic is scaled to many different sizes on the same package or used on many different packages. So most designers do not pay attention to creating trap lines on the graphics they create and leave it to the manufacturer to create trapping for the specific documents on the specific presses they will be reproduced on.

There is specialized software that analyzes a document, determines where abutting colours are, and generates the tiny graphic lines as a final layer on top of the original graphic. This is done before the document goes to the RIP so it is raster-image processed at the same time as the rest of the document. Most RIPs process PDF files these days, and there are specialized plug-ins for Adobe Acrobat that will analyze a document, generate trap lines, and let an operator examine and edit the thicknesses, shape, and colour of those lines. It takes a skilled operator to examine the extra trap lines and determine if they are appropriate for the press they are going to be printed on. Press operators also need to determine the

trap values of their inks. This refers to the ability of one printing ink to stick to another. Inks vary in viscosity depending on the density and types of pigments they are carrying. The trap characteristics and transparency of a printing ink are part of what determines the printing order in which they are applied to the substrate. For example, a process primary yellow ink is very transparent and will not stick (trap) well if printed on top of a heavy silver metallic ink. The metallic silver is thick and very opaque, so it will hide everything that it overprints. A graphics technician must generate trap lines for a graphic that has metallic silver abutting to a process yellow shape. The technician will increase (spread) the shape of the yellow graphic to go under the abutment to the silver. The silver shape will not be altered, and when it overprints, the yellow ink will stick to and hide the yellow trap line shape. The best analogy, we have heard is from a press person — the peanut butter sandwich analogy. We know the jelly sticks to the peanut butter and the peanut butter will not stick to the bread if the jelly is spread first. If a press person does not know the trap values of the inks, he or she can make as big a mess of the press sheet as an upside-down peanut butter and jelly sandwich makes on the front of your shirt! For this reason, trapping should be left to the specialists and is usually applied to a final PDF file before it is sent to a RIP. Ninety percent of trap lines for lithographic and flexographic imaging reproduction are generated automatically by specialized trapping software. Operators are trained to recognize shapes and colour combinations that will cause problems on the press. They will custom trap those documents with the Acrobat plug-ins we talked about earlier.

Special Consideration for Black

There is one trapping combination that should be considered and applied to all four imaging technologies. It is the way that black ink is handled in the document and applied on the imaging device. Most type is set in black ink, and much of it overprints coloured backgrounds. In all four imaging technologies, black is the strongest ink and hides most of what it overprints. It is still a transparent ink and most process black ink is more dark brown than the rich dark black we love to see in our documents. If the size of the black type or graphic is large enough, we will be able to see the black colour shift as it overprints stronger or weaker colours under it. Graphic designers should pay attention to setting whether black type or graphics overprint the background, or knock out the background to print a consistent black colour. A useful rule of thumb is that type above 18 points should be knocked out and boosted. Raise this threshold for very fine faces such as a script where larger point sizes can overprint, and reduce it for excessively heavy fonts like a slab serif. If the graphic is large enough, it should also be ‘boosted’ with other process colours.

The way we handle black ink or toner deserves special consideration in all four imaging technologies. Black is a supplemental colour to the three primary process colours. It is intended to print only when the other three colours are all present in some kind of balance. In all imaging technologies, we must watch that our **total ink coverage** does not approach 400%, or 100% of each ink overprinting the other inks in the same place. This is usually too much ink or toner for the substrate to absorb. As a result, it will not dry properly and will offset on the back of the next sheet, or bubble and flake off the media in the fuser. Therefore, we must pay attention to how our photographs are colour separated, and how we build black in our vector graphics.

Colour Separations

When colour separating photographs, we can build in an appropriate amount of GCR or UCR to give us the right total ink coverage for the imaging technology we are using for reproduction. UCR stands for under colour removal. It is applied to very dark shadow areas to remove equal amounts of cyan, magenta, and yellow (CMY) where they exceed the total ink limit. For example, in sheet-fed lithography, a typical total ink limit is 360. In areas that print 100% of all four colours, UCR will typically leave the full range black separation, and remove more and more CMY the deeper the shadow colour is. A typical grey balance in shadows may be 95% cyan, 85% magenta, and 85% yellow. Including a 100% black, that area would have a total ink coverage of 365. Other imaging technologies have different total ink limits, and these can vary greatly from one substrate to another within an imaging technology. An uncoated sheet will absorb more ink than a glossy coated sheet of paper and so will have a different total ink limit.

GCR stands for grey component replacement, and it is intended to help improve grey balance stability in a print run and save on ink costs. GCR can affect far more colours than UCR as it can be set to replace equal amounts of CMY with black all the way into the highlight greys. This is particularly useful in technologies like web offset newspaper production. Grey balance is quickly achieved in the **make-ready** process and easily maintained through the print run. Black ink for offset printing is significantly cheaper than the other process colours, so there are cost savings for long runs as well. GCR is used in photos and vector graphics produced for other imaging technologies as well. Any process where grey balance of equal values of the three primary colours could be an issue is a smart place to employ GCR.

You may be wondering how we can check the shadow areas of every photo we use. These GCR and UCR values can be set in ICC profiles by linking the shadow and neutral Lab values to the appropriate CMYK recipes. When the ICC profile is applied for a given output device, the shadows get the proper ink limits, and the grey tones get the prescribed amount of black, replacing CMY values.

Keylines

Black keylines, or outline frames for photos, are common in many documents. This is another place where a document should have trapping software applied for every imaging technology. Outline strokes on graphics can also have a ‘hairline’ setting, which asks the output device to make the thinnest line possible for the resolution of the device. This was intended for in-house studio printers where the resolution is 300 dpi — so the lines are 1/300th of an inch. But the same command sent to a 3,000 lspi plate-setter will generate a line 1/3000th of an inch, which is not visible to the naked eye. These commands must be distinguished in PostScript and replaced with lines at an appropriate resolution — trapping and **preflight** software will do this.

Knock outs

The use of solid black backgrounds is becoming more popular in documents, which can cause problems in reproduction with all imaging technologies. The first problem is with filling in details in the graphic shapes that are knocked out of the solid black background. Fine type serifs, small registered or trademark symbols, or the fine hairlines mentioned above will all fill in and be obliterated when imaged. The

problem is multiplied when we boost the black colour by adding screened values of cyan, magenta, or yellow to the colour block. When white type or graphics knock out of these background panels, any slight mis-registration of any colour will leave a halo of that colour in the white type or graphic. This problem can also be solved with trapping software. Essentially, the trapping engine outlines all the white type with a small 'black only' stroke that knocks out the process colour that boosts the black, making the white type fatter in that colour separation. This 'reverse trapping' works well when applied to the four imaging technologies we have been examining: lithography, flexography, electrophotography, and inkjet.

5.5 Transparency

Wayne Collins

The biggest challenge in reproducing computer graphics on output devices in today's marketplace is dealing with transparency in graphic files. This truly emphasizes the importance of WYSIWYG in proofing for the graphic communications industry. We must first emphasize that page layout graphic software is not developed for producing documents for mechanical reproduction. This software prioritizes the creation of documents for viewing on electronic media; they are created on a computer screen for viewing on a computer screen. We have reviewed some of the issues with rasterizing vector shapes consistently, and reliably representing colour from one device to another. Viewing a graphic with three-dimensional transparent elements is significantly different on an illuminated medium where the light is transmitted compared to an opaque medium where the light is reflected. It is very hard to judge how the transparent effects will translate from one to another. There is room for the same kind of collaborative research in this realm, as there was in developing OpenType font architecture and ICC profiles.

The problems in WYSIWYG production for transparency fall in two categories. The first problem is setting expectations so a designer can make a reasonable prediction of how the document will look when imaged on a given media. The second problem is the sheer proportions of the computational processes we are asking of a RIP. PostScript is a three-dimensional language that allows a creator to stack and prioritize elements on a page. The RIP can literally 'throw away' raster data that is knocked out by graphic elements that completely cover the elements behind. If those elements have to show through the foreground elements by 20%, the RIP must hold much more raster data in physical memory addresses. Many times, data is lost if there are not enough addresses available for the computations, and this can change from one processing of the document to the next.

Designers can employ strategies at each level of document creation to manage these problems. The first strategy is to use layers well in document creation. By isolating different effects on separate layers, it becomes easier to isolate and edit the transparent effects when they don't produce the desired results in the final output. The layers can be included in a PDF file of the document, and this allows the possibility of relatively quick editing in PDF editing software closer to the output stage. This can be a completely different working style for some graphic artists. If we start with the premise that the computer screen representation of the document is NOT good WYSIWYG and will probably need editing, then we can justify working with layers more to isolate effects. We can organize design elements on layers after creation — when we are fine-tuning the effects. Usually, this is a good technique when creating many elements on several page dimensions. Designers can review their documents and decide if there are distinct dimensional levels, as page elements are pushed further into the background to pull other page elements forward. A simple example is a book cover for a retrospective, with pictures from four distinct decades. The photos and type from each decade can be set on distinct layers, and transparent values of 25%, 50%, 75%, and 100% can be set for each layer. The screen will render one version of the document, and the printer will render another. It is easier to fine-tune the four layer levels of transparency than to go back and set new transparency levels for dozens of individual page elements.

Another strategy that must be considered for processing multiple transparent page elements is allowing the page layout software to raster the page elements, so it sends raster data to the RIP. This technique treats the transparent elements, such as a photograph on the page, and allows the creator to choose the resolution of the raster. Care must be taken here to ensure overlapping vector elements will raster at the same resolution in the RIP. Let's say we have a type block that crosses a photo on the page, but it is transparent to let the photo show through the type. If we rasterize the transparent type at 300 ppi — the resolution of the photo — it will be significantly different from the raster of the vector type at the RIP, which might be 3,000 lspi for some plate-setters. The letter shape will be 10 times thicker over the photo, and that will be VERY noticeable if the type crosses the photo in the middle of the glyph. The solution is to make sure to raster the transparent type at 3,000 ppi to match the plate-setter raster. This makes the PDF file very large because it contains lots of raster data. But this solution is also a disadvantage because it does not allow late-stage editing of the transparent values in the PDF file. The advantage is that the transparency elements will have better WYSIWYG, process more consistently in multiple RIPs, and use less RIP resources in processing.

It is very important to be aware of the transparent elements you are creating in a document. It is not always apparent when using effects, plug-ins, or effects filters available in page layout software. Using a bevel or emboss effect, or a simple drop shadow, makes that page element use transparent routines in the RIP. Programs like Adobe InDesign let designers view all the transparent elements on a page. Designers should examine each one to decide if it should be rasterized before RIP-ing or at the RIP. This is a good point at which to decide if transparent elements can be grouped, or organized, on common layers. It is also a good point to decide how the transparent element contributes to the design, and how critical the level of transparency, or WYSIWYG value, is in the overall design. In the retrospective book cover design referred to above, WYSIWYG is very important in communicating the message of the book and getting predictable results.

Transparent elements can be rasterized at the page layout stage, the PDF creation stage, and at the RIP stage for the final output device. Adobe Acrobat also has a tool to view transparent elements in a PDF file. It is important for a designer to compare the transparent elements in the PDF to those in the page layout software. The primary concern is that the elements rasterized in the PDF are no longer editable, so it is critical that the levels are right to create the desired overall effect. It is also important for a preflight operator to view the transparent elements in a PDF file to check what the RIP will have to process and to make sure the computational resources are available. If there are processing errors in the final output, they are most likely to occur in rendering the transparent objects. Viewing the transparent elements on a page in Acrobat should provide a mental checklist for the operator when she or he views the final output.

Communication Is Key

The graphic communications industry still has collaborative work to do to make the processing of transparent elements on a page more predictable and repeatable. It is important for designers to understand the problems they can be creating for a RIP, especially for output on an extremely high-resolution device like a plate-setter for waterless lithography. It is also important for operators who are managing documents with lots of transparency to be aware of the checkpoints in a document, and to know when there is not adequate WYSIWYG for the transparent elements on a page. Good questions for all stakeholders to ask when processing a document that relies on many transparent elements are:

- Where are the transparent elements?
- Did they process correctly?
- Is anything missing in the layers that should show through the transparency?
- Are there transparency values that can be adjusted to optimize the overall effect?

Let's review the primary tools for reproducing transparent page elements in a document. We can utilize layers in a document for setting common transparency values. We should view all transparent elements in a document before and after creating a PDF file. There are several stages to rasterizing the transparent elements. The earlier we rasterize them, the less editable the document becomes, and the more consistent the final output will be. We are creating a larger file to process when we rasterize transparent elements early. Much less computational resources are required at the RIP, and the more predictable our final output will be. When managing late-stage processing of transparency, we must be aware that what we are viewing on a computer screen is not necessarily a good representation of the final output. Graphic artists at all levels of production must pay attention to the transparent areas of a document to check for accuracy.

5.6 Imposition

Wayne Collins

Imposition of individual graphics page files serves two primary purposes. The first, and perhaps most important purpose, is to utilize media and manufacturing equipment with the most economic efficiencies. The second is to add what has historically been referred to as ‘furniture’ to the manufactured sheet to control processes. We will discuss both priorities for each primary imaging technology we are examining in this book. There is also a range of equipment capabilities for each technology that affects how documents are imposed. There are a few ways to impose the files either pre-RIP or post-RIP. We will also look at ways of imposing in graphic creation software and in specialized imposition software.

The first technology we will look at is electrophotography, where imposition is perhaps the most underutilized. Electrophotographic, or Xerox-type copiers are usually used for short-run lengths with demands for instant turnaround. Duplexing is the simplest type of imposition, but there are four choices for how to orient the back of a single page on the front. The duplexing style can be specified in the print driver, in the PDF file, or in the RIP. Most small printers will turn on duplexing, rather than image the fronts, turn the printed paper over the right way, and image the back of the sheet. Fewer will take the time to utilize the machine and media capabilities to step and repeat an image two up on a larger sheet to half the run time. Yet, as a manufacturing process, electrophotography is the slowest technology for image reproduction, and the most in need of saving time. There are simple rules of automation that can be programmed in a RIP to automatically impose if a run length is over 100 copies. For example, letter-size documents are the most often imaged on this type of equipment. If run lengths of more than 100 copies were imposed two up on a tabloid sheet, it would halve the run time and open up more imaging time on the machine. This introduces another process — cutting the sheets in half before final delivery. Management can determine how well the imaging engine run time is utilized and when it is efficient to have the same operator cut printed sheets in half. Making that management decision requires a knowledge of workflow options for efficiency. Those efficiencies are the primary purpose of implementing imposition software.

Using a ‘step and repeat’ or ‘duplexing’ imposition of single-page file is the simplest example of imposing files for electrophotographic workflows. More and more copiers have capabilities to fold and bind the finished product ‘inline’ in one continuous process. This process is driven by imposing the single-page files in the correct order as they are processed in the RIP, so they image in the proper spot on the media to fold, and bind together in the correct order.

Imposing page files for binding styles usually follows two types of machine capabilities: saddle stitching and perfect binding. **Saddle stitching** is a binding process that folds the media after it is imaged on both sides, stacks the printed folded sheets one inside the other, and applies staples to the spine of the book. The other dominant style of book binding built into copiers is **perfect binding**. Media is imaged on both sides and folded, but the folded sheets are stacked on top of each other, glue is applied, and a cover sheet is wrapped around the glued book to encase the spine. The pages have to be imposed in a completely different order on the printed sheets. The first and last sheets of a saddle-stitched book are imaged on the

same sheet, whereas a perfect-bound book has the first pages imaged on the same sheet, and last pages on separate sheets of media.

There are many options for folding a sheet of substrate before binding it together. The options increase the larger a sheet is. An imposition must account for the preferences that are best practices for the specific machines involved. If we look at sheet-fed lithography first, we can identify some common best practices that can also apply to toner-based electrophotography and inkjet. We shall leave an examination of imposition for flexography to discuss nested dieline shapes for packaging applications.

Imposition standards are based on workflows for standard-sized pages, primarily letter-sized pages measuring $8\frac{1}{2}$ " x 11". We speak of *two up* devices that can generally image substrates up to a maximum size of 12" x 18" or 13" x 19." Two up devices can accommodate two letter-sized pages plus bleeds, grip, marks, and colour bars — sometimes referred to as furniture on an imposed sheet. These four elements all serve a purpose in page reproduction manufacturing that we shall define later. *Four up* devices generally accommodate imaging substrates up to 20" x 29" to image four letter-sized pages. Forty-inch devices are referred to as *eight up* and image on a maximum sheet size of 30" x 40", which can image eight letter-sized pages and the furniture mentioned above.

There are four common styles of imposition for eight up devices: sheet-wise, work and turn, work and tumble, and cut and stack.

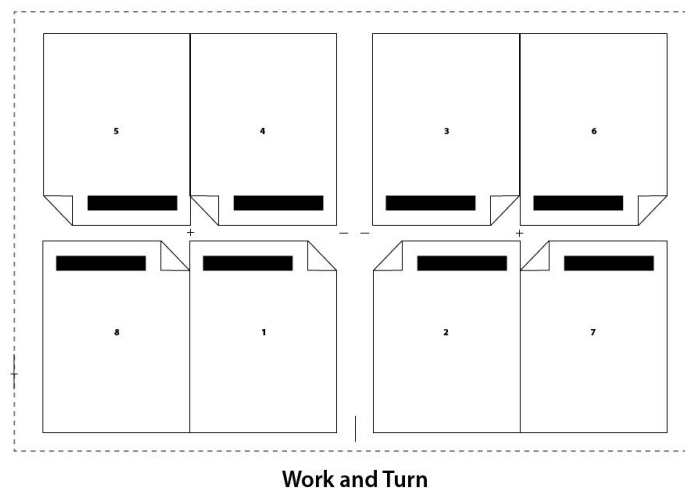
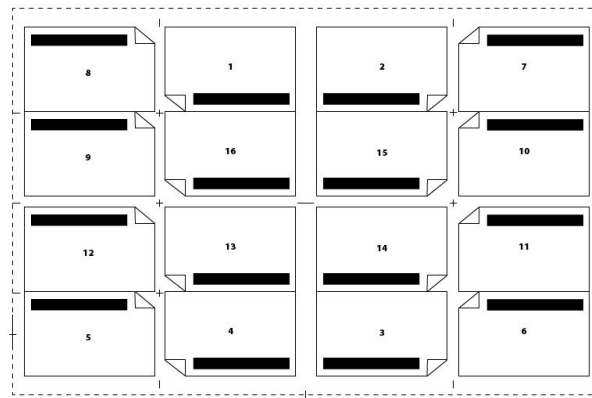
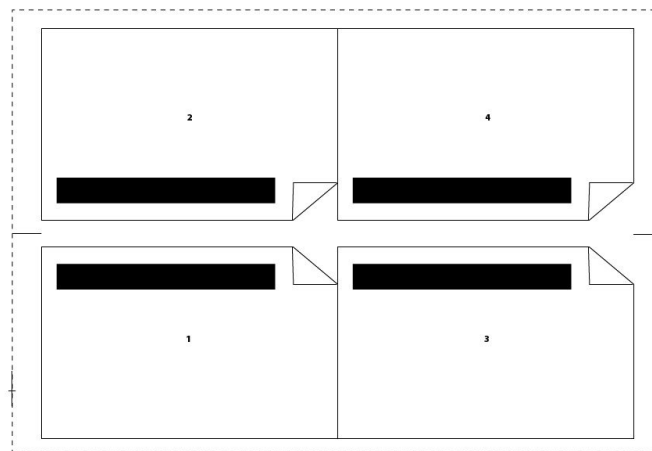


Figure 5.1 work and turn(a)



Work and Turn

Figure 5.2 work and turn(b)



Work and Tumble

Figure 5.3 work and tumble

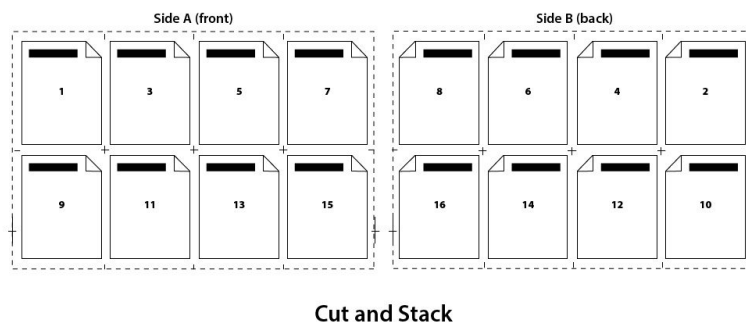


Figure 5.4 cut and stack

Sheet-wise impositions image the fronts of all pages on one side of the sheet and impose all the backs on a separate set of plates for a press run that will back up all the sheets. Work and turn imposes the fronts on one half of the sheet and the backs on the other half, with the axis running perpendicular to the grip of the sheet (see Figures 5.1 and 5.2). Work and tumble imposes all fronts on the bottom half of a sheet and backup images on the top half of the sheet (see Figure 5.3). The sheets are flipped halfway through the press run, with the axis parallel to the grip edge of the sheet. Cut and stack imposes the pages so full press sheets can be collated, and the collated sheets cut and stacked in order on top of each other to make a final book (see Figure 5.4).

Lithographic web offset presses have imposition orders that depend on how wide the web of paper is, and how many web rolls and half rolls will be brought together before folding on a first former, and cutting on a second former. There are many options for configuring a web-fed litho press, depending on the number of pages in a publication. Usually, the entire publication is printed and folded by running the stack of web paper together and folding it in half over a former.

Imposition has to account for creep and bottling when imposing for thicker publications. *Creep* pushes the image on a page closer in to the spine the further the page is toward the spine, by the width of the thickness of the publication at the stapled, spine edge. *Bottling* skews the image on a page to account for the skewing of web rolls of paper that are folded in very thick signatures. The thicker the folded signature of a bound book, the more skewing takes place, which should be accounted for in the ‘Bottling’ value in an imposition.

Imposition for inkjet mediums is usually done when the image is rasterized. The RIP will store the raster image and nest several raster images together to fill the dimensions of the media being imaged. This is usually set as an automated function in the RIP, and is tied to the size and cost of the media being used. When imaging very low resolution images on very low cost media, the manufacturer is usually more concerned with the speed of the machine than the utilization of the media. If an expensive media is being used, the automatic imposition will be utilized in the RIP to save media. Often inkjet images are not square, and the media will be die cut or cut with a router after imaging. The RIP can be set to

impose the images so the shapes nest inside each other. This is usually outside of the automatic features for imposition in a RIP, and requires operator intervention. In that case, the imposition operator must know the die cutting or router processes very well to make sure the imaged media can be cut out even though it is nested with another image.

This nesting of images to be die cut after imaging is most prevalent in flexographic printing for packaging. Most package or label shapes are not square and the media is expensive. The imposition function becomes very important for preparing flexographic plates. Nesting the die cut shapes for several packages together on a continuous roll of media takes very specialized software and a highly skilled operator. There are many variables to consider, including media thickness, ink coverage, die shapes, glue releases, and image floor on the flexo plate. Flexo imaging for packaging generally takes more understanding of CAD software and the construction of the final three-dimensional product. Imposition operators must know the structural requirements as well as the press limitations to nest together several package images on the same press run.

The final consideration for all impositions in all imaging technologies is the computer resource requirements for the RIP. We usually require an imaging engine to raster a single document, and proof it one page at a time through a proofing device. When we impose the same document with many other pages in completely different orientations, sometimes RIP processing errors can occur. Fonts drop out, and more commonly, transparent elements do not process properly. This is another checkpoint to make sure the imposed image matches the proof of the single page. It is essential to discuss preflighting for print at this point to establish where the routine checkpoints in document processing should be.

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- cut and stack-03 © Ken Jeffrey

5.7 Preflight

Wayne Collins

We have covered quite a few parameters that must be considered when preparing a computer graphic for manufactured image reproduction. The parameters shift with different substrates and imaging technologies. The task of checking a computer graphic document in preparation for the manufacturing process is called preflight. Most graphics are created by designers who are working separately from the manufacturer. In some cases, preflight preparation is the responsibility of the designer, or graphics creator, and in some cases, it is the responsibility of the manufacturer. Some manufacturers charge extra if they have to correct a graphics file that is not prepared properly for their imaging process. Most do not charge extra for preflighting, trapping, or imposing a file for their imaging process. Problems occur when all parties believe a file is prepared properly, but it causes errors in the RIP process. A poor font, improper colour separations, and transparency settings that drop out layers on a page are problems that occur most often. This is when time, materials, and money are wasted, and critical media campaign deadlines are missed. Preflight tries to catch the problems before they reach the RIP.

Designers or graphics creators can purchase separate preflight software that will generate reports about a PDF or PostScript file before they submit it to a manufacturer. The most popular dedicated preflight software is from Markzware and is called FlightCheck. There are also a few other companies that are popular in the marketplace. Enfocus bundles its preflight software with a suite of PDF editing tools called Pitstop. The Adobe Creative Suite has preflight functions built into its software suite. Adobe InDesign is the page layout software of choice for creating multi-page documents such as brochures, pamphlets, or books. The preflight module in InDesign will generate a report that can be included with the packaged contents a designer should provide to a manufacturer. The report will list important information about the InDesign document, such as that found in the list below. Adobe Illustrator also has a built-in preflight tool, and Adobe Acrobat has preflight tools that designers should use to analyze their PDF files before submitting them to a RIP.

Various industries have set PDF standards. The magazine publishing industry, for example, developed a PDF/X standard to ensure PDF/X files can be written only if they meet a set of specifications that are common for lithographic magazine production. Other manufacturing processes adopted the standards if they were appropriate for their imaging technology and PDF workflows.

Most preflight software checks for the following elements in an electronic document:

- File format
- Colour management
- Fonts
- Spot colour handling
- Page structure
- Thin lines
- Black overprint

- Trapping

5.8 Summary

Wayne Collins

This chapter has looked at computer graphic creation through the lens of a manufacturer that must reproduce the electronic image on a substrate. The image must be processed through a RIP that drives a laser, or other imaging technology, to transfer pigments to that substrate. There are unique variables that must be considered in preparing the computer graphic for the reproduction process. We have explored routines for processing vector data such as fonts through a RIP, spot colour handling, trapping, and imposition. The next chapter will look at each of the imaging technologies in more depth.

Questions to consider after completing this chapter:

1. Describe six pre-imaging file analysis processes that should be considered when developing a computer graphic for reproduction manufacture.
2. Describe four major imaging technologies that utilize computer graphics to image on different substrates.
3. Describe the difference between raster data and vector data when creating a computer graphic file.
4. Compare the raster resolution of the data for a typical lithographic plate-setter compared to the resolution of a typical inkjet device.
5. How many addressable values can be recorded in an eight-bit byte of computer data?
6. What does the acronym WYSIWYG stand for?
7. How many kerning pairs are present in a 'good' font file?
8. What colour matching library has been developed exclusively for process colour printing inks (CMYK)?
9. What two printing processes must have trapping applied to computer graphics files before making printing plates?
10. What can a page layout artist do to a graphics file if the transparent elements on the page are dropping out or not processing in the RIP?

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Chapter 6. Imaging

6.1 Introduction

Roberto Medeiros

Learning Objectives

- Describe digital printing methods and their differences
- List the various inks used in inkjet printing and their characteristics
- Identify the key components of electrophotography
- Explain the seven steps of the electrophotographic process
- Describe the differences between toner types and how they affect imaging
- Evaluate the suitability of a paper for a project based on its characteristics
- Convert between paper basis weights and grammage
- Describe the key differences between page description languages
- Acknowledge the historical significance of Postscript in desktop publishing
- Explain the differences between PDF/X versions
- Describe the function of a RIP in a DFE
- Explain why calibration is critical in electrophotography
- Describe the key component in variable data printing
- Identify key benefits of open standard VDP formats

Digital printing can be defined as the reproduction of an image or document onto a substrate, directly from an electronic file, without the use of a fixed image plate. Traditional printing transfers an image permanently onto a fixed image plate, whereas digital printing transfers the image temporarily onto a photoconductive cylinder, called a drum, or directly onto the substrate itself. Printing in this manner provides some unique capabilities that sets it apart from traditional print methods. There is virtually no set-up or make ready, finishing tasks can be accomplished inline, and each sheet can have unique content, which makes this printing method ideal for publication printing, short print runs, or highly dynamic content.

The two most common digital printing methods in use today are electrophotographic (toner based) and inkjet (ink based). Both technologies are used in a wide range of printing devices from small desktop printers to large high-volume, high-speed digital presses. The term *digital press* is often used to describe commercial digital printers. In the past, speed was the determining factor of this designation. Today, we have specific criteria published by Idealliance, a not-for-profit member organization that develops standards and best practices for the digital media supply chain (Idealliance, n.d.). Apart from

speed, colour accuracy to meet a specification and consistency over long print runs are key parts of [Idealliance's certification](#) process.

For the purposes of this text, we will focus on digital printers and presses used in commercial printing rather than on consumer or office printers.

6.2 Inkjet

Roberto Medeiros

Inkjet printing is a type of digital imaging where drops of ink are jetted onto the substrate in a very precise pattern from a nozzle. This nozzle, also called the print head, is required to be very precise and accurate, which is a challenge when you consider that the goal is to get many thousands of tiny drops of ink to land exactly where needed on the printed surface. Over time, inkjet technology has become more advanced, allowing greater resolution, more accurate colour, and overall, finer visual fidelity to the original. The most common method of inkjet printing for commercial purposes is called drop-on-demand (DOD). This type of inkjet print head only fires each individual droplet of ink when needed (on demand) and comes in two types, thermal or piezoelectric (see Figure 6.1). Accuracy in DOD inkjet printing is achieved by keeping the print head close to the surface being printed (substrate) as the velocity of the jetted ink is low.

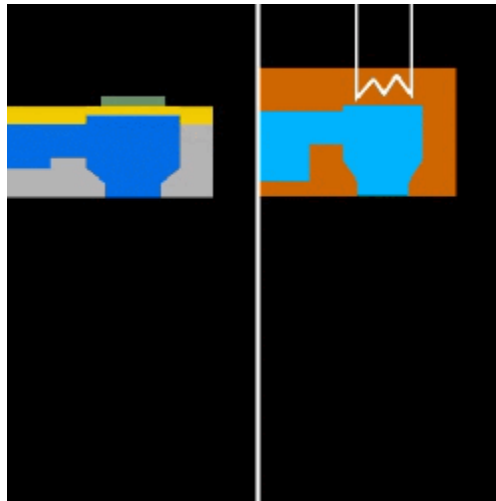


Figure 6.1 Piezoelectric head on the left, thermal on the right

Thermal Inkjet

In a thermal print head, each nozzle contains a special reservoir that is bounded by a heating element. When current is passed through the heating element, it causes the ink to expand rapidly, ejecting out of the nozzle to land on the substrate in a given position. The print head is made up of a matrix of many of these chambers, and each print head is connected to a different colour of ink. As the ejected ink leaves the chamber, fresh ink is drawn into the reservoir by surface tension and the vacuum created by the previous drop of ink leaving.

Thermal inkjet is most common in household and consumer grade inkjet printers. A major benefit to using thermal printhead technology is the relatively inexpensive print head. Since each colour printed requires a separate print head, and some print devices can contain eight or more colours of ink, thermal

technology keeps the initial cost of the device low and reduces replacement costs when a print head fails, or is damaged.

Piezoelectric Inkjet

Piezoelectric (piezo) print heads also use a tiny reservoir to hold a droplet of ink. However, unlike thermal printheads, piezo heads contain a small flexible membrane, or diaphragm, that moves up and down to squirt the ink out of the print nozzle. The pressure caused by the flexing of the piezo material is very precise, allowing a drop, or multiple drops, to strike the substrate accurately. Similar to thermal, the print head is made up of a matrix of a number of these individual nozzles. And by using multiple print heads, multiple colours are possible.

Piezoelectric is more common in commercial and large-format printing applications, although there are a few consumer grades of printers that use piezo as well. Piezo is more accurate, and because the ink in the chamber doesn't have to be vaporized to form the droplets of ink, piezo can print with a wider variety of inks such as aqueous, ultraviolet, and latex.

Types of Ink

Inkjet printing has become more advanced not only in the mechanics of how the print heads work, but also in the variety and usage of different types of ink. Below are some common types of ink and a brief explanation of how they might be used.

Aqueous Ink

Aqueous ink, as discussed earlier, is a water-based ink. This type of ink is used in consumer printers using thermal technology, but can also be used in commercial piezo printers as well. Aqueous is well suited to thermal technology because the formulation of the ink allows it to vaporize in the print head for expulsion onto the paper. The water component of the ink, however, also contributes to its greatest drawback: the susceptibility of the finished printed piece to run or smear if it gets wet. Many users of desktop printers in their homes have been disappointed when they take their printed pages outside in the rain. Even a few drops of water can cause the ink to run and bleed into the paper.

In commercial uses, aqueous inkjet is well known for colour fidelity and quality, but the finished piece has to be protected from moisture. These types of print products would most likely only be used indoors, mounted behind glass, or with a laminated plastic layer on top. There are water-resistant coatings that can be sprayed onto a finished product, but even then, you would not want to leave it outside for an extended period of time. Aqueous ink is a common choice for art prints.

Ultraviolet Inkjet

Ultraviolet (UV) ink is a type of **energy-cured ink** that stays wet until it is bombarded with ultraviolet radiation. This UV radiation is commonly projected onto the freshly printed surface by means of a special high-intensity light bulb. Once the UV rays hit the ink, a special molecular process is triggered,

causing the chains of molecules in the ink to bond and solidify instantly. UV ink does not dry from exposure to air, nor from heat. Once the UV ink has been cured, however, it is very solid and quite durable.

For commercial use, UV inks tend to be popular for outdoor uses such as banners and signage. Indoor signage is commonly printed using UV as well because of its durability and rub resistance. Since UV inks dry instantly, they can be removed from the printer and handled much sooner. UV inks sit mostly on top of the surface of the substrate, and because of their solid bond are more prone to cracking if bent or folded. UV is not a good choice of ink where flexibility of the substrate is required.

Latex Inkjet

Latex ink is a newer formulation that has exploded onto the inkjet printing scene in the last few years. Latex inks are water based and cure primarily through heat, but more importantly, they are not subject to moisture damage once cured. This is because the pigment is carried by the latex molecules, and once the latex has bonded to the substrate, the pigment stays intact. Latex printed products dry immediately and are ready to use as soon as they come off the print device.

Latex inks are used in many commercial applications, particularly where outdoor durability and flexibility are needed. One of the many common uses of latex inkjet printing is in imaging car wraps. A car wrap is a flexible adhesive material that is printed flat, then stretched or wrapped around the contours of a vehicle, usually for marketing or advertising purposes. [Figure I.1](#) in the introduction of this textbook shows an example of a car wrap. Because of this flexibility, latex printed signage can also be adhered to rougher surfaces such as wood or brick. The popularity of latex can be attributed to a previously popular inkjet formulation that is solvent based.

Solvent Inkjet

Because of the rise in popularity of latex ink over the last few years, there has been a great decline in the use of solvent inkjet inks. Formerly, this was the type of ink needed for flexible, durable printing. Solvent inks are formulated using solvent as a carrier for the pigment, and as the solvent dries, the pigment remains bonded to the substrate. A big concern for the use of solvent-based printing is the release of volatile organic compounds, or VOCs. These VOCs are released into the atmosphere during the printing and drying of solvent prints, and have to be vented outdoors so as not to pollute the workspace. Even newer eco-friendly inks still release VOCs, albeit at a lower level. Some areas have environmental laws that restrict the release of pollutants into the air (United States Environmental Protection Agency, 2000). Customers often complain about the smell of solvent prints, particularly when used indoors. Because of this, solvent inkjet is primarily chosen for outdoor uses such as large-format signage, banners, and car wraps. Solvent can be very economical, and while the quality isn't as sharp as UV or aqueous, it is excellent for very large projects that will be viewed from even a moderate distance. Pressure on the solvent ink market comes because most of these uses can now be achieved with latex inks as well, and the industry has seen a divergence between companies that still use solvent or eco-solvent inks and those that are switching to latex.

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6.3 Electrophotography

Roberto Medeiros

Electrophotography (also known as xerography) is a complex process commonly used in copiers and faxes, as well as in digital printers. It is an imaging technology that takes a digital file and utilizes a photoreceptor, light source, electrostatic principles, and toner to produce the printed output. Before this process was used for digital printing, it was extensively used in analog copiers where a lamp illuminated the page being copied, and then a series of mirrors reflected the page directly onto the surface of a drum. Digital copiers replaced the direct light path with a sensor that converts the analog image into digital information, then a laser or an **LED** array writes the image onto the drum. Many digital printers today are based on the same platform as digital copiers. The technology has seen many improvements over the years, but the electrophotographic process at its core remains relatively unchanged.

Photoreceptor

The photoreceptor is commonly referred to as a drum. It is a cylinder coated with a material that becomes conductive when exposed to light. Areas that are not exposed have a high resistance which allows these areas to hold the electrostatic charge necessary for the process.

Light Source

Light sources used in digital printing include LED arrays or, more commonly, lasers. VCSEL (vertical cavity surface emitting laser) is an advanced type of laser used in the most current digital presses in the market. A VCSEL array can position its beam with high accuracy (addressability) for optimal clarity, resolution, and image positioning. This makes it ideally suited for a digital press.

Electrostatic Principles

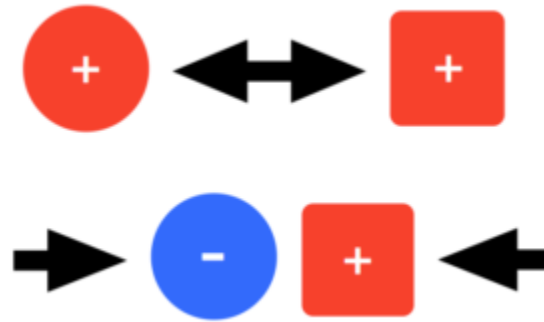


Figure 6.2 Like charges repel each other while opposite charges are attracted

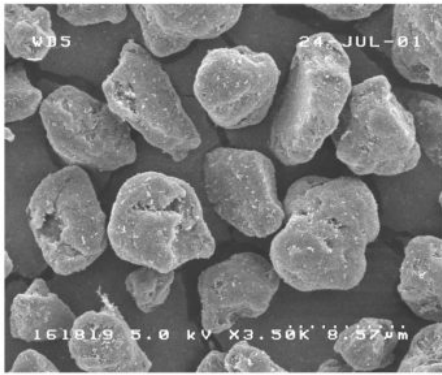
To understand electrophotography, we must first understand some basic electrostatic principles. When certain materials come in contact then separate from each other, these materials can become electrically charged. Rubbing these materials together can increase this effect. This is called the **triboelectric effect**. Static electricity buildup on your clothes in a dryer or from rubbing a balloon on your hair are examples of the triboelectric effect. Charges can have either a positive or negative polarity. Like charges repel each other while opposite charges are attracted, in much the same way as the polarities in magnets (see Figure 6.2).

These properties are at the core of the technology and are utilized in almost every stage of the digital imaging process.

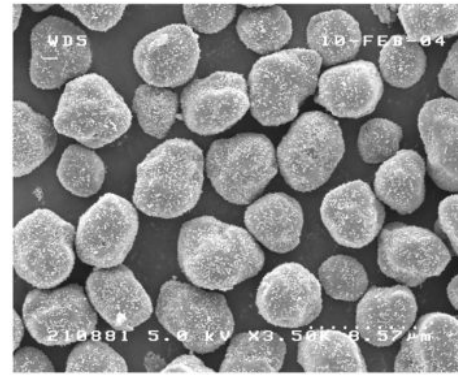
Toner Basics

Toner is a very fine, dry powder medium used in the electrophotographic or xerographic process. It is composed primarily of a resin and includes pigment, wax, and process-enhancing additives. The term *xerography*, in fact, is derived from the Greek words *xeros*, 'dry' and *graphia*, 'writing,' reflecting how toner rather than ink is used in the imaging process. Toner particles become electrically charged when stirred or agitated through a triboelectric effect. The composition of the toner not only contributes to its imaging characteristics but to its ability to maintain and control its charge properties. The shape of the toner also is a factor in its charging capability. This electrical charge is what allows the toner to be precisely manipulated throughout the process.

There are two basic types of toner production, pulverized and chemical (Figure 6.3). Pulverized toner was commonly used in earlier digital printers and is manufactured by successive compound mixing and grinding steps until the desired consistency and size is achieved. The resulting toner particles are irregular in size and shape and typically average around 6.2 to 10.2 microns in size. Pulverized toner produces good results, up to 600 dpi resolution; however, a consistent size and shape along with a smaller particle size is required to produce better clarity and detail at higher resolutions.



従来の粉砕トナー
(Conventional pulverized toner)



EA-HGトナー
(EA-HG toner)

Figure 6.3 Two basic types of toner production

Chemical toners were introduced later to overcome those limitations and are in common use today. Each manufacturer has its own process for creating this type of toner and unique names as well. Xerox's EA toner, Ricoh's PXP toner, and Konica Minolta's Simitri toner are all examples of chemical toners. As the name suggests, chemical toners are created through a process of building or 'growing' the particle chemically. This process allows for the precise control of the shape and size of the toner particle (under 5 microns in some cases), resulting in higher definition and resolution capabilities. Resolutions of 1,200 dpi and 2,400 dpi are possible largely due to the use of this type of toner. Other benefits include much lower energy consumption, both in the manufacturing process and printing process, as well as narrower particle size and charge distributions.

Here is a YouTube video of [how chemical toner is made](https://youtu.be/852TWDP61T4): <https://youtu.be/852TWDP61T4>

Dry toner comes in two forms: mono component and dual component. Both rely on magnetic iron or iron oxide particles to 'hold' the charged toner on a magnetic roller. Mono component toners incorporate the magnetic material in the composition of the toner particle itself where dual component toners have the magnetic material mixed together with the toner but as separate components. This mixture is called developer.

ElectroInk

ElectroInk is a unique form of toner used in HP Indigo digital presses. The toner comes in the form of a paste and is mixed internally in the press with imaging oil, a lightweight petroleum distillate. This type of toner is considered a liquid toner as the particles are suspended in the liquid imaging oil, but still uses an electrophotographic process for imaging. One of the important advantages of this type of toner is its particle size. ElectroInk toner particles are 1 to 2 microns, significantly smaller than the smallest dry toner particle. At this size, a dry toner would become airborne and would be very difficult to control. The toner and oil suspension achieves higher resolutions, uniform gloss, sharp image edges, and very thin image layers. A thin image layer allows the toner to conform to the surface of the substrate, producing a consistent look between imaged and non-imaged areas. A drawback of this toner, however,

is that substrates may need to be pre-treated in order for the toner to adhere properly. There are substrates available for use specifically on HP Indigo digital presses, but typically these are more expensive or may not be compatible with other printing methods. Some Indigo presses are equipped with a pre-treating station that expands substrate compatibility extensively and even surpasses that of other forms of digital printing.

Nanography

Nanography is a very new and exciting print technology currently in development by the creator of the Indigo digital press, Benny Landa. It borrows some of the same concepts used in the Indigo but with a different approach to the implementation of these. The technology centres around NanoInk, a breakthrough ink with pigment sizes in the tens of nanometers. In comparison, pigments found in good-quality offset inks are in the 500 nanometre range. Colorants intensify and ink density increases at this microscopic level, thereby expanding the ink's colour gamut considerably. The ink uses water as a carrier instead of imaging oil making it more cost effective and eco-friendly. Billions of ink droplets are jetted onto a heated blanket, not directly onto the substrate as in inkjet printing. The ink spreads uniformly on the blanket and the water quickly evaporates leaving only an ultra-thin (approximately 500 nanometres), dry polymeric film. This film transfers completely onto the substrate on contact and produces a tough, abrasion-resistant image. This print technology can be used with almost any substrate without pre-treatment and, due to its minuscule film thickness, does not interfere with the finish. Whether high gloss or matte, the ink finish matches that of the substrate. Although the technology is poised to revolutionize the print industry, the first press to use it is currently in beta testing. You can find the latest news and more information on nanography on this [webpage](http://www.landanano.com/nanography): <http://www.landanano.com/nanography>

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- [EA-HG toner](#) © Fuji Xerox Co., Ltd

6.4 Electrophotographic Process

Roberto Medeiros

The electrophotographic process consists of seven stages (see Figure 6.4). For the purpose of this text, we will be describing the process using a negatively charged dry toner. The process is the same for a positive toner except the polarity would be reversed in each stage.

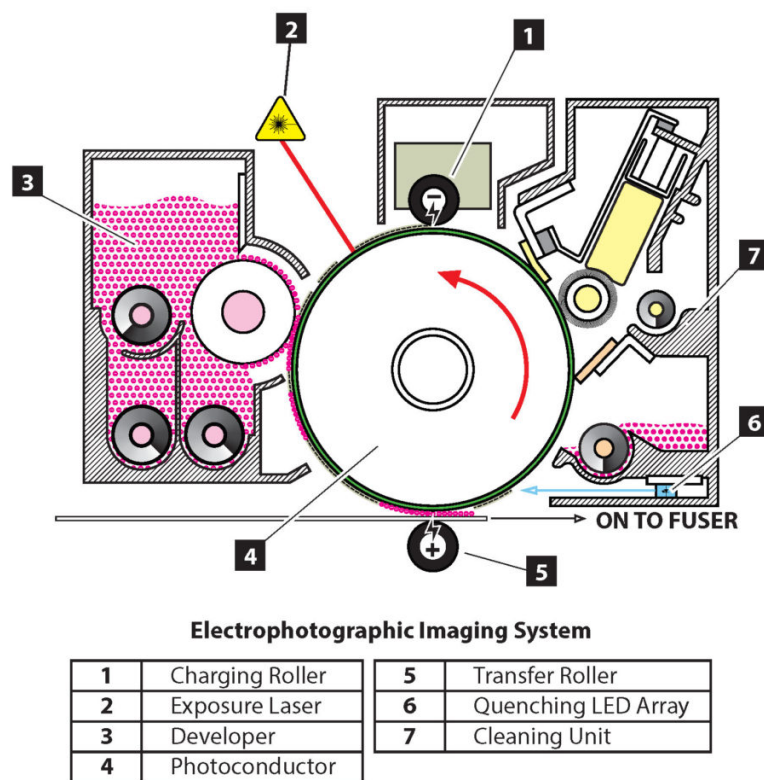


Figure 6.4 Electrophotographic Imaging System

Charging

In the first stage, a high negative voltage of approximately -900 volts is provided to a charge roller (see Figure 6.5). The voltage used varies by manufacturer and model. The charge roller applies a uniform layer of negative charge to the surface of the drum. The resistivity of the unexposed photosensitive drum coating allows the charge to remain on the surface.

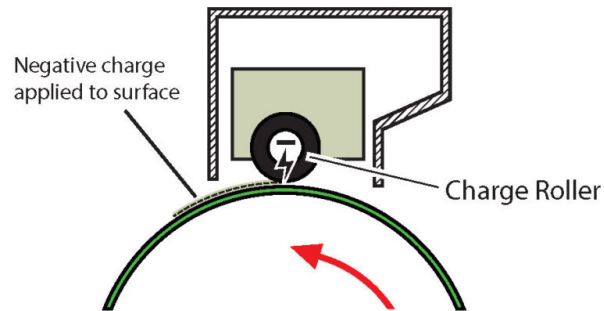


Figure 6.5 Charge roller

Exposure

A laser is used to write the image onto the charged surface (see Figure 6.6). Because the photosensitive coating on the drum becomes conductive when exposed to light, the charges on the surface of the drum exposed to the laser conduct to the base layer, which is connected to a ground. The result is a near zero volt image and a negative background. This is known as the latent image.

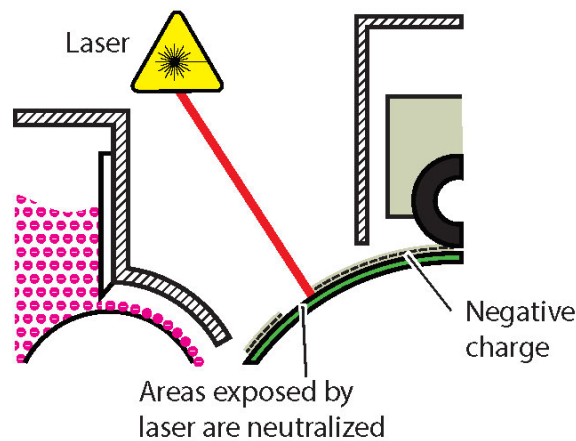


Figure 6.6 Exposure

Development

Many digital printers and presses use a dual component development system (see Figure 6.7). The developer is a mixture of non-magnetic toner and a magnetic carrier. As the developer is stirred and the particles rub up against each other, a triboelectric charge is generated between the them. The toner becomes negatively charged while the carrier becomes positive. The opposite charges cause the toner to be attracted to the carrier. A magnetic development roller holds the mostly iron carrier in alignment with magnetic lines of force forming a magnetic brush. This magnetic brush in turn 'carries' the attracted toner to the surface of the drum. A high negative bias is applied to the development roller repelling the

toner onto the drum. The toner is attracted to the areas of the drum exposed by the laser, which, being close to zero volts, is much more positive than the negatively charged toner. In this way, the latent image is developed. As the carrier remains on the development roller, it continues to attract toner from the hopper to maintain the optimal concentration on the magnetic brush.

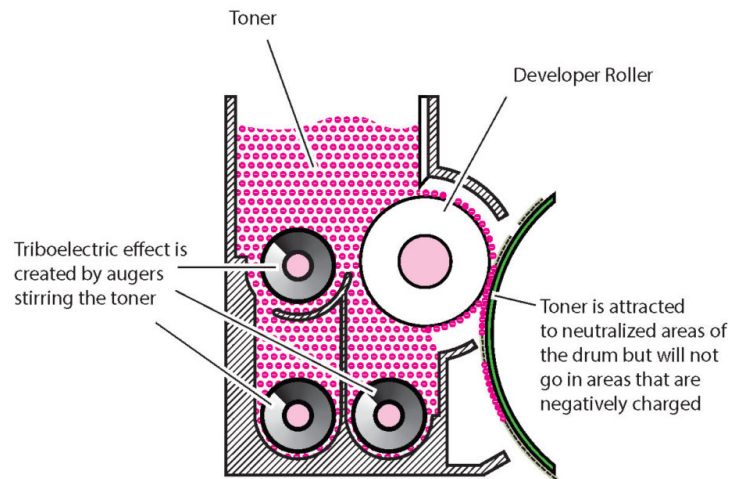


Figure 6.7 Development

Transfer

A sheet of paper or substrate passes between the drum and a transfer charge roller that has a high positive voltage applied to it (see Figure 6.8). The negatively charged toner of the developed latent image on the drum is attracted to the more positive transfer roller and adheres to the sheet in-between. The charge applied to the back of the sheet causes the paper to cling to the drum. A high negative voltage is applied to a discharge plate immediately after the transfer charge roller to aid in the separation of the sheet from the drum. The curvature of the drum along with the weight and rigidity of the sheet also aid in the separation.

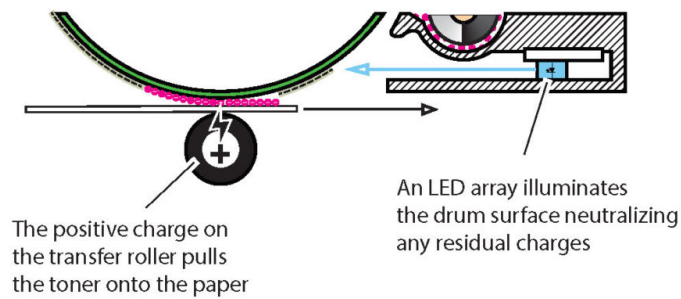


Figure 6.8 Transfer

A more advanced method of transfer utilizes an intermediate transfer belt system. This is most common on colour digital presses where four or more colours are transferred onto the belt before transferring the complete image onto the sheet. Charge rollers beneath the belt, under each drum, pull off the developed **latent images** of each separation directly onto the belt. In the transfer stage, a transfer charge roller beneath the belt applies a negative charge to push the toner onto the sheet. A second roller, directly beneath the first on the other side of the belt, applies pressure keeping the paper in contact with the belt and aiding in transfer for more textured stocks. The lower roller may have a small positive charge applied to it or may be grounded. Some systems can also alternate the charge applied to the transfer charge roller to further aid toner application onto textured substrates.

After this stage, the sheet moves on to fusing where the toner permanently adheres to the substrate. The next two stages described below are post-imaging steps that are necessary to prepare the drum surface for the next print cycle.

Cleaning

After the transfer stage, some toner may be left behind on the surface of the drum. If left there, the background of each successive print would slowly become darker and dirtier. To prevent this, a cleaning blade removes any residual toner from the drum's surface (see Figure 6.9). Some systems will recycle this toner back to the developing unit, but mostly the waste toner is collected in a container for disposal.

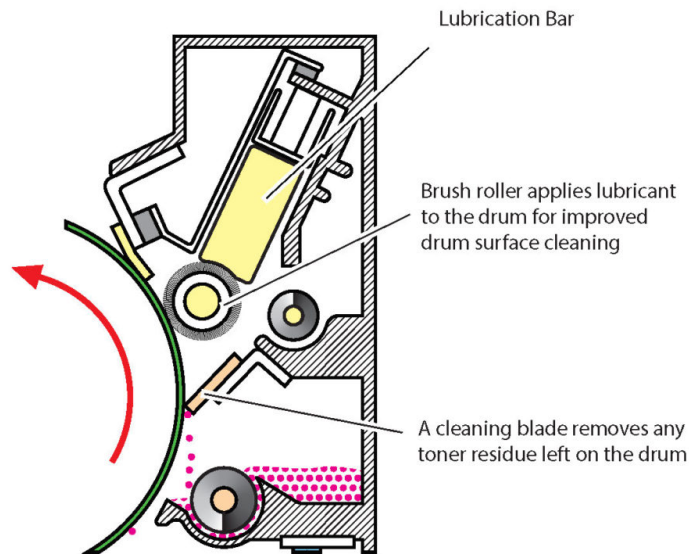


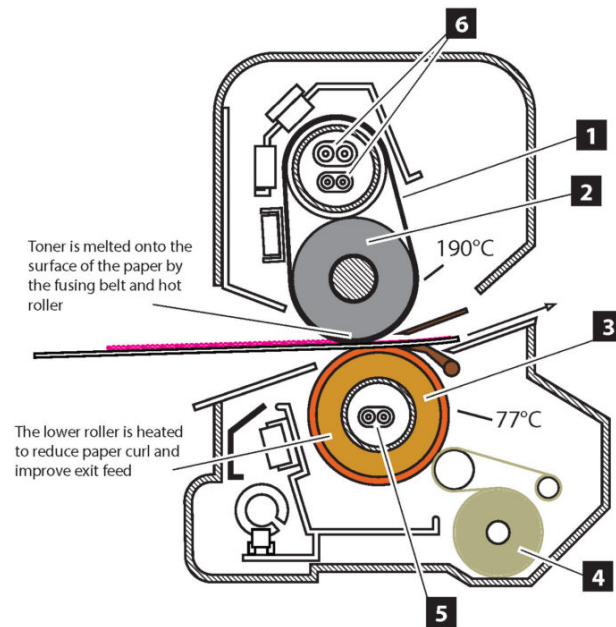
Figure 6.9 Cleaning

Erasing

In this stage, an LED array exposes the length of the drum, bringing this area of the drum to near zero volts. This prepares the drum surface for the charging stage of the next print cycle.

Fusing

This is the final stage in the electrophotographic process. The fusing mechanism, or *fuser*, consists of a heat roller, a pressure roller, and cleaning mechanism (see Figure 6.10). Toner is composed mostly of resin. When the toner is heated by the heat roller and pressure applied by the complement pressure roller, it melts and is pressed into the fibres of the sheet. The toner is never absorbed by the paper or substrate but rather is bonded to the surface. A negative charge is applied to the heat roller or belt to prevent the toner from being attracted to it and the cleaning section removes any toner or other contaminants that may have remained on the heat roller. Heat may also be applied to the pressure roller (at a much lower temperature) to prevent the sheet from curling.



Fuser

1	Fusing Belt	4	Cleaning Belt
2	Hot Roller	5	Lower Heater
3	Pressure Roller	6	Upper Heaters

Figure 6.10 Fusing

Along with the transfer stage, fusing can be greatly affected by the paper or substrate used. The thicker and heavier the sheet, the more heat it absorbs. Because of this, these sheets require higher temperatures so there is sufficient heat remaining to melt the toner. Insufficient heat can cause the toner to scratch off easily or not bond at all. Too much heat can cause moisture in the substrate to evaporate quickly and get trapped beneath the toner causing tiny bubbles that prevent the toner from sticking wherever they occur. This issue is seen more on thinner stocks that do not absorb as much heat. Too much heat can also cause toner residue to stick to the heater roller and deposit it on subsequent sheets.

The heat roller can heat up quite quickly but may take much longer to cool down. This can cause delays in producing work that switches between different paper weights. To combat this, some devices use a thin belt that can be both heated and cooled quickly in place of the heater roller. In some cases, a cooling mechanism is also employed further mitigating the cooling lag.

Media Attributions

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- EP Imaging System – Transfer © Roberto Medeiros

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- EP Imaging System – Fusing © Roberto Medeiros

6.5 Paper Basics

Roberto Medeiros

When talking about substrates used in printing, paper is usually what comes to mind. Paper is made most commonly from wood fibre. Today, many papers also have some percentage of recycled fibre as well as fillers and other additives. These all contribute to the quality of the paper itself and to the quality of the printed output. It's important to understand some basic attributes of paper as they all have a direct impact on imaging processes and results.

Formation

Formation refers to the distribution of fibres, fillers, and additives in paper and how evenly they come together. When you hold a sheet up to a strong light source and look through it, the mix of dark and light areas are the result of formation. The more uniform the formation, the less mottling is observed in the paper. Papers with uniform formation accept inks and toners more evenly, have reduced print mottling, and enhance clarity.

Opacity

In strict terms, opacity is the degree to which light is prevented from travelling through a paper. In practical terms, it's how well a paper prevents the image on the backside of a sheet showing through to the front. This is measured on a scale from 1 to 100, where 100 is completely opaque. **Opacity** can be increased with fillers, pigments, or even coatings. In general, a thicker paper, coloured paper, or coated paper is more opaque than its counterparts. Opacity values are very important when projects require thinner paper stocks and both sides of the sheet are being printed.

Basis Weight and Grammage

When looking at the label on a ream of paper used in North America, you usually see two weight designations: the **basis weight**, designated in pounds (#) and the equivalent **grammage**, in grams per square metre (g/m^2 or gsm). In most of the world, grammage is primarily used. In North America, the basis weight is more common. Grammage is simply how many grams per square metre paper weighs. No other factors are represented by this designation. So we can deduce that the higher the grammage, the thicker or denser the sheet. Basis weight is the weight of 500 sheets of paper at a specific size, known as the 'parent' sheet size, which varies based on the historical use of the specific paper. To understand this better, let's examine two different basis weights.

Cover basis weight is based on a 20" x 26" parent sheet. So 500 sheets of 80# cover (the # symbol is used to indicate pounds) at the parent sheet size weighs 80 pounds. Likewise, 500 sheets of 80# text at the text-weight parent sheet size of 25" x 38" also weighs 80 pounds. This can be very confusing as a cut

sheet of letter (8.5" x 11"), 80# text, is much thinner than the same size of 80# cover. Table 6.1 shows common basis weights, parent sheet sizes, and typical uses.

Table 6.1 Paper weights, sizes, and uses

Basis Weight	Parent Sheet Size	Typical Use
Bond	17" x 22"	Historically used as writing paper and typically uncoated. Standard office paper is 20# bond, while colour prints are more commonly done on 24# or 28# bond due to the need for higher opacity.
Cover	20" x 26"	Used for paperback book covers, business cards, post cards. Business cards have typically been 100# cover, but have been trending toward higher weights of 110# and 120#.
Text	25" x 38"	Used for magazines and posters. Relatively thin sheets with higher opacity. Magazines typically use a coated text weight paper for both the cover and the body. Typical weights are 70# to 100#.
Index	25.5" x 30.5"	Used for index cards and tab stock. Tab stocks are typically uncoated 90# index.

Although basis weight is used as the primary weight on a paper label and description, a digital press will typically use grammage to define the weight property when assigning a paper to a tray. Paper weight is one of the key characteristics that affect many parameters on the digital press, including how much vacuum strength is used for feeding, how much charge is required to transfer toner to paper, and how much heat is required to maintain a consistent fusing temperature to bond toner to the paper, among others. Entering the wrong values for the paper weight can cause paper misfeeds, poor image quality, or toner not adhering to the paper. Using grammage simplifies data entry and avoids errors due to incorrect basis weight selection for the numeric weight value. It may, however, require one to do a conversion calculation if only basis weight is provided. The following conversion factors can be used to do these calculations.

Conversion Factors:

Bond (lbs.) x 3.7606 = gsm

Cover (lbs.) x 2.7048 = gsm

Text (lbs.) x 1.4805 = gsm

Index (lbs.) x 1.8753 = gsm

Grain Direction

In the paper manufacturing process, a slurry of fibre travels over a high-speed mesh conveyor belt that is oscillating side to side. This action and movement causes the fibres to interlace and develop a predominant alignment along the direction of movement. This predominant alignment of the fibres is called **grain direction**. Short grain refers to fibres running parallel to the short dimension of the sheet, and, conversely, long grain refers to fibres running parallel to the long dimension of the sheet.

It is important to keep grain direction in mind when choosing a paper for a project. You need to consider the print process and binding or finishing method you will use, as choosing the wrong grain direction can produce poor results or may be incompatible with the printing method you have chosen. Sheet fed offset lithography papers are often long grain and are most common. Digital presses require the grain to run perpendicular to the feed direction in order to feed properly and make the sharp turns typically found in a digital press. In this case, most sheets are fed into the press with the short edge first therefore requiring short grain paper. When folding is required, folds that run parallel to the grain will be smooth and sharp while folds that run across the grain will be ragged, and the fibres on the top of the sheet may pull apart. Toner used in digital printing bonds to the surface of the paper and does not penetrate. Folding across the grain will cause the toner to break apart where the fibres separate.

The second or underlined dimension of the sheet will indicate the direction of the grain. For example, 18" x 12" is a short grain sheet, and 12" x 18" is long grain. If the underline method is used, short grain would be 12" x 18" and long grain would be 12" x 18". If the dimensions are not noted or the sheet is not in its original packaging, grain direction can be determined by folding the sheet along both dimensions. As noted previously, a fold that runs parallel to the grain will be smooth and sharp while a fold that runs across the grain will be ragged. You can also gently bend the paper in either direction. The bend running in the direction offering the least resistance is the grain direction.

Caliper

Caliper, unlike grammage and basis weight, is a measure of thickness. The most common measurement used in North America is thousandths of an inch, designated as points (common for paper) or mils (common for synthetic paper). This terminology can be confusing, however, as points can also refer to 1/72 of an inch when referring to font size, line thickness, and dimensions on a page. Mils can be confused with millimetres as well. A common misconception is that points and mils can be converted to grammage or basis weight. This is not true. The caliper can vary depending on the coatings or finish. In general, a rougher finished stock will have a higher caliper than the same weight of a smooth stock. Coatings can be heavier than paper fibre so coated paper can have a smaller caliper than the same weight of an uncoated counterpart. A process called calendaring, which irons the paper between two highly polished chrome rollers, improves smoothness and printability but also reduces the caliper without changing the weight of the paper.

Brightness and Whiteness

Brightness and **whiteness** define the optical properties of paper and differ mainly in how they are measured. Whiteness measures the reflective properties of the paper across the entire visible spectrum of light (defined by CIE). In other words, it defines how white the paper is. A perfect reflecting, non-fluorescent white material measures 100 whiteness. Brightness also measures the reflective properties of paper, on a scale of 1 to 100, but specifically in the blue area of the spectrum at a principal wavelength of 457 nanometres and 44 nanometres wide (defined by TAPPI and ISO standards). This wavelength coincides with lignin absorption. Lignin is what binds the cellulose fibres in wood and pulp and gives it its initial dark brown colour. The more bleaching done to the pulp, the more lignin is removed, and the higher the blue reflectance and therefore brightness. In most parts of the world, paper whiteness

measurement is used; however, in North America, most papers use brightness measurement instead. Some papers have brightness values that exceed 100. This is due to the addition of fluorescent whitening agents (FWAs), which return additional blue light when exposed to UV light. The same is true for whiteness, as papers with higher blue reflectance levels tend to have higher whiteness levels.

Finish

Finish defines the look and feel of the paper's surface and can be achieved during the paper-making process (on-machine) or after (off-machine). On-machine finishes are achieved by the application of a pattern onto the paper by a marking roller while it is still wet. Examples of on-machine finishes are smooth, vellum, laid and felt (see Table 6.2). Off-machine finishes are accomplished with rollers that press the pattern into the paper after it has been made. Off-machine finishes are also known as embossed finishes. Linen, stipple, and canvas are examples of these; Table 6.3 gives a description of each.

Table 6.2 On-machine finishes

On-machine Finishes	Description	Typical Uses
Smooth	Paper is passed through various calendaring rollers, producing a finish that is uniform, flat, and smooth to the touch.	Ideal for general digital printing and copying as toner is applied to the surface and does not penetrate the fibres.
Vellum	A consistent eggshell appearance that is not quite as smooth as smooth finish but has a velvety feel. Not to be confused with the substrate called vellum, which is translucent.	Used most commonly for book paper.
Laid	Consists of a series of wide-spaced lines (chain lines) and more narrowly spaced lines (laid lines), which are at 90 degrees to the chain lines.	Used for letterhead, reports, presentations.
Felt	A felt-covered roller is used to produce this finish. The appearance resembles that of felt.	Used for letterhead, reports, presentations.

Table 6.3 Off-machine finishes

Off-machine Finishes	Description	Typical Uses
Linen	A cross-hatch pattern resembling linen fabric.	Used for personal stationery, letterhead, fine-dining menus, business cards.
Stipple	A fine bump texture that resembles the painted surface of a wall.	Used where a subtle uneven texture is desired.
Canvas	Simulates the surface of canvas.	Used for art prints or where a 'painted' appearance is desired.

Coated papers have calcium carbonate or china clay applied to their surface. The coating fills in the spaces between the fibres on the paper's surface, resulting in a smoother finish. The amount of coating and calendaring produces different finishes and gloss appearance. Examples of coated finishes are matte, dull, satin, silk, and gloss, described in Table 6.4.

Table 6.4 Coated finishes

Coated Finish	Description	Gloss Level
Matte	Roughest surface of coated paper. Very flat, no lustre, no glare, no calendaring applied.	None
Dull	Smoother surface than matte. No luster, no glare, minimal calendaring.	Very low
Satin	Smooth and soft to the touch. Slight lustre, low glare, light calendaring.	Medium low
Silk	Smooth and silky to the touch. Low lustre, low glare, light calendaring.	Moderate
Gloss	Smooth and slick. Shiny, high calendaring.	High

Cast coated paper has a very high gloss finish on the front side and is uncoated and rough on the back. The high gloss finish is created by applying a heated chrome roller to the coated surface to quickly dry it while moisture is released through the uncoated back of the sheet. Calendaring is not used, allowing the back surface to be rough and ideally suited for labels. Cast coated paper holds ink well, but the toner used in digital printing may not adhere to it.

6.6 Page Description Languages

Roberto Medeiros

Many page description languages (PDL) exist today; however, Printer Command Language (PCL) and PostScript are the most common and widely adopted. Each has its strengths, weaknesses, and jobs for which it is best suited. It is important to understand these differences and choose the method best suited to your particular printing requirements.

PCL

PCL is a page description language developed by Hewlett-Packard (HP) and was originally used on HP impact and inkjet printers. PCL 3 was the first version to be used with a laser printer, the HP LaserJet, released in 1984, around the same time PostScript was introduced. The goal of PCL was to have an efficient printer control language that could be implemented consistently across HP's printer line. Simple commands and functionality would not require expensive print controllers, making it very attractive for utility-level printing. Many other printer manufacturers implemented PCL for this reason. Commands are embedded at the beginning of the print job and set the parameters for the printer to use for the job. These commands remain set until a new value is assigned for the command or the printer is reset. If the printer does not support a specific command, it ignores it.

When colour laser printing became available, PCL 5c was developed with similar goals. New commands were added to the existing command set, as was the case with all the predecessors, to add support for colour printing. This ensured backwards compatibility while minimizing development. When it came to colour, HP's goal was to have colour on the printed page look the same as what was displayed on screen. There were many challenges to achieving this, so print quality adjustments were included to give users the ability to fine-tune the output. With the emergence and widespread adoption of the sRGB standard to define and describe colour on a display, the PCL colour command set could be simplified by adopting this standard for colour printing. Thus, HP's goal could be achieved without the complexity and overhead of a full colour management system. Operating systems and applications, for the most part, have standardized how they display colour in sRGB, so this approach is the simplest way to achieve acceptable colour between display and print. PCL is most appropriate for general office use where a simple, low-cost print device that produces good quality colour is expected. It is not suitable, however, for a colour critical or print production environment where precision and full colour management is required.

PostScript

PostScript is a page description and programming language developed by Adobe that describes text, graphics, and images, and their placement on a page, independent of the intended output destination. The code created is in plain text that can be written and examined with a basic text editor. The output itself can either be to a printer, display, or other device possessing a PostScript interpreter, making it

a device independent language. The interpreter processes the PostScript instructions to create a raster image the device can render. The interpreter is often referred to as a RIP or raster image processor for this reason. It is possible to write valid PostScript code from scratch, but it is impractical as page composition applications can either generate the PostScript code directly or can utilize a print driver, which can convert the page to the PostScript language.

Since PostScript is a general-purpose programming language, it includes many elements that you wouldn't associate specifically with printing such as data types (numbers, arrays, and strings) and control primitives (conditionals, loops, and procedures). It also has an interesting feature called *dictionary*, which stores information in a table consisting of a collection of key and value pairs. The values can be entered into the dictionary while the keys are used to reference the information needed. These features made possible documents that acted like an application which could generate pages dynamically from data directly on the printer itself. These printer-based applications were stored temporarily in memory or permanently in the printer's hard drive, and triggered by a command in the print stream. These capabilities made variable data printing possible using PostScript and are still being used today for that purpose.

The first printer to use PostScript was the Apple LaserWriter in 1985. The same day that Apple announced the LaserWriter, Aldus Corporation announced PageMaker, a page layout application developed to take advantage of the Apple Macintosh computer's GUI (graphical user interface) and the PostScript PDL. This series of events is considered by many as the genesis of the desktop publishing revolution. In fact, the term *desktop publishing* is attributed to the founder of Aldus Corporation.

PDF

Portable document format (PDF) is one of the most popular file formats for displaying and printing documents. When this format was released by Adobe in 1993, it shared many of the same concepts and components of PostScript. But where PostScript was designed primarily to provide device independent consistency in print output, PDF was focused on maintaining the visual appearance of a document onscreen, independent of the operating system displaying it. Over the years, PDF has expanded to more specific-use specifications for engineering, archiving, health care, universal access, and printing.

PDF/X is a branch of PDF and an ISO standard that deals specifically with print. It was developed by the Committee for Graphic Arts Technologies Standards (CGATS). Table 6.5 shows the evolution of the standard.

Table 6.5 Evolution of PDF
Data source: Adobe Systems Inc, 2008, p. 4

Preset	Compatibility	Settings	Usage
PDF/X-1a: 2001	Acrobat 4/PDF 1.3	<ul style="list-style-type: none"> • Convert RGB colour to CMYK (spot colors allowed) • Transparency flattened 	PDF/X-1a ensures that the files are ready for print production—fonts are embedded, colours must be CMYK or spot, layers and transparency are flattened. Note that there is no minimum resolution required for PDF/X.
PDF/X-1a: 2003	Acrobat 5/PDF 1.4		
PDF/X-3: 2002	Acrobat 4/PDF 1.3	<ul style="list-style-type: none"> • Leave RGB and CIELab color unchanged (profiles allowed) • Transparency flattened 	PDF/X-3 has all the benefits of PDF/X-1a plus it allows colour-managed workflows.
PDF/X-3: 2003	Acrobat 5/PDF 1.4		
PDF/X-4: 2008	Acrobat 7/PDF 1.6	<ul style="list-style-type: none"> • Leave RGB and CIELab colour unchanged (profiles allowed) • Live (unflattened) transparency • Layers allowed 	Has all the benefits of PDF/X-3 plus it allows live (unflattened) transparency and layers for versioning. Print workflows based on the Adobe PDF Print Engine will be able to process PDF/X-4 jobs natively, without flattening artwork or converting to PostScript.
PDF/X-4p: 2008	Acrobat 7/PDF 1.6		Use PDF/X-4p when a required ICC profile is unambiguously identified and supplied separately.

Submitting documents for print using one of these standards is highly recommended as it eliminates many of the causes of print issues and is a more reliable method for graphics file exchange.

Digital Front End

Digital front end (DFE) describes the combination of hardware and software that drives and manages a print device. Hardware is often custom built for this specific purpose and may have proprietary video interfaces that connect directly to the print engine. An operating system serves as the base for the software components of the DFE and is often Microsoft Windows based or a Linux or Unix variant. Although the Windows running on a DFE is much the same as its desktop counterpart, Linux- and Unix-based systems are often custom distributions that are compiled specifically for the DFE.

One of the key components of a DFE is the raster image processor (RIP). The RIP refers to the software component that interprets the PDL and performs the function of rendering or rasterizing the complete instructions into an image or raster the print engine will reproduce. The term RIP is often used interchangeably with DFE. This may have been accurate in the past when a DFE really only performed the ripping function and little else. Modern DFEs, however, do much more. In fact, a DFE may contain

multiple RIPs, and within those RIPs they can utilize the multi-threading and processing power of modern computer hardware and operating systems to process many pages or channels simultaneously. PostScript has been the defacto PDL in digital printing for many years but with the development of the PDF/X print standards and the subsequent release of the Adobe PDF Print Engine (APPE), a native PDF RIP, many DFEs now include both PostScript and APPE as their available RIP engines.

ICC-based colour management workflow may be part of the RIP process or can be an independent component of the DFE. Different elements within a print file get processed through their respective channels in the colour management system. Common channels include CMYK, RGB, black, and named colours. The idea is to convert all colour elements into the colour gamut of the print engine's colorants/paper combination. The conversion process can be complicated, but the basic concept is device dependent source colour spaces (CMYK, RGB, etc.) are converted to a device independent colour space, referred to the profile conversion space (PSC), then from the PSC to the output gamut defined in the output ICC profile. The idea is to take the source 'recipe' and define the visual appearance of it first. That is why it needs to convert to device independent colour space, which defines the visual appearance of colour. Once the visual appearance is defined, the 'recipe' for the specific output can be calculated.

Systems that support named or spot colour rendering follow a similar process. The named colour is located in a look up table. The name must match perfectly, including punctuation, spaces, and case. Each named colour is defined in a device independent colour space, typically Lab. There is no calculation in this step. The last step is the same; Lab values are then converted via the output profile.

There is one more calculation applied before passing the information through to the printer. Electrophotography is affected by rapid changes in humidity and temperature. The electrophotographic process relies on components that do become less effective over time and use. These factors all affect the colour output. Calibration should be performed on a regular basis to compensate for these variables. Calibration is a process of creating a correction curve to maintain consistent and repeatable print output. This correction curve is applied right after the conversion to output profile, ensuring output is consistent with what was defined in the output profile itself.

In order to maintain all these aspects of the DFE, an intuitive and user-friendly interface is critical. The user interface includes many components. Here is where you would configure the DFE, find the status of the print device and consumables, view and process jobs and job queues, and examine and export job histories and logs. Many WYSIWYG tools are accessed via the user interface, such as those for workflow, imposition, complex job composition, paper libraries, spot colour refinement, the launching of external tools, and even interfaces into other systems such as web2print. DFEs are becoming more powerful and perform more than just the traditional RIP functions. As the digital print industry continues to evolve, DFEs will be called on to perform more duties and functions. User interfaces will need to evolve as well to maintain usability and stay intuitive.

6.7 Variable Data Printing

Roberto Medeiros

Variable data printing, or VDP, refers to a special form of digital printing where document content is determined by entries in a record or data set and can be highly personalized. Varied text, graphics, and images are typical content elements, but layout, element positioning, and even document choice are just some of the other variables. Because the content on the printed page is constantly changing, it would not be feasible to produce this type of print product with traditional offset lithography or with any other process that requires a fixed image plate. Electrophotographic and ink jet printing are ideally suited for this type of printing as each page is imaged individually.

VDP can take many forms. Transactional documents like invoices and statements are probably the oldest form of VDP, but these have evolved to include marketing or informational content. This is known as trans-promo or **trans-promotional**. A mail merge is a simple form of VDP where a static document has data elements added directly to it. Each record in the data set produces one document. Another VDP form is when you enter the record manually or upload a simple text-based data table, which then fills the content of a template. This method is typically found in web2print solutions and produces items such as business cards, where the layout, fonts, and required elements can be predetermined and the content based on the data entered. More advanced VDP solutions may include campaign management tools, workflow management, two-dimensional barcode generation, image-based font technology, and integration into external systems such as databases, email, web2print solutions, data cleansing, or postal optimization solutions.

One of the core purposes of VDP is to increase response rate and, ultimately, conversions to the desired outcome. In order to accomplish this, it is critical that the content presented is relevant and has value for the intended audience. Today, there are massive amounts of data available on customers and their behaviour. Analyzing and understanding customer data is essential to maintaining a high degree of relevancy and engagement with the customer.

VDP can be broken down into six key components: data, content, business rules, layout, software, and output method. Each component can vary in complexity and capability and may require advanced software solutions to implement. However, even the most basic tools can produce highly effective communications.

Data

Data used for VDP can be simply thought of as a table or data set. Each row in the table is considered a single record. The columns are the fields used to describe the contents of the record. Some examples of columns or fields would be first name, last name, address, city, and so on. The simplest and most common form of representing this table is by using a delimited plain text format like comma separated value (CSV) or tab delimited. The *delimiter* separates the columns from one another and a new line represents a new row or record in the table. Here is an example of CSV data:

"FirstName","LastName","Gender","Age","FavQuotes"

"John","Smith","M","47","Do or do not, there is no try."

"Mary","Jones","F","25","Grey is my favourite colour."

The first row contains the row headers or what the fields represent and is not considered a record. You'll notice that each field is separated by a comma but is also enclosed within quotes. The quotes are text qualifiers and are commonly used to prevent issues when the delimiting character may also be in the contents of the field as is the case with the first record above. Many VDP applications support more advanced, relational databases like SQL, but a query must be performed to extract the data to be used, which ultimately results in the same row and column record structure. The data must be attached or assigned to the document in the page layout or VDP application.

Content

Content refers to elements displayed on each page. This would include text, graphics, and images, both static and dynamic. Dynamic content uses placeholders, typically named by the column headers of the data, to mark the position of the element and reference the data in the specific column of the current record. When the document is rendered, the placeholder is replaced by the record data element.

"Dear <<FirstName>>..." becomes "Dear John..." when the document is rendered for the first record and "Dear Mary..." for the second record, and so on. A complete document is rendered per record in the dataset.

Business Rules

Business rules are one of the key elements that make VDP documents highly useful. They can be thought of as a series of criteria that are checked against the data to determine what gets displayed on the page. They can also be used to manipulate the data or filter out relevant content. In almost every case, some level of scripting is required. Advanced VDP solutions have built-in scripting capability, utilizing either common scripting language such as VBScript or JavaScript, or a proprietary scripting language that is only applicable in that specific application. If the page layout tool you are using to create your VDP document does not have scripting capability, you can apply business rules to data beforehand in a spreadsheet application like Microsoft Excel or even Google Sheets.

K	L	M	N	O
oneNumber	@BG	@Plane		
7-8192	=IF(
0-8369	IF(logical_test, [value_if_true], [value_if_false])			
3-3957				
1-9231				
9-1525				

Figure 6.11 Logical test

One of the most common methods for implementing a business rule is using a conditional or IF statement comprising a logical test, an action for a ‘true’ result, and an action for a ‘false’ result (see Figure 6.11).

The logical_test means that the answer will be either true or false. In this case, we want to change our graphics based on gender.

In plain English, you may say:

“IF gender is male, THEN use plane_blue.tif, or ELSE use plane_orange.tif”

In scripting, it would look something like this:

IF(Gender="male","plane_blue.tif","plane_red.tif")

When doing this in a spreadsheet, you would enter the script in a cell in a new column. The result of the script is displayed in the cell, not the script itself. This new column could now be used to specify the content to be displayed in your layout application. In dedicated VDP applications, the script is attached to the object itself and is processed and displayed in real time.

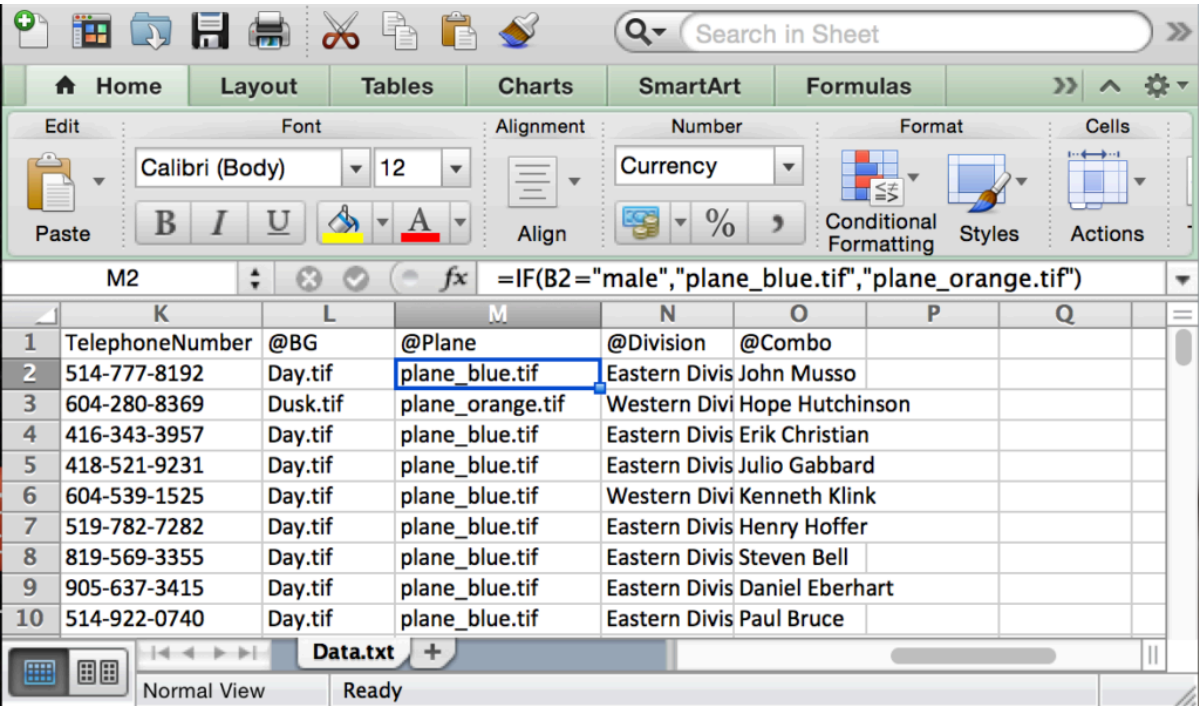


Figure 6.12 Plane blue

The “@Plane” column was added to dynamically change a graphic based on the contents of the cell in the “Gender” column (B2) (see Figure 6.12).

Business rules can also be applied to the VDP workflow. In this case, the workflow application or component can manipulate the data before applying it to a document, or it can select the document or destination to be used for the record and much, much more.

Layout

When working with variable data documents, there are special layout considerations you should be aware of. Because word lengths will change per record, there needs to be sufficient space to accommodate the largest and smallest record, and prevent **oversetting** while maintaining the desired visual appearance. This challenge is compounded by the prolific use of **proportional fonts**. Character widths differ with each letter so word lengths will vary even when the number of characters is the same. This can also force a paragraph to reflow onto another page and change the number of pages in the document. Additional scripting may be required to handle reflow scenarios. Some applications use special copy-fitting algorithms to dynamically fit text into a defined area. The use of tables for layout purposes can also be helpful. Because we are dealing with dynamically generated documents, we may also want to vary the images. Using images with a consistent size and shape make it easier to work with. Transactional documents, such as statements and invoices, extensively use numbers. Most fonts, including proportional ones, keep numbers mono-spaced. In other words, every number character occupies the same amount of space. This is important because, visually, we want numbers to be right justified and lining up vertically in columns with the decimal points aligned. There are, however, some fonts that do not follow this common practice. These fonts may be suitable for use in a paragraph but are not for displaying financial data.

Software

Software that can generate a data-driven document is required for variable data printing. In the early days of VDP, there weren't many choices for designers. It was common practice to hand code VDP in PostScript, since it was both a programming language and a PDL. Applications like PageMaker and Illustrator were PostScript design applications but lacked VDP capabilities. Applications like PlanetPress emerged as dedicated PostScript VDP applications. Today, designers have a wide variety of software available for creating VDP. There are three basic VDP software types: a built-in function within a page layout or word-processing software, a third-party plug-in, or a dedicated VDP application.

Microsoft Word, for example, has a mail merge function but does not have the ability to vary images, just text. Adobe InDesign has the data merge function, which is basically a mail merge but includes the ability to vary images as well. In both these examples, business rules would be applied to the data prior to using it in these applications.

There are a number of plug-ins available for InDesign that are very sophisticated. These leverage the extensive page layout capability of InDesign while adding scripting and other VDP specific capabilities. XMPie and DesignMerge are examples of these types of plug-ins. FusionPro is another plug-in based VDP product, and while it does have an InDesign plug-in, it only uses this to allocate variable text and image boxes in the layout. Business rules and specific content are applied in its complement plug-in for Adobe Acrobat.

PlanetPress and PrintShop Mail are examples of dedicated applications that combine both page layout and VDP functions. Although they are very strong in VDP functionality, they sometimes lack the sophistication you'd find in InDesign when it comes to page layout. These particular applications have recently moved from PostScript-based VDP to a more modern HTML5 and CSS (cascading

style sheets) base, making it easier to produce and distribute data-driven documents for multi-channel communications.

Output Method

The ‘P’ in VDP stands for printing and is the main output method we will discuss here. However, document personalization and data-driven communications have evolved to also include email, fax, web (PURL, personalized landing page), SMS text messaging, and responsive design for various mobile device screen sizes. With the emergence of quick response **(QR) codes**, even printed communications can tap into rich content and add additional value to the piece. In order to take advantage of these additional distribution and communications channels, a workflow component is often employed.

A key element for optimized print output of VDP documents is caching. This is where the printer’s RIP caches or stores repeatable elements in print-ready raster format. This means the RIP processes these repeating elements once, and then reuses these preprocessed elements whenever the document calls for them. This does require a RIP with enough power to process large amounts of data and resources with support for the caching scheme defined in the VDP file but, ultimately, allows the printer to print at its full rated speed without having to wait for raster data from the RIP.

There have been many proprietary VDP file formats that have striven to improve performance of VDP over the years, but the industry is moving rapidly toward more open standards. PODi, a not-for-profit consortium of leading companies in digital printing, is leading the way with two widely adopted open VDP standards. These standards are PPML (Personalized Print Markup Language) and PDF/VT (portable document format/variable transactional).

PPML

PPML, first introduced in 2000, is a device independent **XML**-based printing language. There are two types of PPML: *thin* and *thick*. Thin PPML is a single file, with the .ppml extension, containing all the instructions necessary for producing the VDP document. It does include caching instructions; however, all resources such as fonts or images are stored externally of the file. The path to these resources is defined in the RIP and retrieved during the rendering process of the document. Thin PPML is ideal for in-house VDP development where resources may be shared by multiple projects. These files are extremely small, however, and network speed and bandwidth may affect performance and are more difficult to implement if using an external print provider. Thick PPML is a .zip file containing all the required resources (fonts, images, instructions, etc.). This format makes the file highly portable and easy to implement on the print device, but it has a larger file size when compared to thin PPML. RIPs that support the PPML format can import the .zip file directly. Regardless of the type used, PPML benefits from exceptional performance, an open standard, open job ticketing support (JDF), and overall reduced file size. To generate PPML, an advanced VDP solution is required.

PDF/VT

PDF/VT is a relatively new international standard (ISO 16612-2) that has a lot of potential. It is built off

the PDF/X-4 standard, benefiting from its features, such as support for transparency, ICC-based colour management, extensive metadata support, element caching, preflighting, and much more. In short, PDF/VT includes the mechanisms required to handle VDP jobs in the same manner as static PDF printing allows print providers to use a common workflow for all job types, including VDP. Many of the latest releases of advanced VDP solutions already support PDF/VT as well as many DFE manufacturers.

For more information on PPML and PDF/VT, please refer to the [PODi website](http://www.standards.podi.org) at: <http://www.standards.podi.org>

Media Attributions

- plane_blue © Roberto Medeiros

6.8 Summary

Roberto Medeiros

Digital printing encompasses a number of technologies that each has unique characteristics, strengths, and applications. Digital imaging may even be the only print method able to produce a certain type of work, as is the case with VDP. Paper is also a major factor in the success of a project. Your paper choice can convey a message or set a tone as much as the content printed on it. Having a good understanding of technology and paper fundamentals can go along way when making choices for producing your print project.

Questions to consider after completing this chapter:

1. All xerography can also be called electrophotography, but not all electrophotography can be called xerography. What key element validates this statement?
2. What are the four key components in electrophotography?
3. How does toner acquire its charge?
4. What is the difference between paper brightness and whiteness?
5. Which PDLs support an ICC colour-managed workflow?
6. Which PDF/X standard leaves layers and transparency live?
7. Why are data content and business rules critical in VDP?

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Chapter 7. Web2print

7.1 Introduction

Steve Tomljanovic

Learning Objectives

- Describe web2print and how it benefits the supplier-customer relationship
- Differentiate between the different business models of web2print implementation
- Explore the economic impact of implementing web2print
- Research target markets that would benefit from online selling processes
- Define business to business (B2B) and business to consumer (B2C) sales models
- Examine variable templates and identify their components
- Discuss how print on demand works and how it affects the sales cycle
- Give examples of print workflows and management information system (MIS) integration
- Discuss how web2print business opportunities might affect return on investment

As modern modes of communication are constantly changing, the print industry has had to become very competitive. Successful print companies have evolved beyond producing only printed products; today, they also provide other services geared to an electronic marketplace. With the ever-growing number of people going online, customers have adapted to having instant information (Poon & Swatman, 1995), which printers can now provide. One such service is web2print. Customers benefit from the ease of ordering print anywhere around the world, with quicker turnaround times than traditional methods. Print companies benefit by building a larger customer base, streamlining workflows, and reducing production costs — all while staying competitive.

Print has traditionally been a service requiring many human touch-points, but with advances in business communication over the Internet, the dynamics of custom manufacturing are changing, particularly with respect to the ordering process (Shim, Pendyala, Sundaram, & Gao, 2000). Putting an effective online service in place involves strategically selecting suitable products and services. Online ordering is not ideal for every print product, but rather for specific products that are unnecessarily labour intensive. Products that were once very labour intensive, such as business cards, can now be ordered online. Customers enter their information directly into a template on screen while they sit in their own offices. A print-ready PDF file enters an automated folder in the print company (called a hot folder) and moves into the print workflow, allowing for a fully automated process called *lights-out prepress*, which saves on labour and allows for greater profits. Web2print provides a client company a value-added feature, while improving workflow process for the print company.

Technology Is the Key

Web2print completely automates the print ordering process by integrating online orders with print production. Using the Internet automates order entry and provides time savings to both the customer and the company.

Electronic commerce offers the possibility of breakthrough changes: changes that so radically alter customer expectations that they redefine the market or create entirely new markets (Gunasekaran, Marri, McGaughey, & Nebhwani, 2002, p. 195).

This technology allows businesses to interact with customers in a new way in addition to more traditional forms of ordering such as email, file transfer protocol (**FTP**), phone, fax, and face-to-face meetings. While web2print removes the need for more traditional ways of ordering, it does not replace them. Some customers may prefer these ways because they may not know, or be comfortable with, the online options that are increasingly available to them. It is advantageous to a company to inform and educate customers, encouraging them to evolve their buying habits. Traditionally, purchasing involved gaining knowledge about print companies through their sales reps, selecting the appropriate company, and trusting that the sales rep would ensure the product was delivered on time and for the best price. Today, many customers use search engines to obtain information about and decide on which print company to use. Using web2print ensures that the production time frame and the price match what a customer is looking for.

A printing company has to work with and implement many complex and interconnected systems in order to generate a printed product. From the inception of a new item to its delivery to the end-user, there are many opportunities for streamlining. Web2print creates efficiencies at the beginning of the print process, and those benefits trickle all the way through to imaging. The ultimate goal is for the data collected from the customer to proceed directly to the raster image processor (**RIP**) that drives the production process. A print company that takes advantage of this type of automation is positioning itself for smoother and more cost-effective print runs.

7.2 E-commerce for Print Manufacturing

Steve Tomljanovic

E-commerce is by definition the buying and selling of goods online. Print companies are turning to e-commerce to target the ever-growing number of people who want self-service and a more convenient way to purchase products in their busy lives. Today, many customers are online and the number of users purchasing goods through the Internet is growing substantially (Statistics Canada, 2014). The ability to offer an effective e-commerce service for ordering can put a print company ahead of its competitors. This approach challenges traditional thinking that a printer is only a bricks-and-mortar or face-to-face business. As more and more businesses move online to satisfy their customers' procurement needs, so must print companies (Supply Management, 2014).

A print company should transition with its customers to stay ahead of the competition. E-commerce allows a customer to order any product 24/7 without having to leave the office or pick up the phone. Providing online ordering has other benefits besides increased sales. It can help a company gain more knowledge about its customers and track purchasing trends. As well, online ordering allows print companies to offer customers additional products and services that may not come up in discussions during traditional forms of print procurement.

Not all business can be conducted online, as the more complex a project is the more a company will benefit from offering its services and expertise in traditional face-to-face communications. However, the ability to stay ahead of the competition by using Internet technologies helps solidify a company's relationship with its customers. For example, even if customers are buying products offline, they are likely doing their research online first. Therefore, a company can use the valuable data generated during this research to greatly improve its ability to evaluate and manage its business. When customers place orders, companies can analyze the frequency of those orders, their customers' buying trends, and which products are more successful than others. Data-gathering is the most important advantage online ordering has over traditional offline ordering. Using an e-commerce system allows a print company to learn more about what, when, and how customers are ordering. Online technologies enable a company to broaden the products and services it provides more than ever before.

Templated Variable Data Printing

Templated variable data technology allows a customer to produce a product using a template-driven order-entry system. These templates are used most frequently through an e-commerce store. A variable template allows the user to control the information made available on a product and see the real-time end result. Variable data entry is an ideal solution for direct mailers, promotional flyers, event posters, and stationery. Variable data allows for the custom printing of one-of-a-kind pieces that are unique to the targeted market. The potential for variable data is endless and is only limited by the imagination behind a design.

Variable data is not limited to digital presses, as many lithography presses can incorporate designs with

the simple swap of a plate. It is common for companies ordering large quantities of business cards to print blank shells on which they can later imprint a person's information. A print company obtains this information by having the customer use a variable template, which is then uniquely created to ensure all branding standards are consistent. This allows any employee of the client company to order business cards and stay true to the brand. The person fills out his or her name, title, and phone and email contact information, then views the result on a soft-proof. Then the person simply submits the card through a shopping cart system, eliminating the need for multiple communications, and making production efficient by having fewer hands touch the project.

The Benefits to a Print Company

Web2print has multiple benefits for a print company. Software can automate tasks, eliminating the need for staff to touch a project, which makes the service profitable. Allowing the customer to create a print-ready PDF is an asset, not a loss of control, as it allows the customer to assume responsibility for any typos or errors. Web2print also makes the production process much faster and efficient by automating time-consuming steps, and most importantly, helps build solid rapport and customer loyalty.

Once a PDF is ordered, a job ticket (called a *docket*) is automatically generated containing all of the order specifications, including pricing. The PDF then travels to a hot folder where it is accessed by the imposition software, which imposes it onto a press sheet. The press sheet either goes straight to the digital press to be printed or to the plate setter if it is being printed by conventional lithography. The whole process is extremely efficient and takes considerably less time to complete than having staff continually involved as the PDF travels through their departments.

The Benefits to the Customer

Web2print is all about customer satisfaction. That should be the top priority when a print company creates customized online storefronts and variable templates. Customers no longer have to call or physically meet a sales rep, as they now have the ability to order their printed materials at any time of the day and from anywhere. Today, many customers do not sit behind a desk for their entire workday, and establishing an online service allows a company to target those on-the-go customers who need to order print.

Companies can track orders in real time, which helps them predict future buying trends. This is especially beneficial to customers wanting to print blank items, otherwise known as *shells*. Using this information, a company can help a customer determine how many shells to print in the next run.

Business Models: Licensed or Subscribed Software

Web2print services come in two primary types: licensed software and subscribed software. Licensed software allows a print company to own the technology by paying an upfront fee; subscription-based software typically requires a company to pay a monthly or yearly fee to use the software.

Licensed software strategies typically represent a large cash outflow up front. The company can then use

the software to create as many portals or implementations as it wishes. While the software is supported through a licence, it is expected that the company will maintain its own web presence, and therefore may require highly trained web developers or programmers. The outlay of expense is gradually recouped over time through increased user implementation.

The subscription model, also referred to as **SaaS** (software as a service) reduces a company's support and maintenance costs up front. SaaS allows adding new print products to move forward more quickly because the need to support the same version throughout computers internally is removed. All subscribers operate on the same version at the same time, and are upgraded regularly at the same time. Because the Internet is constantly evolving, the SaaS model is flexible and better aligned to move with it. This business model contributes to a company's return on investment (**ROI**) as well. Since a company typically doesn't pay a large sum of money upfront for the software, it can easily budget for payments based on monthly usage. The company only pays for the services it uses. This business model builds a partnership between the print company and its SaaS vendor, and a positive ROI is beneficial to both parties in the partnership because it keeps both vendor and subscriber focused on mutual success.

7.3 Web2print Strategies and Goals

Steve Tomljanovic

Evaluating Strategies and Setting Goals

Print companies must have clear strategies and goals to ensure continued success when implementing web2print. The first step is to evaluate the type of sales they make. There are two basic types of sales a print company makes: business to business (**B2B**) and business to consumer (**B2C**). It is very common for a printing company to serve a primarily B2B customer base; however, since B2C requires a vastly different storefront, this decision needs to be made early in the process of implementing web2print.

Once a print company determines the type of storefront its customers need, it should research the three basic types of service: print on demand (**POD**), variable data printing (**VDP**), and static warehoused items. By analyzing its target market, a print company can determine which of these services customers will use most. Once the print company chooses a software vendor that can provide the most suitable storefront, only then can it decide on the specific services to offer each of its customers.

Therefore, to be successful, a print company must:

- Know the target market
- Choose an appropriate vendor and storefront
- Make plans to add new customers to the system by setting goals
- Choose the types of products to offer to each customer based on need

Know the Target Market

Every print company has a different customer base, and thus serves a different market. A print company must analyze the customers it serves to determine exactly what its target market is. The biggest mistake print companies make when committing to the purchase of an online ordering system is not researching the technology in relation to their target market. Print companies should choose the system that best suits their needs and benefits their customers. There are hundreds of vendors and products with thousands of features, so print companies need a strategy to ensure they can maximize their return on investment (ROI) while providing the best possible services to their specific, targeted customer base.

Choosing a Digital Storefront and Variable Software

Since not all vendors of e-commerce systems are the same, print companies need to exercise due diligence in making their choice of vendor. They should analyze their own internal workflow to ensure they find a vendor that best meets their specific needs. As well, print companies should determine what their employees' strengths are and ensure the appropriate staff are hired to accommodate online needs.

Staff involved in the implementation and operation of an e-commerce ordering system need a basic knowledge of many web-based programming languages in order to give them a good grasp of the back-end coding necessary to build and maintain the online system. Every online ordering system uses its own method of coding to create its storefronts and templates, so having previous programming knowledge is a major asset.

Many companies such as IBM, HP, Creo, and EFI are building platforms to provide VDP service to print companies. The software these companies provide creates a web2print workflow. This includes the internal processes needed to print a job, as well as a client-facing website, from which customers can order. It is important to understand the benefits of every digital storefront as they all offer different options. Digital storefronts must provide a simple ordering process for the customer while being very robust and efficient for the print company. Selecting the order quantity and displaying pricing should be simple and not confusing for the end-user. Customizing VDP products or ordering POD or warehoused items should be simple and quick. The ability to split products for multiple-shipping destinations should also be considered.

Selecting a storefront that can be integrated into a management information system (**MIS**) to streamline orders from customization to invoicing is beneficial. The ability to have customers approve or reject orders placed by others is also beneficial, as it allows for an extra review to ensure order information is correct.

To ensure they make appropriate choices, print companies request copies of documentation from a software provider to see what they need to learn if they plan to be a self-service user of the software. They request references and ask how the software provider handles support, system outages, and upgrade development to get a sense of how other users perceive the company. Print companies attend demonstrations of the product and give specifics on what they want to hear beyond the generic sales pitch. Print companies also seek specific information about short- and long-term product upgrades, which gives them a chance to glimpse the software company's strategic vision and how the product might develop in the future.

Other Considerations Before Purchasing

Print companies take other considerations into account before purchasing software.

Usability: If they have current B2B customers, print companies ask them to test the software before committing to a purchase. If these end-users have difficulty using the software, then it is not the right choice. If print companies have B2C customers, they ask someone without any print knowledge or experience to test the product. Testing against online competitors to see how the software compares is another way print companies assess the usability of a product. They also research customer feedback.

Partnership compatibility: The relationship between a print company and a software provider is a partnership, not just a sales interaction. Print companies are in frequent contact with their software provider to solve technical difficulties, arrange training, or add improved services. Therefore, determining if the software provider will make a compatible partner is important. Print companies don't rely solely on what the sales rep tells them; they try to get a sense of the software provider's team by calling the support desk and talking to customer service. This helps print companies determine how well they will be treated and whether the software provider's staff are knowledgeable.

Features: Assessing software features is usually part of the decision-making process. Print companies generally want to know the following before purchasing:

- How easily will customers understand and use the software's features in a self-service situation?
- Was the software built to support the print industry or first created for some other use and applied to the print industry? If the former, are the features transferable?
- Do the features allow set up and administration of the site, creation of B2B storefronts, and product development. Do they enable the print company to add variable elements, create users, and take orders without relying on the software provider?

An important tip when choosing software technology is to not put too much emphasis on the number of features offered. Features tend to constantly change, and more does not necessarily mean better. While software product development tends to centre on adding more features, it is not necessarily adding more value. If a feature is added to a product, but is never used by customers, it is possible that the feature did nothing more than add complexity to the ordering process. Such a feature may result in discouraging customers from using the system, or placing future orders.

Starting with a New Customer

One way to introduce a new customer to web2print is to build a single item for them. This allows the customer to learn the ordering process and the print company to learn and incorporate the customer's products into a production workflow. A workflow should be designed to be as automated as possible, from order entry to production to invoicing. New workflows should include sufficient time to allow a customer to test the variable templates to extremes, entering best- and worst-case scenarios to ensure the template can perform in all situations without errors. Only once the initial workflow has been proven to be efficient should more products be added to the storefront. This ensures that both the customer (external activity) and the print company (internal activity) are confident enough in the workflow to handle more orders.

Setting Goals and Site Testing

Printing companies should allow time to educate their customers in all steps of the process when launching an e-commerce system or when adding a new variable-template-driven item. The easiest way to meet customer expectations is to involve them in the development process, regularly inviting feedback and eliciting suggestions for improvement. Customer satisfaction is important, so a company must ensure that it takes client feedback seriously, incorporating customer input to improve the service process. As the site is being developed, both the programmer and the customer need to rigorously test new products and templates to ensure they are completely satisfied long before allowing product ordering. It is common for a programmer to envision how a template will behave, while the customer intends it to behave in a different way. Often a customer has expectations that the programmer may not have foreseen. Once the entire site, including products and templates, has been developed, it still isn't ready. A testing phase or pilot period is necessary to find any other bugs or shortcomings that may be more easily discovered once real data is being used. Implementing a pilot period before an official launch

of the full workflow also allows everyone to learn how the system will impact them, exposes potential workflow issues (which can arise in the many steps between ordering and invoicing), and allows the customer to provide final feedback.

Most important to keep in mind is that the system only works when customers use it. They will often find opportunities during the pilot period to suggest where the process can be improved, as unforeseen problems are discovered only after people start using a new system or variable template. Often these user-experience issues can prevent adoption of the system by the customer. As well, customers may fall back to the more familiar method of traditionally ordering print if they do feel comfortable using the new system. Including the customer in the entire process allows for the greatest chance of success, and is the best way to ensure the success of the site.

Choosing the Right Type of Products

Before setting out to create products, a print company should determine whether it is a variable template, a print-on-demand piece, or a warehoused item. Other key information needed is the name of the product and the communication intent (i.e., Is the piece promotional or educational? What audience is it intended to reach? How knowledgeable is this audience?). Print companies also need to know whether the product will be ordered regularly or be a one-time communication. It is important to choose the right products before the development phase begins. It is common for a product to be almost completely programmed before it is discovered that another similar product would have been more appropriate. Below are explanations of the three most common types of products, followed by a list of more specific options.

Variable Templates

Variable templates contain all the necessary information for a customer to customize and soft-proof a print order. This usually results in the creation of an automated, print-ready PDF, which is generated while the customer is still online.

A PDF of the design is created containing variable fields assigned for every element. Coding is then applied to each field to determine how the template will behave under given circumstances, such as during customization. For example, coding can force a name to be upper case or email to be lower case. Coding can also be used to upload custom images or force phone numbers to use hyphens (e.g., 604-123-4567) instead of dots (e.g., 604.123.1234). Coding is critical for keeping a customer's brand consistent, so regardless of who creates an order, all products will be formatted consistently and have the same look.

Deciding which VDP software or plug-in is more appropriate and how it interacts with the digital storefront is important. VDP software comes in the form of third-party applications such as XMPie or is accessed online through a self-hosted dashboard.

Print on Demand

POD products are the opposite of VDP products. POD allows the customer to order a static product to

be printed and shipped. POD products do not require customization and are printed using a completed file uploaded by the customer or stored in the system by the programmer.

Warehousing

Storefronts can act as an inventory management system for any products that can be warehoused. These products can be ordered online using the same process as a POD item. Each product has a real-time inventory count associated with it, which updates after every order. Notifications can be sent about low product inventory levels, reminding a customer that a product needs to be replenished. Inventory counts benefit customers by showing their buying patterns, which helps them to effectively determine future quantities.

Below are other examples of different types of products that can be ordered online:

- *Ad hoc print*: an online print product where the customer provides the content during the ordering process via file upload, such as brochures, flyers, and newsletters.
- *Ad hoc business documents*: an online print product where the customer provides the content during the ordering process via file upload, such as training manuals, presentations, and reports.
- *Ad hoc oversize*: An online print product where the customer provides the content during the ordering process via file upload, such as posters, signs, and banners.
- *Static print product*: An online print product where the content is stored in a catalogue and printed on demand after ordering, such as sales sheets, flyers, and white papers.
- *Inventory product*: An online print product where the content is stored in a catalogue and pulled from existing inventory after ordering.
- *Digital publishing*: An online product where the final product is a downloadable PDF instead of a printed product, such as white papers, personalized sales materials, and presentations.
- *Kit*: An online print product where the customer can buy a basket of goods contained in a single item.
- *Promo product*: A set of products that are branded with a logo for use in marketing or promotional programs, such as mugs, baseball hats, and pens.
- *Integrated campaign*: A product that combines multiple-marketing channels to create an integrated campaign a customer can use to track metrics when launching a new product or sales promotion.
- *Photo product*: An online print product using uploaded photos or photos from online collections, such as photo books, photo cards, and photo calendars.
- *Quote request*: An online print product used to request a quote for a print job.

7.4 Implementation and Workflow Considerations

Steve Tomljanovic

Implementation and Deployment

By this point, the workflow strategy has been created, the customer has been included in discussions about its goals, and the print company has created some sample products and print items for the customer to test. As well, the print company and customer have completed a pilot period and identified unforeseen workflow issues. What remains is the final step of making the site live.

Making the site live involves ‘turning it on’ to accept orders from the entire user base. If the above steps have been completed properly, there should be very few issues.

Continuous Assessment

Even after a storefront has been launched, it is not considered complete. There should always be a system of continuous assessment in place to respond to customer feedback and correct any errors as the orders start coming in. Even after the site is live, the programmer should navigate the storefront to ensure its usability, and place a test order to ensure no issues arise for the customer during the ordering process. Also of consideration is a post-order assessment, where the internal processes in the printing company are evaluated for completeness and efficiency, as outlined below.

Workflows and Automation

Orders should enter an automated workflow, creating a seamless transition while bypassing several departments. Once an order has been placed, the appropriate staff are notified to fulfill it. If a VDP product was customized, then a print-ready PDF should automatically be uploaded to a hot folder. At this point, either an automated system or a prepress operator reviews the file for print standards and imposes it on the print template. These files can then be automatically produced on a digital press or be sent to the plate setter to be prepared for litho printing. Throughout every step of the process, email notifications should be sent to appropriate staff so they can fulfill the order, and to the customer so they can be kept informed of anything related to the order such as invoices and product shipping.

MIS Integration

It is beneficial to select a storefront suitable for integration into a management information system (MIS) to streamline orders from customization to invoice. Integration is a connection between two systems that enables the exchange of data. The information is automatically entered into an electronic docket, which is a database that collects and maintains customer information, products ordered, shipping

information, and billing information automatically. When integrating two systems, it is important to note which system is the master data holder and which is the subscriber to that data. Only one digital system should ‘hold’ the data, whereas all the other systems access the same database. In a print environment with a functioning print MIS system, it is the MIS system that should be considered to be the master in every case. The MIS system collects orders from everywhere, not just the orders placed through storefronts online. The web2print system pushes data into the MIS system and subscribes to the master data stored and managed in that system, such as pricing and job specifications. This can be challenging because the web2print software and the print MIS system are often provided by separate vendors, which can prevent a smooth exchange of data.

Web2print is one of many secondary, or subscriber, connections into a printer’s business and production workflow. Web2print should serve its main purpose, which is to capture orders in the most efficient manner while maintaining a competitive edge for a print company’s sales team. Orders must be transitioned seamlessly and smoothly into the production workflow and MIS system so they can be treated like any other order, whether they were placed online or by traditional means. In this way, web2print is regarded as only one of many business opportunities that bring sales to a print company.

Analyzing the ROI

When making any business decision, investment must be weighed against return. This is known as return on investment, or ROI. Moving a business online to accept orders is a serious business decision. Web2print can be a worthwhile investment and understanding how to measure ROI before investing in a vendor’s software is important.

Typically, in a print company, the estimate for the actual printing process is very well defined. The estimating department can provide detailed analysis of all of the costs associated with printing a specific printed product. Where web2print differs, however, is in the costs of capturing the sale and in streamlining the process in the print shop. For example, there are specific increased costs in running a web2print site online. If the system was paid for as a one-time licence, then the total cost must be amortized over the life of the licence, and each print order shares a small part of that overall cost. Some SaaS systems, on the other hand, charge a piece rate or a monthly fee. These are easier to incorporate into the costs of the job. On the savings side, there are processes within the print company that are made more efficient, so an analysis of cost savings can be made there as well. However, print companies should not fall into the trap of thinking that just because a print job can be completed in a shorter time, it is automatically cheaper to produce. In order to assess the total ROI, only real costs that affect the print product’s profitability should be assessed.

Timing is important when calculating ROI because a printer must determine when to invest money based on an expected return of that investment. Purchasing or building an online system is not automatically going to generate revenue. It is likely that the print company could invest thousands of dollars very quickly before the system provides any value in return. There is a human aspect to this as well. Sales professionals are still critical for driving new customer sales to the web and finding new online opportunities, both of which will help improve the return on the initial investment.

Systems with monthly payments are sometimes better for new online ventures, as they do not require a huge investment upfront. Up-front payments force a print company to give away all monetary leverage

in a single transaction, and while they might be more cost-effective when serving large numbers of customers, they can do serious financial damage in the short term.

7.5 Summary

Steve Tomljanovic

Web2print is the online connection between a print company and its customers, and the technology should help to solidify this relationship, not hinder it. Print companies offer their services online in response to their customers' needs and buying trends. As web2print becomes more integrated into a print company's day-to-day business, it becomes a main channel for interacting with a customer. A key to the strategy for implementing web services is involving the customer as much as possible, since the customer's use and acceptance of the ordering portal is critical for its success. Print companies should research the types of products and services that will be helpful to customers in the specific target markets they serve, and not add too many products too quickly. Print companies must analyze the types of products their customer needs, and plan how a streamlined workflow will create efficiencies in its operations. Finally, a pilot phase to assess both accuracy of the storefront and user experience is important. To ensure continued customer satisfaction, print companies should be prepared to make ongoing improvements once the site goes live. System integration with print companies' internal processes is also ongoing, as efficiencies and production enhancements are realized. The print industry continues to evolve and a successful implementation of a web2print portal will help print companies keep up with this evolution and stay in front of the competition.

Questions to consider after completing this chapter:

1. How would you describe web2print and the technology involved?
2. How would you describe e-commerce and how web2print utilizes it?
3. What are the benefits of using web2print to a company and its customers?
4. What are the strategic steps in creating a web2print system?
5. What types of products can be offered through a web2print system?
6. In what ways can a web2print system be integrated into a production workflow?

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Suggested Reading

[WFTPRINTAM – Web to Print](http://wftprintam.wikispaces.com/Web+to+Print). (n.d.). Retrieved from <http://wftprintam.wikispaces.com/Web+to+Print>

Glossary

About the Authors

The Graphic Communications Open Textbook Collective comprises the following authors.

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Wayne Collins completed his Bachelor of Arts in English Language Studies at the University of Regina while concurrently completing a traditional five-year trades apprenticeship in pre-press with the Graphic Arts Union. He moved to Vancouver in 1985 and worked at Zenith Graphics, first as a film stripper and camera operator, and later as a computer systems operator and manager. He moved to Creo in their formative years and helped champion their computer to plate systems across North America. Before starting the Graphic Communications Diploma Program at British Columbia Institute of Technology in 2006, Wayne managed the pre-press department at Hemlock Printers in Vancouver for 15 years.

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Alex Hass is a multidisciplinary designer, illustrator, and artist. Her design practice encompasses art direction, typeface design, and image creation. She has a special fondness for book design. She has partnered with Canadian publishers, art galleries, artists, universities, furniture makers, filmmakers, First Nation educators and historians, musicians, the CBC and the National Film Board in her design projects. Alex studied illustration and art direction at the Alberta College of Art and Design, received her design degree in visual communication from Nova Scotia College of Art and Design University, and her Master's in Applied Art, media stream, from Emily Carr University. She has taught various aspects of design at Emily Carr University, Simon Fraser University, and British Columbia Institute of Technology for the past 18 years.

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Alan Martin has a Bachelor of Fine Arts in printmaking from the University of Victoria. He has been involved professionally in the graphic arts since 1977, first in traditional film assembly and then in electronic pre-press from its early days in the 1980s onward. For the past 11 years he has worked for Kodak, supporting their pre-press workflow products. Alan is currently product support manager for the InSite family of web-based review applications. He teaches several courses at British Columbia Institute of Technology, including Colour Management Systems.

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Steven Tomljanovic

With over 15 years of experience in IT and almost 10 years of experience in the print industry, Steven Tomljanovic has been recognized as a leader in web2print and variable data. He was a part of the first graduating class of the British Columbia Institute of Technology GTEC printing program. Upon graduation, Steven helped companies build their online business presence with great success. He has been honoured with *PrintAction* magazine's PA35, awarded to the top 35 industry leaders under the age of 35 in Canada. Steven shares his passion by teaching e-commerce, web2print, and web marketing courses at BCIT in the GTEC and New Media & Design Programs within the School of Business. Steven currently works as the web2print specialist at MET Fine Printers, located in Vancouver BC.

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Version	Date	Change	Details
1.00	December 17, 2015	Book added to the BC Open Textbook Collection	
1.01	June 6, 2019	Updated the book's theme.	The styles of this book have been updated, which may affect the page numbers of the PDF and print copy.
2.00	July 18, 2019	Entire book revised for accessibility.	<p>Accessibility remediation:</p> <ul style="list-style-type: none"> • Image descriptions added. • Link text edited to be descriptive. • Added an Accessibility Statement • Headings added. <p>Other changes:</p> <ul style="list-style-type: none"> • Added List of links by chapters for print users. • Added pop up features for glossary. • Formulas formatted in LaTeX
2.01	July 30, 2019	The following changes were part of a project to standardize BCcampus-published books.	<ul style="list-style-type: none"> • Added additional publication information • Updated copyright and attribution information • Added ISBNs • Renamed “About the book” to “About BCcampus Open Education” and updated the content • Updated the book's cover

List of Links by Chapters for Print Users

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Chapter 2. Design Process

- A Handbook of Rhetorical Devices: <https://www.virtualsalt.com/rhetoric.htm>
- A Model of The Creative Process: <http://www.dubberly.com/concept-maps/creative-process.html>
- “A Problem Well-stated is Half-solved” by Mark Levy: <http://www.levyinnovation.com/a-problem-well-stated-is-half-solved/>
- Concept Tree Method: <https://mindmappingsoftwareblog.com/concept-tree/>
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- Example of Amplification: <http://www.designboom.com/cms/images/jenny/jobsintown/jobsintown03r.jpg>

- Example of Analogy: http://1.bp.blogspot.com/_6YrCK0O5xBw/SeDGd7brAVI/AAAAAAAAAB0/XwcXgtS1UY8/s1600/LUNGS.jpg
- Example of Hyperbole: <http://n-tiffany0811fmp.blogspot.ca/2011/02/mark-studio.html>
- Example of Metaphor: <http://media.iqads.ro/2009/09/ikea-bigger-storage-ideas-full.jpg>
- Example of Metonymy: <http://www.moinid.com/files/2009/09/london-logo.png>
- Example of Personification: <http://www.thechaseadvertising.co.uk/work/manchester-dogs-home-street-life/>
- Example of Simile: <http://designbump.com/wp-content/uploads/2014/06/billboards-ads-creative-019.jpg>
- Example of Synecdoche: http://40.media.tumblr.com/tumblr_lfthryFqOH1qaz1ado1_500.jpg
- Example of Understatement: <http://3.bp.blogspot.com/-qobPI4uVlcI/UGQUXup0rtI/AAAAAAAAAEU/d3icG0PcEsA/s320/1486396940.jpeg>
- Visual Communication Concept Map: <https://rossfitzy.files.wordpress.com/2012/05/final-visual-comm-map.jpg>

Chapter 3. Design Elements, Design Principles, and Compositional Organization

- “Think Small” Campaign: https://en.wikipedia.org/wiki/Think_Small

Chapter 6. Imaging

- Digital Press System Certification: <https://www.idealliance.org/certification/digital-press-certification>
- How chemical toner is made: <https://youtu.be/852TWDP61T4>
- Nanography: <http://www.landannano.com/nanography>
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Intro to Social Media

Intro to Social Media

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Preface

This book is aimed at managers, business owners, marketing managers, and aspiring social media marketing interns and managers. I will assume that however accomplished in your own field – baker, developer, teacher and that even as successful business owners, you approach the topic of social media marketing as a beginner. Even if you are a digital native, or an avid personal user of social networks, we will treat this book as a guided tour of social media for marketing purposes.

While this is a textbook, it is not meant to read like a traditional textbook, especially on a topic that is rooted in digital to an audience who, let's be honest, doesn't really like to read. No shade. I too would rather watch a YouTube video on how to fix a problem with my laptop than read the manual.

Like many of my Generation X peers, I began using forums and chat rooms in the early 1990's and have watched social networks come and go (AOL and Yahoo chat rooms, Friendster, Myspace) – To those not inclined to spend countless hours online over the past couple of decades, it may seem as if things change too often.

For others, particularly those born into the technology, aka digital natives, social networks as with most technology, are second nature to you, but not having work experience may leave you perplexed as to what your boss/ client / customers really want from you as a social media manager.

If you fall within either one of these audiences, this book is for you. I will do my best to help you sort out a basic understanding of the why of social media as a marketing tool for business, for personal brand building, and perhaps more importantly, where to find supporting information and research to help you design, monitor, test, and re-define a social media marketing strategy.

If you are utilizing this book as an instructor or are considering using this book as an instructor, first of all, *Thank you very much!* Here, you will find the instruction plan and a practical way of teaching students how the principles of marketing work. We will also explore the principles for each prominent social website. Also, the exercises with every chapter will give students a better chance at understanding these concepts as well.

To sum it up, the target audience for the book is a person who is interested in social media marketing for brand building.

PLAN OF THE BOOK

PART 1 – we'll discuss the origins of marketing principles. A definition of marketing and

how many of the concepts that have been around for ages are the same as what we do today in social media marketing. Part 1 answers the question, “what is marketing?” and we’ll begin to explore marketing strategies for the modern age. We’ll touch on the basics principles of marketing and a bit of the psychology of as a way to introduce concepts that hopefully won’t be so foreign to you as we dive deeper into the nature of social networks.

PART 2 — we’ll get into more of what social media marketers know and how it fits within a marketing strategy. We’ll talk about social networks in a way that no matter what networks are present and popular when you read this book, you’ll have an understanding of how you can create content, engage with your customers, and grow your brand.

Open Education at Oklahoma State University

Introduction to Social Media is an Open Educational Resource (OER). This means the book is free (It was a good joke, right?). When Dr. Joshua Daniel became Director of First Year Composition in June of 2020, one of the first things he did was survey instructors and students to learn what they thought of the program. At that time, the program had two commercial textbooks students were required to purchase, and they were in negotiations with another textbook company to add a third. Many things became clear when he talked to students and instructors, but two points are relevant here: 1) instructors hated using the textbooks; 2) students hated the textbooks and generally did not do the reading. Dr. Daniel didn't think that is because instructors or students are lazy; he thought it was because commercial textbooks generally aren't very good. The reason for this is they, as products that need to be marketed and sold for profit, need to be as applicable as possible in as many contexts as possible. In other words, the textbooks the program was using stood the best chance of being profitable if they were equally as useful at OSU as they would be at OU, or UC Davis, or NYU. See the problem? Even though many commercial textbooks are quite good, by being applicable in so many contexts, they are never as good as they could be in any specific context. This book was built by and for the instructor of this course, an entrepreneur and practicing professional in her field. Moreover, when we find problems, we get to update it as you go (none of that, "Do I have to purchase the third edition, or can I get by with the second edition?").

So that's a reason to embrace Open Education: the textbooks are better. Here is another. Education is both a right for every human being and a responsibility for every democratic nation. Speaking as a 90's child now staggered by student loan debt, Joshua Daniel comments with certainty you are already paying more than enough for your education, and textbooks for your courses, when possible, should not add to that burden. All told, if you calculate the three textbooks previously in use for the first year composition program, students were spending just under half a million dollars per academic year on commercial textbooks. This for textbooks that instructors hated and students did not read. Not the best investment, at least not for us. Dr. Daniel believes all of you have a right to pursue education as far as you wish, and a small way we can help enable that is to remove as many barriers to entry as possible. Dr. Daniel was a first-generation college student. He grew

up on a farm in Mississippi. Both of his parents had to drop out of high school for work, and none of his siblings were able to pursue higher education. When he arrived at my first undergraduate institution (he bounced around quite a few before he managed to graduate) he was lost and straight up broke. He dropped more than one course simply because he could not afford the textbooks. Many of your instructors have similar stories to this. For this reason as well as others, the instructor of this course is committed to removing the cost of commercial textbooks as a barrier to your education.

“Open Education at Oklahoma State University” licensed CC-BY is adapted from “Introduction to *Who Teaches Writing*” by Joshua Daniels, licensed CC-BY. It has been modified for voice and customized for non-textbook specific use.

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The web version of *Who Teaches Writing* has been designed with accessibility in mind. It is our goal to optimize the resource for people using screen-reader technology. Content should be navigable using a keyboard, and links, headings, and tables should be formatted to work with screen readers. All images considered essential include alt-tags. Information is not conveyed by color alone, and there is an option to increase font size. (See tab on top right of screen titled, “Increase Font Size.”)

- It has been optimized for people who use screen-reader technology.
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Other file formats available

In addition to the web version, this book is available in a number of file formats including print PDF, EPUB (for eReaders), digital PDF and various editable files. Here is a link to

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You can contact us by completing this web form or by sending an email to kathy.essmiller@okstate.edu.

This statement was last updated on June 23, 2022, by Kathy Essmiller.

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PART I: MARKETING PRINCIPLES

Marketing in the Age of COVID-19

If 2020 taught us anything, it is that our work lives are no longer about being in a specific location, small businesses are essential businesses, Wi-Fi is a luxury not afforded to so many in our society, and toilet paper is king. But I digress.

As millions of people worked from home, businesses were forced to adapt, the gig economy provided a new way for small businesses and individuals to survive financially. Without a doubt, social media and other digital platforms were better equipped at handling all of our professional and personal needs than most previously realized. You only need to look at companies like Zoom, Instacart, TikTok, and Youtube as examples of how important digital marketing is to all of us.

Reading:

Instacart's Frantic Dash From Grocery App to Essential Service

Videoconferencing apps saw a record 62M downloads during one week in March

1.1 What Is Marketing?

The American Marketing Association defines marketing as:

“The activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large.”

<https://www.ama.org/the-definition-of-marketing-what-is-marketing/>

This definition sounds pretty vague and general, but one word should stand out to you in this description – **Customers**.

In the well-known marketing Guide, *Principles of Marketing*, the authors Philip Kotler and Gary Armstrong explain marketing in the following ways.

“Marketing, more than any other business function, deals with customers.”

“Marketing is engaging customers and managing profitable customer relationships”

– *Principles of Marketing*, Northwestern University 13th edition

Their definition may sound a little more familiar to those of you in business. Marketing professionals assist businesses in attracting new customers through superior value proposition as well as achieve customer satisfaction to earn loyalty and build credibility.

It's a prevalent misconception that marketing is all about selling and advertising. Others misinterpret the concept and think that marketing involves promoting products available in display shelves at stores and maintaining inventories of products for future sales. However, the job of a marketer isn't only inventory management and pushing people to purchase their products.

Reading:

What is Marketing

Video



One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://open.library.okstate.edu/introtosocialmedia/?p=231#oembed-1>

What is Marketing Today? With Seth Godin

1.2 What Is Digital Marketing?

At a high level, digital marketing refers to advertising delivered through digital channels such as search engines, websites, social media, email, and mobile apps. Using these online media channels, digital marketing is the method by which companies endorse goods, services, and brands. Consumers heavily rely on digital means to research products. For example, Think with Google marketing insights found that 48% of consumers start their inquiries on search engines, whereas 33% prefer to consult brand websites and the remaining 26% consumers search within mobile applications.

While modern day digital marketing is an enormous system of channels to which marketers simply must onboard their brands, advertising online is much more complex than the channels alone. In order to achieve the true potential of digital marketing, marketers have to dig deep into today's vast and intricate cross-channel world to discover

strategies that make an impact through engagement marketing. Engagement marketing is the method of forming meaningful interactions with potential and returning customers based on the data you collect over time. By engaging customers in a digital landscape, you build brand awareness, set yourself as an industry thought leader, and place your business at the forefront when the customer is ready to buy.

By implementing an omnichannel digital marketing strategy, marketers can collect valuable insights into target audience behaviors while opening the door to new methods of customer engagement. Additionally, companies can expect to see an increase in retention. According to a report by Invesp, companies with strong omnichannel customer engagement strategies can retain around 89% of their customers as compared to companies with weaker omnichannel programs that have a retention rate of just 33%.

As for the future of digital marketing, we can expect to see a continued increase in the variety of wearable devices available to consumers. Forbes also forecasts that social media will become increasingly conversational in the B2B space, video content will be refined for search engine optimization (SEO) purposes, and email marketing will become even more personalized.

“Digital is at the core of everything in marketing today—it has gone from ‘one of the things marketing does’ to ‘THE thing that marketing does.’”

– Sanjay Dholakia, Former Chief Marketing Officer, Marketo

Reading:

<https://www.marketo.com/digital-marketing/>

Case

Amazon in 2020

<https://hbsp.harvard.edu/product/514025-PDF-ENG?Ntt=digital+marketing&itemFindingMethod=Search>

How Many P's are in Marketing Now?

The concept of Marketing Mix is evergreen in the marketing industry. Despite the world moving from traditional to digital marketing, this stays effective and relevant for businesses. Since it's a mixture of four different elements, it's often referred to as 4 P's of Marketing. Neil Borden first came up with the term Marketing Mix. However, it was later popularized by Jerome McCarthy of Notre Dame University who named it "the Four P's of Marketing". He used it first in his marketing guide, "Basic Marketing: A Managerial Approach".

The Father of Marketing, Philip Kotler, highlighted the 4 P's of Marketing in the following manner:

"Marketing Mix is the set of controllable variables that a firm can use to influence the buyer's response."

Product

In simple words, a product is a market offering that solves a problem for consumers. It can be a good, service, or experience and can be tangible as well as intangible.

Businesses invest in products that meet an existing customer need and can earn profits due to their high demand in the market. Traditional businesses opt for product ideas that are well-known to their audience. For instance, a traditional business person may start manufacturing and selling running shoes to athletes. Innovative entrepreneurs, however, have a different mindset.

Such business people turn to innovation and create a need for their products. Uber is a popular example of innovation. They noticed taxi services and came up with a unique idea to facilitate customers. Instead of purchasing vehicles, they developed a platform to connect customers with taxis and generate revenue through commissions. Some other top innovative businesses include Apple, Amazon, Tesla, SAP, The Walt Disney Company, etc.

There are three levels of any product that are as follows:

- **Core Product** – This is the main product that satisfies the fundamental customer need. For example, the core benefit of a car is the ease of traveling
- **Actual Product** – This involves additional design features that add value to customers. For example, car manufacturers design vehicles with appealing interior and exterior body and install heating system, music system, and more features to attract customers
- **Augmented Product** – This refers to the additional features that aren't a part of the actual part but meet the wants and needs of specific audiences. For example, car dealers may offer free or discounted insurance policies to new buyers

Types of Products

A product can be a good, service, experience, or idea that can be sold or exchanged. It is further divided into two categories: Consumer Products and Industrial Products.

Consumer Products are those that are ready for consumption and can meet consumer needs without further processing.

It is termed as Convenience Product when the customer tends to buy it on a frequent basis without spending much time in research. Its example is detergent or dairy products.

Another type of consumer product is Shopping Product that involves higher customer engagement. Customers spend significant time and efforts in learning about the quality, features, and longevity of the product. They may compare multiple brands to shortlist the best product option before making a purchasing decision. Its examples can be gaming devices and microwave ovens.

Specialty Product is another type which includes products focused at specific niche. These are premium quality products that target smaller customer groups and those customers are willing to pay a premium price for the brand. For example, Rolls Royce cars and Rado watches.

The last type of Consumer Products is Unsought Product which has lesser market demand because customers either don't feel the need to purchase them or don't know much about the product. Therefore, marketers have to aggressively promote and advertise them. Common examples of unsought products are funeral insurance, smoke detectors, and cemetery plots.

As the name suggests, **Industrial Products** are those goods that are used by businesses. These can be further categorized into three types.

The first type of industrial products is *Capital Item* which includes items that support buyer's operations. For instance, a plumbing business may purchase wrench, drill, and pliers to install and repair plumbing pipes for their customers.

The second type of industrial products is *Materials and Parts* which refers to raw materials. These products are further processed and usually become a part of a larger product. An example is bottle caps purchased by a pharmaceutical company. These bottle caps are of no value when sold as a stand-alone product and installed on medicine bottles before reselling.

The third category of industrial products is *Supplies and Services*. Its examples are roof repairing service, smartphone repairing service, and operating supplies such as primers for house painters.

Product Lifecycle

A product usually goes through multiple phases since the idea inception. Businesses must analyze the current standing of their products and come up with relevant strategies to stay ahead of the competition. This PLC has five stages: New Product Development, Introduction, Growth, Maturity, and Decline. This must be noted that not every product experiences all five stages.

New Product Development stage is when the business only has a new idea and they need to invest in the idea to develop the product. New product development starts when a stakeholder gets a new idea. This idea is tested to determine whether it would be viable in the market before developing the product. After thorough analysis and testing, the product is made available to customers.

The next stage is *Introduction* and this phase starts immediately after the product is launched. During this time, sales are usually low and businesses focus on increasing awareness.

The third stage is *Growth* when the product starts generating profits and more and more customers get introduced with the brand.

After the growth stage starts the *Maturity* stage. This is when the product attains maximum profits and can't further increase profits or market share. The business can develop appropriate strategies to retain the product in this stage for the longest possible period.

Every product has a limited lifespan and sooner or later, its popularity comes to an end.

This is when the product enters the *Decline* stage. During this phase, sales gradually drop and customers lose interest.

Price

In a marketing mix, pricing is the amount of money customers need to give up to obtain a product or service. This is one of the most important elements that defines the profitability and sustainability of a company.

Pricing Strategies

While deciding the right pricing strategy is crucial, many businesses fail to do so. Their prices are either too high or too low since they fail to understand market dynamics. If a product is priced too high, customers are less likely to show interest since they would rather turn to alternative options that offer higher value at lower prices.

On the other hand, if a business sets their prices too low, they may end up losing revenue. If the price doesn't cover the cost, the business would experience huge losses. Furthermore, customers often regard a product to be of low quality if it's priced too low as compared to other similar products. Therefore, it's vital to set the most suitable price for a product.

There are multiple strategies for setting the right price, but we will discuss only the prominent three strategies: value-based pricing, cost-based pricing, and competition-based pricing.

Customer Value-Based Pricing strategy relies on customer perception of the product and brand. The higher value customers perceive, the higher will be the price of the product. Marketers that prefer to take this route should evaluate whether or not the product delivers expected benefits to customers to increase sales and earn customer loyalty.

Another common strategy for setting the price of a product or service is known as **Cost-Based Pricing**. This strategy enables a business to set the price of the product by considering different types of costs involved.

If you take a look at costs involved in manufacturing a product, you will notice costs such as Direct Material, Direct Labor, and Factory Overhead Costs.

Direct Material is the cost of raw materials that directly go into manufacturing the final product. Direct Labor includes the expenses of the labor force that directly engages in the manufacturing process of the said product. Lastly, Factory Overhead Costs covers all other expenses that aren't a part of direct material and labor costs. This may be supervisor salary, utility bills, security guard wages, etc.

Apart from these categories, Cost can be categorized into two types based on its behavior. These are Fixed Cost and Variable Cost.

The former stays the same regardless of the level of production. Let's take the example of a magazine facility. Regardless of how many magazines are printed by the publisher, certain costs would stay the same such as rent of the facility and depreciation of machinery.

The latter cost, however, increases or decreases with production. The more units of products are manufactured, the higher will be the variable cost. In the above-mentioned the magazine facility example, the cost of paper is variable. The more magazines are printed, the higher amount of pages would be needed that will automatically increase the price.

Competition-Based Pricing refers to the pricing strategy in which a company decides to set product prices by analyzing the prices set by competitors for similar products. However, it's important for the company to compare features, benefits, costs, and perceived value before adopting this strategy.

New Product Pricing

When it comes to deciding the price of a new product, there are two different ways to do so: market-skimming and market penetration. The key to setting suitable prices for new products is to understand the market and customers.

During the product introduction phase, the company focuses on building awareness. They may opt for Market Penetration Strategy to propagate the product in the market. This strategy works best if the product is intended for the mass market. Lower pricing gives such brands a competitive advantage and they can achieve customer attention through reduced pricing.

The other option for selecting a price for a new product is market penetration. This

means a business sets premium prices for products instead of taking the low-pricing route.

This strategy is ideal when the product is innovative and can change the lives of customers for the better. First movers may benefit from this strategy and earn high profit margins. Furthermore, market skimming also works when a product targets a niche market that agrees to pay premium pricing due to brand image or quality.

Place

Also referred to as placement or distribution, Place is a fundamental element of marketing mix. It is the process of strategically delivering a product to places where customers can easily find and purchase it. Marketers need to ensure that the product is readily available to customers at the place of their choice. Even the highest quality products can fail if they aren't available to customers when needed.

For instance, a customer may visit a superstore to purchase kids' diapers. They may look for diapers by ABC brand, but if the product isn't available, they would end up purchasing another brand. If the new product meets their needs, they are likely to stick with it. As a result, ABC would lose loyal customers.

It's rightly said that "Out of sight, out of mind". This proverb perfectly explains the distribution concept. Ineffective channel distribution hurts businesses like nothing else. Products that aren't delivered to customers on time lead to customer dissatisfaction, ruin brand reputation, and cause inventory management problems.

Distribution Channels: What Are the Options?

Distribution channels or marketing channels describe the methods through which a manufacturer makes the product available to potential customers. A manufacturer has two major options to achieve this goal. They can either distribute the product on their own and keep this function in their hands or involve as many intermediaries as needed.

The first option is **Direct Distribution** in which the company hires staff and sets up operations in the geographical areas of its target audience. This approach enables customers to purchase the product directly from the manufacturer. While significant

investment is required to initially establish a network, this approach can reduce on-going channel management costs since the company directly sells its products to consumers. A common example of this case is Dell Computers.

Direct distribution is suitable for businesses that have sufficient resources and a strong network. It's also important to understand the needs of the local market to best meet customer needs. Otherwise, the decision may backfire and the business would incur huge losses.

The other option is **Indirect Distribution** where a business involves third-parties to make its products available to target customers. Businesses can benefit from the expertise, network, and local experience of distributors. Furthermore, these distribution networks can also help a business expand its customer base and find suitable vendors.

Before making the decision to outsource distribution management, a business should understand its risks too. While this decision saves businesses from the cost and efforts of creating a distribution network, it decreases your control over place-related decisions. Moreover, manufacturers and intermediaries sometimes get into conflict which may negatively affect the performance of the distribution channel.

Now, let's take a look at some prominent intermediaries that can be part of a distribution channel.

Wholesalers Intermediaries purchase products in bulk and usually sell them to retailers or other businesses at lower rates. Since they purchase the product in higher volumes, they benefit from the **scale of economies** concept and get reduced pricing from the manufacturer.

Retailer Intermediaries may purchase the product from the manufacturer or another intermediary to sell the product to consumers. Nowadays, retailers are turning to digital platforms, including social media to facilitate customers in purchasing the items they need from the comfort of their home.

Aside from distributors, wholesalers, and retailers, a business may consider hiring independent facilitating agencies to outsource specific tasks. These agencies can be logistics and warehousing providers, order fulfillment agencies, advertising agencies, financial agencies, and insurance firms.

The keynote in this section is that not every business engages all types of intermediaries. They may acquire the services of certain third-party businesses as per their needs. When the business grows, they may consider setting up an in-house distribution department and eliminating these intermediaries through vertical integration.

Promotion

Promotion refers to activities that are helpful in selling a product. These activities are important to familiarize customers with the brand. Regardless of how good a product is, the brand won't be able to achieve sales goals if target customers aren't aware of its existence.

Many people confuse promotion with advertising. However, advertising is only a small component of this entire process. The business may start promotional activities even before the product enters the introduction phase. They may create the hype to raise brand awareness and encourage the audience to give it a try.

The purpose of promotion is to increase awareness and generate sales and leads. It's a must to set appropriate KPIs (Key Performance Indicators) to determine whether the activities are proving fruitful. Based on these KPIs, the business can evaluate its performance and review promotion strategies accordingly.

Some of these KPIS can include:

- Customer Acquisition Cost
- Marketing Qualified Lead
- Sales Qualified Lead
- Customer's Lifetime Value
- Website visits
- Marketing ROI

Exercise:

Harvard Business Publishing Education

Reading:

The Marketing Mix – Is It Still Relevant Today? – Business 2 Community

Social Media Marketing. A Brief History

Social media is one of those phrases that many people think they should know because it involves the word “social”. After all, people are social beings and can’t survive without interaction.

Today’s kids spend most of their time indoors, playing video games or lying around. This is why mothers encourage kids to go outside and be social. Being social is human nature and a desirable thing.

The next important word in social media is “Media” and it refers to the methods of communication information. From news channels to newspapers, these mediums have a huge influence on society and help people stay up-to-date with the latest information. These organizations capture the attention through compelling storytelling and captivating images.

There has always been a strong relationship between businesses and traditional media. Media has always been good at gathering people to read, watch, or listen to something of interest. From young kids to retired people, they have something for everyone. Knowing this, businesses run ads on print and digital media to cash in on this interest and convince people to buy their products. This is a norm in the business world and it’s normal for a business to attempt to influence consumer behavior through lucrative advertisement.

Back in the day, neighbors would meet each other in the street and co-worker would meet and chat at the water cooler to discuss the latest news and trends. Sometimes the conversation was about life and death and sometimes it was simply about a discount at a local store. Regardless of the discussion topic, people would communicate. Modern technology hasn’t eliminated the need to meet at the water cooler. Instead, technology made it easier to share information with family, friends, and colleagues.

It has turned every person into a market maven. For example, you can capture a robbery at a local auto dealer on your smartphone camera and send it to your local TV station within seconds, or you can snap a few shots of a new hybrid vehicle at the showroom and send it to your brother who’s trying to reduce his carbon footprint.

Social Marketing Is Not New

The reason why many marketers struggle with gaining expertise in social media marketing is that they consider it a new and foreign method of marketing. However, social networking isn't something new. It has always been present in society in one way or another. The only difference between modern and traditional social marketing is technology.

Back in the day, people used to throw parties on New Year Eve or other special occasions. Such events are still held today, but none of them can match parties arranged by Malcolm Forbes, the well-known entrepreneur and the publisher of Forbes Magazine. His 70th birthday party, held in August 1989 created a buzz with its exotic theme, extraordinary arrangements, and the list of famous guests who joined him on his birthday.

The purpose of social gatherings is to celebrate accomplishments as well as meet new people and make friends. You can meet people you may or may not know, get to know them, share thoughts with each other, and make lasting relationships that can come handy in the future. Now compare this with modern social media platforms. Don't they serve the same purpose?

Networking events don't only revolve around business meetings. These conferences have always been family events where business people attended meetings and then enjoyed dinners and games of golf with their spouses. These activities make conferences enjoyable and give entrepreneurs a chance to meet like-minded people in an informal setting.

By critically analyzing social platforms, we can reach the conclusion that social media is like a cocktail party. At these parties, people enjoy themselves, make connections, and often discuss business ideas. It's not uncommon to find people who are interested in your idea and set up a partnership startup with their help.

Social Marketing: Modern Times

In the book *Social Network Analysis: Methods and Examples*, Song Yang and two other co-authors verified the claim that the concept of social marketing is not new in the following words:

“Social networks have been a defining feature of society.”

In the modern times, brands such as Mary Kay and Avon are known for promoting networking. With their multi-level marketing schemes, they encourage customers to refer new customers and earn a commission on every sale. These people then held events and invited over people they knew. This way, they could get in touch with their network to promote these products. These strategies work on the principles of networking and social marketing around the community. These days, people mostly use digital platforms to find referrals.

This concept has always been a part of business marketing. Many of you must be familiar with conferences held at huge Conference Centers. I remember when distributors in the automotive industry used to have full house dealer conferences in Las Vegas, Nashville, Chicago, and other big cities. At these conferences, automotive dealers and enthusiasts can preview the latest models. These days, car shows like Back to the 50's Car Show, Goodwill Festival of Speed, and SEMA Show are all the rage.

Another modern example is the annual TechCrunch Disrupt conference held in cities across North America and Europe. At these technology events, IT startups and professionals can meet new faces, learn from experiences of others, and build business connections. These events support marketing activities and promote brands like nothing else.

Social Media for Business

Not many people realize that social channels can offer unprecedented business opportunities. People prefer to conduct business with people they trust and with whom they share a social experience.

For instance, when a person skydives, the memory stays with them and they enjoy sharing it in social gatherings. If another person accompanied them to the activity, they would excitedly recall the skydiving experience whenever they meet them. This creates a bonding between strangers. Similarly, it's normal for a person to reminisce about the memories of shared experiences with people they know.

The gist of this discussion isn't a new concept. It's rather a new source of sharing experiences. Take the example of a conversation on a Facebook group. The group members share social experiences by sharing posts and posting comments on content. They may later discuss that particular conversation in an online or in-person setting. This conversation is likely to lead to a discussion about potential business opportunities.

Regardless of the platform you use, social marketing thrives on shared experiences. Social media users share experiences in several ways. They may follow each other on Twitter, Instagram, and TikTok or subscribe to YouTube channels to become a part of their experiences.

While many social websites can be found in the digital world, the following 10 sites are extremely useful for businesses:

- Facebook
- Instagram
- YouTube
- Twitter
- TikTok
- Pinterest
- Yelp
- LinkedIn
- WhatsApp
- Snapchat

On Facebook, businesses can set up pages or groups to stay in touch with followers. Instagram, Pinterest, and Snapchat are also trending because visual content usually attracts internet users the most. The same goes for YouTube where more than 5 billion videos are watched per day. LinkedIn is mainly a professional platform and it works best for attracting corporate audiences.

One of the major benefits of social media is that businesses can build global followership. They can interact with followers through posts, live videos, and messages. Moreover, they can also target the right market segment on the basis of their interests or geographical location. For instance, Instagram and Snapchat are more popular among teenagers and youngsters. Businesses that intend to reach the younger audience can get active on these platforms to get desired results.

Social media aids businesses in raising brand awareness at a fraction of the cost as compared to other marketing methods. Engaging content can be posted such as text posts, videos, images, and polls to gain attention. If the content is valuable and attracts followers, they would share it on their social profiles and become brand promoters. Therefore, it's a must for businesses to build a social media strategy.

Despite the various benefits of social media, not many business owners are able to fully utilize these platforms. However, the following tips can help them stand out:

Shortlist the Most Suitable Platforms

It doesn't make sense to set up a profile on every popular social media platform. Not only does it waste time, but also tampers with the efficiency and makes it difficult to stay connected with the audience.

It is rather a better idea to choose platforms where the target audience is present. By staying active on social sites where the ideal audience is present, companies can build a community and become a well-known name in the industry.

Visual Content Is Important

The more engaging the social media posts, the better will be the performance. To attract followers, a brand ought to add visual content in social media posts. This may include video clips, images, and GIFS. Moreover, brands can also ask questions from followers to encourage interaction.

Social Media Contests

Another effective way to drive engagement is to host competitions on social sites. A brand may ask followers to share a post with as many people as they can. The person who invites the most social users to the page can be offered a gift hamper or discount vouchers.

Try Social Media Ads

Social media sites enable businesspeople to promote their brand and products through unpaid posts. But they can also turn to paid advertisement to attract targeted followers and increase engagement in a shorter span of time. Aside from regularly posting updates, brands must also run ads on Facebook and other social sites to generate leads and boost revenue.

Exercise:

Harvard Business Publishing Education

Harvard Business Publishing Education

Harvard Business Publishing Education

What Business Are You Even In?

Do you aim to become a successful marketer and build brands? Then before you begin the journey, ask yourself a simple question. *What business am I in?*

I know the question may seem quite strange to your ears, but let me explain. The reason why many marketers fail to achieve their goals is because they lack industry knowledge. You need to have a strong grasp on current industry and market trends to come up with an effective marketing plan.

Whether you want to develop a marketing plan for your own startup or intend to develop a plan for a client, you need to have clear goals. Before proceeding, find the answers to the following questions. Trust me, social media marketing will get much easier for you.

- What is the purpose of the business?
- Am I selling a product or a service?
- Why do I want to run a social marketing campaign?
- Which resources are available for marketing?
- Should I use traditional marketing along with social media marketing?

Picture this scenario.

You run a small business and offer services to customers, let's say web development services. You recently learned about the benefits of digital marketing and chose Facebook platform to promote services and gain clients. Before thinking anything else, you jump onto the platform and invest money in running ads. But the efforts go in vain when you notice the investment didn't generate sufficient ROI.

So, why did the social marketing campaign fail despite the investment of huge resources?

The answer is simple. There was no effective plan to make the campaign fruitful. This is why it's important to be clear about your industry and goals before taking action.

Know Your Business

It's easy to start a business. You have to choose a product that not only attracts you, but also has a market demand. Then you need to come up with a business plan and gather sufficient resources and bam! You are ready to become an entrepreneur. But is it enough to survive in today's competitive market?

Every entrepreneur strives to make their business a success. While it's no piece of cake, you can achieve this goal through an effective plan.

The first step is to understand every aspect of our business. From suppliers, to customers, market trends, legalities, and marketing avenues, you ought to understand how your business works. You can make better decisions if you know your business well. Let's have a look at certain aspects of business marketing that are crucial for every business.

Know Your Customers

A business cannot survive without customers. Whether you specialize in selling products or services, you need to offer products that solve specific problems of customers. When they purchase these solutions, your business will earn revenue that is crucial for supporting operations.

Therefore, you need to know who your ideal customers are. When you know their lifestyle, preferences, and interests, and demographics, you can better promote products.

From market segmentation to developing buyer persona, there are several strategies to identify ideal customers. We will discuss these strategies in more depth in the 6th chapter.

Customer Relationship

Customers are the vital stakeholders for your business and you can't ignore them. When you understand who your customers are, you can offer products or services that meet their needs. With the help of top-notch customer service and quality products, it's possible to gain their trust and build lasting relationships.

Marketing isn't only about aggressively advertising your products and forcing customers to give them a try. What's more important is to focus on building relationships. Most customers prefer purchasing brands they trust.

Take the example of a salesperson in a hardware shop. When a customer wants to buy a product, the salesperson can earn their trust by guiding them about which brand or product would be suitable for their needs. Knowing that the business cares about customers, they would return to the shop whenever they need hardware supplies.

The modern social media marketing isn't much different. Through your social media page, you can interact with customers to answer their queries and share valuable information. When they start trusting you, they become loyal customers. They may also become brand promoters by recommending your business to their social circle.

Customer Engagement

The term customer engagement is often associated with social marketing, but it has been a part of marketing for ages.

Brick and mortar stores used to keep customers engaged through personal interactions. For instance, a small business owner would talk to in-store customers to ask for their opinion about products. They would conduct surveys and short interviews to understand their problems and further improve quality. Suggestion boxes have always been present in stores so customers could share their suggestions.

The concept of customer engagement is still the same, but social marketing has made it easier for businesses to increase engagement. They can set up social media profiles and post informational content to educate customers.

Social platforms facilitate customers to interact with a brand through private messages or comments on posts. They can easily share their suggestions and ideas as well as the issues they faced when interacting with the business. Through regular interactions, your brand stays on top of mind of customers and they are likely to stay with you in the long run.

Customer Reviews

Brand goodwill is an invaluable asset. Through a good reputation, businesses can gain a myriad of benefits such as more customers, power to negotiate better rates with vendors, lower interest rate on credit, and much more. An effective way to establish goodwill is through positive customer reviews which aren't possible without exceeding customer expectations.

Since before the advent of modern business methods, people have relied on word-of-mouth technique to choose a product. This is still very much in practice. When you need new shoes, you may ask your friends which product out there is the best. This is the oldest form of customer review and endorsement. Digital media has made things much easier.

Customers can now easily share their feedback or reviews via the business website, Yelp, or other social profiles. Any person looking for similar products can go through these to make up their mind.

Lead Generation

Leads are prospective customers who have a particular interest in the market offerings of a firm. The company collects information of those potential customers and designs a strategy to capture their attention.

No matter how large your business and how much resources you have, you can't promote your products to each and every individual or business out there. It doesn't make sense!

What you should rather do is to specify your audience and put in the effort to convert those people into customers. And this can't be possible through lead generation.

Traditional marketing relied on personal interactions for generating leads. Salespeople would go door to door to promote products. Companies often sent direct mails to potential customers. Furthermore, networking events, radio or TV ads, pamphlets, and customer surveys were extremely helpful in this regard.

The purpose of lead generation didn't change with time. What really changed are the methods through which marketers perform this task.

The internet has modernized lead generation. Businesses can now easily create a lead generation form through MailChimp or other online tools. The link to this form can be

shared with customers via email, social media or website. And customers are offered incentives in exchange for their contact information. This information enables marketers to send personalized offers and information to interested customers.

Social platforms such as Facebook and LinkedIn also offer businesses to run targeted ads for lead generation purposes.

Competitor Analysis

Always remember that your business isn't the only business in the industry. With so many business people working hard to succeed, you can't ignore the competition. After all, businesses that simply ignore the tactics of their competitors tend to fail down the road.

Remember what happened to *Yahoo*? They were once the leading internet company around the globe. In 1998, a new small business entered the market, named *Google*. The founders offered to sell the company to Yahoo in 1998 for a meager sum of \$1 million. But the tech giant refused the deal. In 2006, they had another chance to buy another emerging company, Facebook. However, the CEO rejected the deal again.

What happened then? Yahoo made bad decisions because it ignored the great potential of new market entrants. If they performed effective competitor analysis, they could come up with better strategies to retain their market share in the tech world.

The conclusion of this scenario is that businesses must be aware of their competitors, no matter how small they are. There are several techniques such as Porter's Five Forces Model through which a company can evaluate and analyze its competitors. We will discuss these strategies in Chapter 7.

Further Reading:

Understanding the Business You Are In | by B. L. Teague | The Startup | Medium

New insights for new growth: What it takes to understand your customers today (mckinsey.com)

Do You Even Google?

Who doesn't want to make a good impression on others? When we meet people we never got the chance to meet before, we often feel the urge to impress them. After all, it's rightly said that *first impressions are last impressions*.

The same goes for your business. You want to build a reputation and make a positive impression on potential customers when they first interact with your brand.

With an immense increase in ecommerce stores over the past decade or so, the buyer journey now usually starts online. When customers face a problem, they turn to the internet to find a product that solves that particular problem. Not only do they collect information about suitable products, but they also conduct research to compare different available options. At this time, reviews of past customers and product details help them make the right choice.

As a marketer, don't forget that this research is mostly done via a search engine.

How Search Engines Work

You must be familiar with search engines. But do you know how they work?

There are over 1.8 billion live websites on the internet today and this number is constantly increasing. It's not possible to organize such a huge quantity of web pages and find the information you need. Thanks to search engines, this is no longer a challenge.

A search engine is an online program that checks published web pages and ranks them to facilitate users. Whenever a user enters a search term, they go through these pages and list the most suitable items.

For this purpose, it performs several tasks. The first of these is Web Crawling and is performed by bots. This refers to the process of searching available content. Crawling is done to find new pages as well as review the existing web pages.

Next comes the Indexing. Did you read the index of chapters at the start of this book? You must have read chapter names and then accessed the chapter relevant to your need. Indexing works the same way.

Google bots and bots by other search engines create an index of published pages and display relevant results when a user asks.

The last step is Ranking. Do you wonder how search engines determine which websites are relevant when you enter a search query? Then let me disclose that this action is done via ranking. Published pages are ranked as per their relevance, quality, and originality. Whenever a user performs a search, these pages are displayed as per the ranking.

Top Search Engines

While there are many search engines available to internet users, the most popular one is Google. In fact, this paved way for a new phrase, **Google it!**

When a person wants to find some information, they usually turn to Google to find answers. It's no surprise that Google holds around 75% of global search market share. Here are a few other popular search engines you can try:

- YouTube
- Bing
- Amazon
- Ask
- Aol Search

Google is the leading search engine and YouTube occupies the second position. And guess what? YouTube is also owned by Google.

Google Search

Interested in capturing customer attention and convincing them to purchase your products? Then you need to ensure that they can easily find you via search engines. Hence you need to focus on increasing brand visibility.

Start the process by searching for your business on Google. You will notice a list of results. This may include your website and social media pages. However, you may be

surprised that Google displays other businesses in the same list. And sometimes, other businesses are ranked above your own venture.

The next step is to improve the ranking of your business in search results. This way, more and more potential customers can find you online and you can convert them into loyal customers by making a good impression.

How to Improve Search Engine Visibility

Businesses are competing with each other to secure the highest search engine ranking because top 3 search results for any search query tend to attract visitors the most. Google evaluates businesses on the basis of over 200 factors to determine which of these are most relevant to users.

There are various strategies to improve ranking, be more visible, and impress customers. Let's take a brief look at some of the most prominent strategies:

SEO

Search engine optimization is the process of gaining higher visibility in an organic way. Some sources claim SEO to be free, but let's not forget nothing is free in this world. You have to pay a cost for everything. As for SEO, the price is your time and efforts.

SEO is a complex, on-going process. Since there are no hard and fast rules, you can learn SEO best practices through the trial and error method. Google also provides basic guidelines to facilitate business owners.

The best strategy for a business is to value customers and consider their preferences. An essential step is to have a user-friendly website. If you don't have a website yet, it's time to get a business website. These websites are not too expensive and some platforms such as WordPress and Wix offer free websites with certain limitations.

The interface or design of the website should be simple. The easier it is to use different functionalities, the better will be the treatment by search engines. Whether you design a website on your own or hire a professional website designer, getting a good understanding of design guidelines will assist you in implementing SEO strategies.

Search engines are very particular about content. They penalize websites that plagiarize

content from other web pages. So, not only should you come up with unique content, but also add valuable insights that add value to potential visitors. Through quality content, you can attract higher traffic volume and significantly improve the search engine ranking.

Google My Business Tool

Now that you know how important it is to build impactful online presence, you can't ignore Google My Business. It's a powerful tool that enables businesses to create business listings and manage their appearance on Google platforms including Maps and the search engine.

Traditional marketing interacted with the audience through newspaper ads, billboards, and setting up promotional stalls in shopping malls. With this digital tool, interaction is now much easier. You can understand how customers interact with your business.

This platform facilitates businesses to attract potential customers via attractive images, useful information, and satisfied customer reviews. With the help of detailed analytics tools, it's no longer a challenge to find out demographics, geographical location, and interests of target customers.

Run Paid Ads

Aside from organic marketing, you should also add paid advertisement to your marketing strategy. Search engine ads and advertisement on social media are effective in raising brand awareness, generating leads, and increasing revenue.

Although these ads appear at prominent positions on screen and increase visibility, you need to meet specific criteria. However, if done right, these paid ads can help you in achieving goals and customers will start noticing you through Google.

Blogging

Around 78 million blog posts are published every month and receive over 77 million

comments by readers. These statistics are eye-openers for marketers who want to gain attention and gain brand visibility through digital marketing.

Back in the day, marketing people wrote articles for magazines and attended interviews with reporters for better visibility. These methods are still a part of marketing, but blogging and especially guest blogging has made it easier for startups to compete with larger businesses despite limited financial resources.

You can set up a blog for your customers and share valuable insights about their areas of interest. For instance, you can write posts about how the business adds value and share valuable tips to build credibility. Digital platforms like Medium and LinkedIn are suitable for this purpose. Moreover, you can also publish guest posts on reputable websites such as Forbes and Inc.com to increase traffic to your website.

Miscellaneous Options

Remember the yellow pages directories that listed a myriad of businesses along with their contact information? Not much has changed today when it comes to these business directories. The only difference in traditional and digital marketing is that directories are now available online.

Online business directories publish information of businesses on websites. The most popular ones are Yelp, Angie's List, Zillow, TripAdvisor, YellowPages, Foursquare, and many more.

It's an effective way to let people know about your market offerings and share contact information. Furthermore, Quora is another great platform to communicate with potential customers by sharing answers to their questions and informing them about your products.

Further Reading:

21 Web Directories That Still Have Value

Is SEO Important for Every Business?

Who Is Your Customer?

A prevalent myth about marketing is that the more you promote a product, the higher will be the chances of increasing sales. However, marketing enthusiasts know this statement is far from the truth.

The key strategy for promoting a brand is to identify ideal customers. This approach makes it easier to target customers and develop the right actionable marketing plans that are likely to attract customers. A lesser-known, yet effective way to build a customer base is to focus on personality tests, especially the DISC test.

What Is the DISC Test?

DISC test is an effective personality test, based on the DISC theory by William Moulton Marston. It explores behavioral characteristics of a person based on four categories: Dominance/Directing, Inducement/Influence, Submission/Steadiness, and Compliance/Conscientiousness.

With the help of this tool, marketers can identify their character traits and develop a plan to better fit into their job roles. For instance, if you are a shy person and find it difficult to interact with others, this tool can guide you about the best action plan for achieving personal and professional goals.

It indicates the general behavior of a person and highlights factors that motivate them. It offers self-awareness and provides you a chance to learn about your strengths and weaknesses. Being a marketer, you would benefit from learning about your tendencies. You can work towards managing those weaknesses and leverage strengths to succeed.

As you progress in your career and reach top management position, you may want your team to take the DISC personality test as well. It's a great tool for helping managers understand the working style team members. This way, they can better manage them and assign tasks that best fit their strengths to get the desired results.

DISC Test for Marketers

Personality tests help individuals choose the most suitable goals in life. You may opt for a test to determine which career option would work best for you. But you may not be aware that this assessment can also add value for business marketing purposes.

If you have a *Directing* personality type, you may be strong-willed, persistent, and ambitious. With a strong mindset and the ambition to take on challenges, you can cross every hurdle and win your sales goals. Marketers with this personality type tend to focus on facts and figures. So, you may emphasize selling points to generate sales for your business and make a good impression on stakeholders through informative presentations.

Marketers with the *Influencing* personality type are good at communicating. They are usually extroverts, can easily impress others with their persuasive style, and find it easier to achieve marketing goals with help from your network. If you belong to this category, you are likely to be a very creative person who frequently comes up with innovative ideas to boost marketing campaigns.

Steady personality type makes a person stable, focused, and patient. Such marketers tend to be detail-oriented and are quite consistent with their marketing strategies. They may take their time in adapting to change and don't get excited with the idea of updating the marketing plan based on its performance or customer feedback.

The fourth personality type *Compliance* makes the marketer completely opposite of the *Directing* personality type. These salespeople are research-oriented and prefer convincing customers to buy their products through a detailed message about the benefits of products. They tend to believe in educating customers about the brand and earning their trust.

Targeting Customers Based on Personality Types

A successful businessperson makes it their priority to understand the needs and wants of their customers. It enables them to choose products that solve a problem and make their lives easier. When it comes to the marketing plan, it's equally important to know who your customers are and what personality traits they may have.

The DISC test gives an idea about personality types and you can choose which ones you

want to target. This strategy is extremely helpful in creating marketing content that can get the attention of ideal customers and build a lasting relationship.

Directing personality customers are interested in facts about a product and brand. They carefully make buying decisions by evaluating its features. Before making a buying decision, they would want to learn about the experiences of other buyers. They may visit your social media pages and ask in their social circle for recommendations. Marketers can make the most of this opportunity and convert them into customers by offering them what they want.

For Influencing customers, the same strategy won't work. They are driven by innovation and show interest in products that stand out. They are usually impulsive buyers who make buying decisions on the go. Regardless of whether or not they actually need it, the customer may purchase a product if an ad or other marketing collateral seems attractive at first sight. When a new product is launched, you may want to target these customers first.

Customers with a Steady personality are unswerving with their choices. They thoroughly evaluate a brand before giving it a try and stick with their choice in the long run if it suits their needs. They aren't much interested in alternative products and are loyal customers. However, it's important to note that it's a challenge to bring such customers on-board in the first place. They may be loyal customers of your competitors and may not show interest in your products unless your market offerings are significantly better than competitors.

Compliance personality suggests that the customer is detail-oriented. Before they make a decision, they conduct a detailed research about every feature and aspect of the product. They may conduct online research and ask company representatives about its specifications before they make up their mind. They won't purchase it until they are fully satisfied.

Which Social Platforms Work Best for Different Personalities

Traditional marketing revolves around mass marketing. When marketers promote products and services through traditional marketing, they consider the needs and wants of the general audience. For instance, if they place an ad in a newspaper, radio, billboard, or TV channel, they are aware that the ad would be noticed by people of all ages. Digital media, on the other hand, offers more flexibility and makes it easier to target specific

audience groups based on demographics, interests, personality types, location, and other criteria.

Social media platforms are arguably the best methods for promoting products these days. They offer unlimited targeting options to ensure your advertisement content reaches the audience that is likely to be interested in the offer.

With so many social media websites available these days, it is quite a task to determine which platform is most suitable for you. The best bet is to determine which personality types you want to target and then choose platforms where those customers are present.

For instance, Dominant or Directing customers prefer Twitter and YouTube for information gathering and entertainment. They also listen to podcasts about their areas of interest. If you want to reach them, you may want to create a business presence on these platforms.

Next comes the Influencer. These people are outgoing and enjoy spending time in crowds. They join Facebook groups and chat with them through messaging apps. They may also be active on Instagram or Snapchat and making an impression on others with impactful content. Furthermore, they are also likely to be on TikTok, making videos for their followers.

Steady customers are old souls and seek stability. They are usually found on Facebook and LinkedIn even though these platforms have lost their charm with time. They believe in staying loyal to known networks and trusted friends. These customers may not be interested in the latest social platforms and stay with their choices for quite a long time.

Lastly, customers having Compliance personality type are less likely to create personal accounts on social media. They are interested in numbers. They may keep track of data and ROI and learn about various analytics tools for fact checking. These folks are often the only people who read the policy and terms of service for each network.

Creating Buyer Persona

Traditionally, marketers relied on buyer persona to streamline marketing efforts. They would create profiles of imaginary customers they want to target. The customer persona document would include detailed information about customers which helped marketers create a specific plan to make the product attractive to customers who fit the criteria.

In this digital era, nothing much has changed and buyer personas are still as effective

as they used to be. Social marketers can better promote their products and convert leads into customers by optimizing the ad or social content as per their preference.

Since there are no rules or standards for generating buyer personas, you need to brainstorm different factors for this purpose. Here are a few aspects you may want to add into the document:

- Age group
- Occupation
- Education
- Income group
- Family size
- Geographical location
- Social platforms they use
- Personality traits
- Social class

You can add as much information as needed to describe ideal customers. However, make sure the profile suits a big enough group since it's not practical to create personas for individual customers.

Aside from creating buyer personas for target customers, it's also recommended to think about negative buyer personas. This profile is for people that aren't included in your target audience or you may want to exclude them from the target customer list.

Exercise:

Take the personality test by Tony Robbins and discuss the results with the class.

DISC Profile: Free Online Personality Strengths Test (tonyrobbins.com)

Further Reading

How to Use the DiSC Model to Improve Customer Service (hubspot.com)

(PDF) Using disc® to facilitate instruction of adaptive selling (researchgate.net)

THE SURVEY

INSTRUCTIONS FOR RESPONDING

In the space provided below, identify those behaviors which are **MOST – TO-LEAST** characteristic of you in an identified situation. Working left to right, assign “**4**” points to the **MOST** characteristic behavior, “**3**” to the next most characteristic, then “**2**” and finally “**1**” to your **LEAST** characteristic behavior.

EXAMPLE

3 Directing 4 Influencing 2 Steady 1 Cautious

_____ Directing	_____ Influencing	_____ Steady	_____ Cautious
_____ Self-Certain	_____ Optimistic	_____ Deliberate	_____ Restrained
_____ Adventurous	_____ Enthusiastic	_____ Predictable	_____ Logical
_____ Decisive	_____ Open	_____ Patient	_____ Analytical
_____ Daring	_____ Impulsive	_____ Stabilizing	_____ Precise
_____ Restless	_____ Emotional	_____ Protective	_____ Doubting
_____ Competitive	_____ Persuading	_____ Accommodating	_____ Curious
_____ Assertive	_____ Talkative	_____ Modest	_____ Tactful
_____ Experimenting	_____ Charming	_____ Easy-Going	_____ Consistent
_____ Forceful	_____ Sensitive	_____ Sincere	_____ Perfectionists
_____ TOTAL	_____ TOTAL	_____ TOTAL	_____ TOTAL

INSTRUCTIONS FOR COUNTING AND GRAPHING

Total the numbers in each of the four columns. Place the total number in each column in the blank at the bottom of the column “TOTAL”. Check the accuracy by adding all the columns together. When all four columns are added together they will equal 100.

Plot the numbers from the totals columns on page one on the graph below. For example, if the total number in the “D” column was 15, you would place the plotting point (Dot) half-way between the 14 and the 16 on the graph for that dimension.

LEVEL OF ENERGY GRAPH

40	40	40	40
38	38	38	38
36	36	36	36
34	34	34	34
32	32	32	32
30	30	30	30
28	28	28	28
26	26	26	26
24	24	24	24
22	22	22	22
20	20	20	20
18	18	18	18
16	16	16	16
14	14	14	14
12	12	12	12
10	10	10	10

After completing your graph, circle the highest visual point. This represents your strongest behavioral characteristic. The higher you score on the graph, the more intensity you bring to this particular behavioral characteristic. Look at the letter at the graph on page one which corresponds to the highest visual point. Using this letter look up your behavioral style (**D=Dominance, I=Influencing, S=Steady, C=Cautious**)

Personality Styles – ‘S’ = Steady

Description

This person’s tendencies include:

- ◇ Performing an accepted work pattern
- ◇ Sitting or Staying in one place
- ◇ Demonstrating patience

This person desires and environment which includes:

- ◇ Security of the situation
- ◇ Status quo unless given reasons for change

Action Plan

This person needs others who:

- ◇ React quickly to unexpected change
- ◇ Stretch toward the challenges of an accepted task

To be more effective, this person needs:

- ◇ Conditioning prior to change
- ◇ Validation of self – worth

Personality Styles – ‘C’ = Compliant

Description

This person's tendencies include:

- ◇ Attention to key directives and standards
- ◇ Concentrating on key details
- ◇ Working under known circumstances

This person desires and environment which includes:

- ◇ Security assurance
- ◇ Standard operating procedures
- ◇ Sheltered environment

Action Plan

This person needs others who:

- ◇ Desire to expand authority
- ◇ Delegate important tasks

To be more effective, this person needs:

- ◇ To develop tolerance for conflict
- ◇ Opportunity for careful planning

Personality Styles – ‘D’ = Directing

Description

This person's tendencies include:

- ◇ Getting immediate results
- ◇ Causing action
- ◇ Accepting challenges

This person desires an environment which includes:

- ◇ Power and authority
- ◇ Prestige and challenge
- ◇ Opportunity for individual accomplishments

Action Plan

This person needs others who:

- ◇ Weigh pros and cons
- ◇ Calculate risks

To be more effective, this person needs:

- ◇ Difficult assignments
- ◇ Understanding that they need people

Personality Styles – ‘I’= Influencing

Description

This person's tendencies include:

- ◇ Contacting people
- ◇ Making a favorable impression
- ◇ Verbalizing with articulateness

This person desires an environment which includes:

- ◇ Popularity, social recognition
- ◇ Public recognition of ability
- ◇ Freedom of expression

Action Plan

This person needs others who:

- ◇ Concentrate on the task
- ◇ Seek facts

To be more effective, this person needs:

- ◇ Control of time, if D or S is below the midline
- ◇ independence in decision-making

Competition Check

“If you make the opportunity, you’ll be the first in the position to take advantage of it.”

– Biz Stone of Twitter

Competitors are those businesses who offer similar products or services in the same market as yours. For instance, if you sell electronic goods to customers, your competitors will include businesses who also offer electronic items to the same target market. Moreover, businesses that offer substitutes of your offered products are also considered the competition.

With a significant rise in ecommerce stores, it’s easier to tap into global markets. You can reach out to customers present in different countries and encourage them to buy the products through eye catching ads and organic content. This globalization offered a plethora of benefits, but its negative aspect is that it increased competition. Now you don’t only have to compete with business entities that operate in the same geographical area, but also stand out from online businesses present in another corner of the world.

Competition can hurt your business and reduce your market share if you turn a blind eye to competitors’ tactics. You can succeed by monitoring the activities of competitors and building effective strategies to perform better than others. You can learn from them with the help of a thorough competitive analysis report. However, it’s crucial to refrain from spying on competitors or indulging in illegal and immoral activities in an attempt to gain an advantage.

If you are competing with public listed companies, you can easily access their financial performance since the law compels them to publish annual financial reports.

Competing with other established businesses can be a major challenge. However, it’s possible to perform better through a proactive approach. You should focus on research and development and come up with innovative ideas. For example, you may launch an innovative product or service. If no other business deals in similar products, you can achieve the first-mover advantage and earn high profits due to the lack of direct competition.

Types of Competition

Keeping an eye on competitors is the key to survival in the business world. If you are unaware what others are doing, it won't take long before they capture your market share and attract your customer base.

Competition isn't always bad. When you aren't alone, you feel the motivation to keep improving the quality of products and customer service. You also get to learn from experienced competitors who have been in the market for a long time.

In business terms, competition can be divided into three major categories:

Direct Competition

Direct competition is the most common form of business rivalry. It includes businesses that target the same market and offer similar products. If you run a pizza restaurant, your direct competition will include all other pizza joints that operate in the same area.

Some most common examples of competition are Pepsi and Coca-Cola, Target and Costco, Burger King and McDonalds, and Starbucks and Dunkin Donuts.

Indirect Competition

Indirect competition refers to businesses that may have similar products, but adopt a different strategy or platform to reach customers.

For instance, consider that you own a brick and mortar toy shop. Your direct competitor will include similar shops or stores in the same geographical region. But what about online toy stores that also target the same geographical region? They will be called your indirect competition.

Replacement Competition

Your products meet the needs or wants of customers. Some businesses offer products that are different from your offerings, but can replace your products. These are substitutes or alternatives of your products and pose a big threat to your business.

It's not always a simple process to determine this competition unless you're fully aware of the features of your product and understand its pros and cons. When you develop a strategy to differentiate your brand from customers, it's essential to list down replacement products and come up with a plan to deal with these competitors.

Amazon Kindle platform replaced paperback books with eBooks. Therefore, it poses as a replacement competition to traditional book publishers.

Tea and coffee producers are indirect competitors, but these companies compete with fruit juice brands that can replace them. So, fruit juice brands are replacement competitors for tea and coffee companies.

Why Perform Competitor Analysis

Performing competitive analysis assists in identifying your competitors and learning about their business. It's a time consuming process and many entrepreneurs don't find it too important. However, a comprehensive analysis can help you in many ways.

Understand Customer Needs

Businesses often fall victim to market myopia. They focus on the internal expertise or strengths and only consider the firm's perspective. As a result, they ignore changing market trends and fail to understand customer needs.

Competitive analysis is a great way to broaden horizons and explore customer's perspectives. By analyzing the activities and strategies of competitors, you can obtain a fresh perspective and evolve processes with time to stay ahead of the competition.

Identify Potential Threats

A business should always be aware of potential threats and risks. You can perform SWOT analysis to determine threats facing the industry. But competitive analysis is also a must.

With this approach, you can stay updated with what your customers are doing. Furthermore, you can also monitor new market entrants and take the right measures to deal with challenges they create for your business.

Set Suitable Benchmarks

Every business sets certain standards or KPIs to evaluate the performance of different departments as well as the entire organization. Through competitor analysis, you can ensure that your benchmarks suit the current industry trends and make necessary improvements.

Recognize Market Gaps

No matter how saturated the market, there are always some unidentified gaps. Through competitive analysis, you can identify those gaps in no time. Certain market gaps can be filled by offering new products or variants of an existing product. Or you may notice that other businesses don't target specific customer groups.

Imagine that you manufacture furniture. By studying your competitors, you may notice that no competitor specifically currently targets the millennial generation. You can come up with a strategy to sell modern furniture designs to young and first time home buyers to expand your customer base.

Acquisition and Mergers

When you evaluate your main competitors, you may notice that some of them are doing

great and you can learn from their success. However, this won't be the case with every business and you may realize that some of them are likely to go bankrupt in the near future.

You can get in touch with businesses that are struggling to survive. It's possible that an opportunity for acquisition or merger may come up. The difference between acquisition and merger is that the former approach enables you to take over another business, while the latter allows you to combine resources with another business and form a joint organization.

Mergers or acquisitions can help you expand your business. You can make the most of their resources to improve product quality. Furthermore, you can also benefit from their distribution network to tap into new markets.

How to Perform Competitive Analysis

Before you perform competitive analysis, don't forget to evaluate your business. When you understand each and every aspect of your organization, the competitor analysis will prove more fruitful.

Start the process by applying **SWOT analysis**. In this method, you review internal factors including strengths and weaknesses of the company. You also get to explore external factors such as opportunities and threats for the company. With this tool, you can determine the current performance of the business and develop plans to cash in on opportunities and steer clear of threats for business growth.

Another effective method for this purpose is **Porter's Five Forces Model**. Developed by Michael Porter of the Harvard Business School, this model taught businesses that a variety of factors can affect their performance. These factors are as follows:

- **Bargaining Power of Suppliers** - The fewer the suppliers in the market, the more businesses would rely on them. Consequently, they get high authority to increase rates and businesses would have no option but to accept their terms

- **Bargaining power of customers** - When a business has fewer customers, they have to keep prices low to retain them since customers have higher power to negotiate their conditions

- **Existing Competition in the Market** - This refers to the number of existing competitors in the market. The lower the competition, the more they have the power to raise prices

– **New Market Entrants** – It explains the time and resources needed to launch a new business. The easier it is to enter the market, the more efforts will be needed by a business to retain the market share and customer base

– **Threat of Substitutes** – Businesses that deal in products with no close substitutes can increase prices. The higher the number of substitutes, the more difficult it will be for the business to set prices as per their preference

There are several techniques to analyze direct, indirect, and replacement competitors. You can utilize the latest technology and get digital analysis tools to make the task easier. BuzzSumo, SEMrush, Wappalyzer, Brandwatch Audiences, and Searchmetrics are the most popular tools in the business community and help you monitor major competitors online.

Table 7.1 Competitive Analysis Template

<i>Category</i>	<i>My Company</i>	<i>Competitor 1</i>	<i>Competitor 2</i>	<i>Competitor 3</i>	<i>Competitor 4</i>
Company Name					
Location					
Target Customer					
Revenue					
Founded					
Strengths					
Weaknesses					
Brand Personality					
Mission					
Services					
Employees					
Product					
Marketing					

Table 7.2 Marketing Plan Template

Product

Question	Example	Your Answer
Who is your target customer?	<ul style="list-style-type: none">→ homeowner→ 35-75 years old→ lives in Chicago→ 100K+ annual income→ have children	→
What does the customer expect from your products and services?	<ul style="list-style-type: none">→ quick response→ high quality→ great customer service→ prestige→ status→ peace of mind	→
Describe benefits	<ul style="list-style-type: none">→ best warranty→ saves money→ more secure→ local	→
Describe major product features	<ul style="list-style-type: none">→ unique design→ higher quality→ faster→ smaller→ made of metal→ multiple colors	→
Describe how is it different from competition?	<ul style="list-style-type: none">→ more experienced→ high quality materials→ better reputation	→
How is your product branded?	→ unique memorable branding that is consistent throughout all the physical and online channels	→

Price

Question	Example	Your Answer
What is the value of your product/service to the customer?	<ul style="list-style-type: none">→ solves problems quickly and affordably unique and scarce→ knowledge and expertise→ premium pricing	→
What is your pricing strategy and how does it compare to your competition?	<ul style="list-style-type: none">→ entry-level pricing→ competitive pricing→ loss leader→ upsell strategy	→
How does the value compare to your competition?	<ul style="list-style-type: none">→ offers additional services for the same price→ has more experience→ has a longer life-cycle product→ needs less maintenance	→
What are your pricing incentives for new customers?	<ul style="list-style-type: none">→ coupons→ other promotions→ financing	→
What payment methods are available?	<ul style="list-style-type: none">→ credit cards→ cash	→
What are your pricing incentives for loyal customers?	<ul style="list-style-type: none">→ discounts→ reward point system→ VIP offers	→

Place**Question****Example****Your
Answer**

Where do your buyers look for your product/service?

- shopping mall
- online
 - locally
 - internationally

→

Do you need distribution channels? (product)

- dealers
- warehouses

→

Do you need a physical store?

- product needs to be tested before purchase
- large display of items
- informational

→

Do you need a website?

- ecommerce
 - blog
 - social media

→

Do you need physical product placement?

- grocery stores
- specialized stores
- corporate offices

→

Promotion

Question	Example	Your Answer
	→ billboard	
<i>How will you reach your target audience?</i>	→ radio → online marketing → flyers → direct mail → word-of-mouth → search engine optimization	→
<i>What online promotional tactics will you use?</i>	→ social media → email marketing → 3rd party websites like Amazon → content marketing → paid media	→
<i>Will you need a sales team for outbound promotion?</i>	→ sales reps for cold calling → cold emailing	→
<i>What are your competitors doing to promote their products?</i>	→ anything and everything they can, so how will you top them?	→

Source:

4 P's of Marketing Mix (Updated with Example and Template) (angle180.com)

Further Reading:

How to Do a Competitive Analysis in 2020 [Template Included] (bigcommerce.com)

Battle of the Brands: Which Famous Rival Company Has Better Marketing? (hubspot.com)

Social Media History...How Did We Get Here

Social networking is a necessity for people as they want to share their thoughts with others. Back in the day, social gatherings and events enabled people to meet and communicate with each other. But the advent of the internet in the late 20th century offered modern ways for communication.

The earliest method of delivering messages to people living at a distance was through letters. They trained pigeons to carry letters to the desired destination and return home with a response from the recipient. It often took days for the bird to fly to and fro and deliver a message.

Then came the telegraph technology in the 1830s, based on the Morse technology invented by Samuel Morse. It's a lesser-known fact that Morse code technology was the foundation stone of modern social media. It was a telecommunication method in which the sender transmitted their messages through a telegraph machine in the form of dots and dashes.

Morse code has been used throughout the history for transmission of radio signals. During the First and Second World Wars, the US forces relied on this technology for secure communication. Since then, it has been frequently used by the commercial aviation industry as well as for military purposes.

Radio technology and telephone made it easier to remotely communicate with people. But things took a rapid turn after the invention of the internet. An early version of the internet was announced as early as 1970, but it took around two more decades before a commercial version could be developed. The modern-day World Wide Web came into being in 1990 which paved the way for convenient and efficient communication through innovative social platforms.

Early Social Media Sites

Blogging platforms played a major role in the development and massive success of social

media networking. The first known blog was called Links.net and was developed by a young college student. He referred to this site as Justin's personal homepage.

John Barger is recognized as the inventor of the term "weblog" that was later shortened to "blog" by Peter Merholz. He is one of the founders of blogging technique and wrote informative blogs about artificial intelligence, internet culture, technology trends, and other progressive areas.

Some interactive blogging platforms originated in that era include OpenDiary, Blogger, LiveJournal, WordPress, and TypePad.

While social media gained popularity during the first decade of the 21st century, the first known social website was actually launched in 1997. **SixDegrees** was owned by MacroView and survived only until 2001. It was a unique platform that facilitated users to set up personal profiles, create contact lists, invite friends, and interact with them through short messages. The Bulletin board was another attractive feature for its users. SixDegrees was relaunched a few years later as a private and invite-only platform.

The model was adopted by many other technology companies and several other social websites came out in the early 2000s. Some of these were revamped as dating sites, job searching platforms, and gaming forums. Some examples of such sites include BlackPlanet, Friendster, Xing, Asian Avenue, and Myspace.

Myspace was formed in 2005 and was the first social website to reach 100 million active users per month. They remained the most popular website around the globe between 2005 and 2008. However, their popularity was short-lived and Facebook soon captured their market share. The website is still active, but couldn't regain its former success.

Social Media in the 21st Century

The beginning of the 21st century was the time when multiple social platforms were launched. Almost every year, a new website is launched and older ones gradually lose their popularity.

Let's take a look at some of the most well-known social websites that are used for personal as well as business purposes.

Facebook

With over 2.7 billion monthly active users, Facebook is currently the largest social networking website. It's an intuitive platform where you can add friends, chat via Facebook Messenger, share your thoughts, and communicate with others via a variety of content such as funny memes, live videos, polls, and 360° photos.

Founded in 2004 by a group of Harvard students, Facebook has captured the interest of marketers. Businesses can build communities around the brand through a business page or group. Aside from posting engaging content, businesses can also attract customers through ads with specific targeting options.

This site is popular mostly among Baby boomers and losing the attention of Generation-Z. Also, statistics suggest that most users access their accounts via smartphones.

Twitter

Twitter is a microblogging network where users can write posts of up to 280 characters with a limit of maximum 2,400 posts per day. While it's available across the world, Twitter has the highest number of users in the US and Canada.

Businesses ought to be present here as a majority of people prefer interacting with brands and asking questions through this platform. Furthermore, Twitter users engage with brands more than any other platform and ads offer higher ROI than many other social websites. The key to mastering the Twitter game is by making the most of the right hashtags.

It is popular among affluent people and most users are millennial. As of 2020, 152 million users visit the website on a regular basis.

TikTok

Launched in 2016, TikTok video sharing app soon became one of the leading social apps around the globe. It was merged with Musical.ly in 2018 and has been downloaded over

1.5 billion times by users. Initially, it was popular among the younger generation, but businesses turned to this platform when they recognized its importance.

Whether you run a business or work as a marketer, you can't ignore this useful website especially if your target audience actively uses this app. You can benefit from influencer marketing or create challenge hashtags for promoting a product.

YouTube

YouTube isn't only the second most popular social website, but it is also ranked amongst the leading search engines.

Marketers make the most of this platform for advertising campaigns. It's because YouTube ads bring higher ROI than most other social platforms. However, it's important to remember that the YouTube smartphone app is highly popular and around 70% of YouTube users watch content on their phones.

From how-to videos to product guides, vlogs, online events, testimonials, and employee interviews, you can create different sorts of engaging videos to increase views.

Instagram and Snapchat

Image and video content tend to interest a majority of social media users these days. It's because visual content is easier to consume and doesn't take a lot of time. For this purpose, Instagram and Snapchat are your go-to digital marketing platforms.

With over a billion registered users, Instagram offers you the opportunity to expand the reach of your brand. However, the best way to choose the right platform is by determining where your audience is present. Marketers can reach out to their customers through impactful videos, images, infographics, and stories.

For instance, Instagram has more millennial users while Snapchat is Generation-Z's favorite. Similarly, Insta users earn more than Snapchat users on average.

LinkedIn

Launched in May 2003, LinkedIn is one of the oldest social platforms. It was developed to bring businesses on a single platform where they can network with other professionals.

The platform attracts people with a wide range of professions. Businesses can set up profiles and post vacancies for recruitment purposes. Similarly, working professionals can share experiences with their network and look for job offers.

LinkedIn introduced a targeted ad service for businesses in 2005. The latest features include live video sharing, skill development courses, and opinion polls.

There are many other social and messaging platforms that were developed during the first and second decades of this century. Pinterest, Reddit, Tumblr, WhatsApp, and Qzone are some examples. With the right social marketing strategy, you can effectively build business presence on these websites and expand your customer base.

Blogging Platforms

The rise of blogging platforms in the 21st century paved the way for businesses to increase visibility, interact with the audience, and learn about their thoughts and experiences.

The initial blogging platforms were quite complex, but with technology developments, anyone can create a blog without breaking the bank. When it comes to blogging, there are many options such as Wix, Blogger, WordPress, Tumblr, etc. With these content management systems, it's no longer a challenge to publish informative content for the right audience.

Whether you wish to start a personal blog or need one for business needs, you can easily host it on these websites for a reasonable price. As of December 2020, over 31.7 million people publish blogs in the US alone.

Medium is another reputable online publishing website where registered users can post content for followers and read posts from other authors. It's a great way to produce and promote content and engage with people with similar mindsets. The platform offers different membership plans to users.

Further Reading:

A Timeline of Social Media (infographic) / Digital Information World

PART 2: SOCIAL MEDIA MARKETERS AND MARKETING STRATEGY

Applying Basic Marketing Principles to Social Media Marketing

Before we move forward, let's go back to some of our earlier definitions of marketing. Seth Godin, the founder of Seth Godin Productions and Do You Zoom explained the concept of modern day marketing as:

“Marketing is at the core of what we do. It is the story you tell, who you're telling it to, and why people are going to buy your product or service.”

He also said, “Marketing is no longer about the stuff that you make, but about the stories you tell”.

Social media may be a new technology, but it doesn't mean carrying out marketing campaigns on this medium is a new thing too. Before you think about promoting a brand on social media, you should know about basic marketing concepts. This marketing knowledge will assist you in making the most of social platforms and spread the brand message more effectively.

In Chapter 2, we talked about 4 P's of marketing with respect to traditional marketing concepts. It's time to move forward and explore how the concept of marketing mix is applicable to social media marketing.

Product

When you think of Product in the traditional marketing perspective, the first thing that comes to mind is a tangible product or service businesses offer to meet a specific need of the audience. The concept of product in social media marketing is no different.

You may create a business profile on LinkedIn, get active on Instagram, or launch a channel on YouTube to promote your product and build your brand. Just like other entrepreneurs in the digital world, you can also reach the target audience via social channels.

Before proceeding with marketing efforts, you need to get a clear idea of the benefits as well as negative aspects of your market offerings. You should know how it adds value to

consumers, what the USPs (Unique Selling Points) are, and what makes it different from the competition.

In the digital era, accessing the required information is easy. Customers are woke and socially aware. They prefer brands that not only develop products to meet their needs, but are also conscious about preserving nature while doing so. You can focus on Corporate Social Responsibility (CSR activities) during the promotion phase, but sustainability should be incorporated into the organizational culture.

You need to invest in environmental sustainability and take actions to reduce your carbon footprint. It's best to adopt a green business model through waste management and reducing consumption of natural resources. Furthermore, workforce diversity is also an essential element for businesses these days.

It's not enough to promote the benefits of a product. However, you can gain higher visibility on social media and better promote the products by convincing the audience that you don't only believe in making profits, but are also doing good for society and the environment.

Price

Do you remember the concept of Price in the marketing mix? It's a crucial component of your product marketing strategy and refers to the strategy of setting a price for your products.

The right pricing strategy is important because it's the driving force of the success or failure of a product. If your prices are too high as compared to the competition, then you are likely to lose customers. On the other hand, low prices may cause you losses if they are lower than the cost incurred in developing the product.

Digital or social media marketing has also affected this module. Before the popularity of social networks, business owners had to invest a huge sum in purchasing or renting a location where they could display their products. Customers would visit them and check products before making a buying decision. As a result, the cost of the product would go up by adding utilities, rents, and other overhead expenses.

While brick and mortar stores are still present, eCommerce stores have gained huge popularity and over 24 million businesses are selling products via their websites or social media. The benefit of online selling is that the overall cost is decreased.

Many businesses store products in their warehouses and send them to customers as

they place the order. As a result, you can sell products to customers at a lower price since you need not pay shelf space cost. This way, you can choose the *Cost leadership strategy* and offer products at lower prices to gain a competitive advantage.

Technology has also reduced the need to maintain huge inventory.

The concept of **Dropshipping** evolved with an increase in social media marketing. All you need to do is to contact a manufacturer and work as their fulfillment center. When a customer places an order for products they need, you forward this request to the manufacturer. From manufacturing to product delivery, they will handle every task and you can earn profits with a limited initial investment. Customers are interested in online stores due to convenience as well as lower pricing as compared to in-store prices.

If you visit a supermarket's website, it's possible that their online prices would be different than in-store prices for the same product. One of the major reasons is that the cost of running an online store is lesser than physical stores.

Furthermore, you can also adopt the JIT (*Just in Time*) method to cut down on inventory costs. By implementing an effective communication system within the organization, you can develop products when customers place orders instead of manufacturing them in bulk. With this approach, you can further reduce prices for online stores or customers that contact you through social media pages.

Place

When it comes to 4P's of marketing, Place defines the platforms where customers can find or access your market offerings. Regardless of whether you offer a tangible or intangible product, service, or experience, the rise of social media has certainly changed how you sell products to customers.

Traditionally, in-store shopping was the only option for customers. So, manufacturers were keen on making sure that their products are easily available at supermarkets where their target market shops. They partnered with distribution networks to expand their reach and spread the word. While distribution channel management is still a part of business marketing, digital platforms especially social media websites have added a distinct platform through which a business can sell its products.

Businesses that are active on social media can make the most of opportunities. They can post engaging content to make people talk about the brand, interact with them to learn about their experiences, and respond to customer reviews for further improving customer

experience. Furthermore, customers can contact brands 24/7 through social media and place orders without hassles.

Aside from social media marketing, businesses can also advertise through search engine ads, email marketing, and other online advertising platforms and offer a unique experience to each customer.

Promotion

The importance of traditional marketing can't be denied, but promotional marketing efforts work best when you combine traditional marketing with digital marketing.

Thanks to the modern-day digital channels, especially social media, businesses can now spread the word about their brand through multiple avenues. These platforms aren't only cost-effective, but they also save time and let you reach the targeted audience that is likely to be interested in what you sell.

For digital promotions, social media is the leading choice. Through these websites, you can build lasting customer relationships and convert them into long-term customers by winning their trust. You can run low-cost ads and promote engaging content for this purpose.

Aside from social media marketing, businesses can also advertise through search engine ads. If you manage a business website, it's also a good idea to invest in Search Engine Optimization. This way, your brand will appear in top search engine results and higher visibility may lead to higher website traffic and increased sales.

Lastly, email marketing is another powerful tactic for promoting products. You can attract potential customers through special discounts and Buy-One-Get-One-Free offers.

Activity:

With reference to the Marketing Plan Template, choose a company and product of your choice. You can select your startup or a client's business too. Now apply the concept of marketing mix and answer the questions in the given table for your business.

Further Reading:

Marketing Mix for Next Generation Marketing – ScienceDirect

Video:



One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://open.library.okstate.edu/introtosocialmedia/?p=100>

<https://www.youtube.com/watch?v=U-jQIBxaLRw>

What's it All For?

So far, we have discussed marketing principles as well as the impact of social media on marketing tactics. You may often hear that businesses ought to invest in social media marketing. With this constant reminder, you may wonder why marketers emphasize social media marketing so much when there are many alternative options available. So, let's dig deep and find out the importance of social media for businesses.

In social media marketing, stories matter more than the product you intend to sell. So, there is no better way than social media posting to tell your stories and spread your brand message.

You can create videos or image content regarding the background of your business, teams, and products. Customer testimonials act as a great tool to capture attention. You can post the right content to build a brand reputation.

A major benefit of social marketing is that it's cost-effective when compared to traditional marketing methods. It's not easy for small and even medium-sized businesses to compete with big names mainly due to limited financial resources. You may hesitate when it comes to investing in advertising or else your expenses may shoot up. But thanks to social media, you can now promote your brand without breaking the bank.

Businesses post on social media to keep followers engaged. The more they are engaged and respond to your content, the easier it will be for you to retain them as loyal customers. In fact, they may turn into promoters and refer your products to their friends if they are highly satisfied with your products as well as customer service.

Paid advertising on social media is useful because of its several targeting options. When you create an ad campaign, you can specify the target audience. This way, you can rest assured that your investment won't go in vain and the ads will reach Facebook, YouTube, or other social media users that have an interest in your offers.

Another exciting feature of social media advertising is retargeting options. Do you visit a website through the browser and then see the ad for the same website when you visit your social profile? This approach is referred to as retargeting.

Social platforms are aware of your online activity. Based on this information, they display ads of websites you recently visited. You can make the most of this feature to advertise your products.

For instance, an internet user may view your eCommerce store and view products.

However, they may not always buy it after viewing it only once. By showing them the ad for the same product at a later date, you can convince them to give it a try. But don't bombard them with the same ad multiple times a day, or else they would get irritated and may end up blocking you. You should use this advertising feature carefully to expand the customer base.

SEO (Search Engine Optimization)

Creating paid ad campaigns is good for promoting your business online. But it's equally important to focus on increasing the organic traffic. The better your website is optimized for search engines especially Google, the more it will benefit your business in the long run.

Increase Website Traffic

Who doesn't want to increase traffic to their official business website? With SEO, your website will appear among the top search results when users search for your target keywords. This will drive more users to your website.

Remember that visitors who access your website through a search engine are likely to be interested in your products or services. If your website offers a good user experience, they would stay around and browse through product categories. Once they find the products they are looking for, they may place the order.

So, we can say that SEO doesn't only increase website traffic, but it actually increases quality traffic that can be converted into customers through some effort.

Decrease Customer Acquisition Cost

Every business aims to increase customers. But you can't afford to do so if the cost of acquiring a new customer is too high. If you don't want to exceed your budget, then SEO is the right choice for you.

It takes time before SEO activities start showing the desired results. But with regular efforts, you can increase visibility through optimization. Since it's much cheaper than paid advertising, you can gain customers at a fraction of the cost.

Moreover, the SEO strategy works 24/7. You don't need to stay online to promote your brand. With a good search engine ranking, potential customers can view the website any time of the day and make buying decisions without the need for salespeople.

Direct to Consumer

Dell is a reputable computer manufacturer that has its customer base around the globe. Initially, they used to sell their products via independent channel members, but they adopted the Direct-to-Consumer model in the 1990s. They eliminated third-party businesses and now sell their systems directly to users.

So, what made them an aspiration for other businesses?

Selling products directly to consumers isn't as easy as it seems. You need to build a strong team that can manage a myriad of operations. You may also have to compete against stores that have been in the business for a long time and have a loyal customer base. You also need to ensure that the product reaches customers without delays.

However, you can adopt this model to enjoy its never-ending perks. Direct selling gives a better chance of establishing relationships with customers. You can know their concerns and suggestions to improve their experience on an on-going basis. Since it eliminates the need for distributors, retailers, and other channel members, you can reduce pricing due to relatively lower costs.

Social media marketing is extremely beneficial to meet this goal. You can promote products directly to consumers through social platforms and deliver orders at their doorstep once they place the order.

PR Brand Awareness

PR refers to deliberately spreading the news about a business with the help of media organizations to build a positive image of the firm.

You can't pay media organizations to assist you in this regard. However, TV channels,

radio show hosts, and popular blog owners contact entrepreneurs on their own that have made their name in the industry. You can also create press releases to inform the target audience about events, activities, and developments within your organization.

PR campaigns are fruitful since they improve customer perception of your business. When the media they trust says good things about you, there's a good chance they would want to learn more about your business.

You should plan events for the well-being of the local community to give back to society. For instance, you may arrange an event to give school supplies to needy kids, arrange charity drives for the poor, or organize blood donation drives. When local newspapers, magazines, and news shows cover these events, you will gain good publicity.

PR efforts not only bring results, but they don't cost anything in most cases. So, if you want people to think about your business, raise awareness about your work, then PR is one of the best options for you.

Lead Generation

Digital marketing helps businesses grab attention and increase customers at a reasonable cost. But in order to achieve these goals, you should rely on lead generation tactics suitable for today's customers.

Lead generation campaigns can be carried out via social marketing, PPC search advertising, blogging, etc. This approach introduces your brand to the target audience. When they know about the products you offer, they may look for your website or social accounts.

These campaigns are good for your business because they let you collect the information of potential customers in a legitimate way. With their consent, you can later use this contact information for email marketing and SMS marketing to share brand details, discounts, and deals with leads to convert them into customers.

Lead generation works best when your audience willingly shares their information with you. You can offer them incentives for this purpose. On the basis of this information, you can engage them via tailor-made content that suits their preferences.

Further Reading:

<https://buffer.com/library/social-media-for-small-business/>

The ROI of Your Mother (Gary Vee said it, not me)

Digital marketing is a must for businesses in this era. It's because around 60% of the world's population is present on the internet. Your competitors are likely advertising on digital platforms and interacting with their target audience via social media. So, you may end up losing these precious prospective customers.

Social media has become a part of our lives. Whether you want to talk to friends or build business networks, social platforms are the way to go. With targeted social ads, you can effectively run campaigns to increase brand awareness, increase traffic to your official business website, convert visitors into customers, or engage the existing customer base. If you want to make the most of these platforms, you can't ignore analytics.

Gary Vaynerchuk, commonly known as Gary Vee is the king of digital marketing. During a corporate meeting, he was enquired multiple times about the ROI of social media campaigns at his company. When the top executive manager kept asking the same question, he gave back with a question of his own: "What's the ROI of your mother?"

While it may seem a personal attack to many, Gary Vee actually raised a great point. Being the marketing genius that he is, he highlighted the importance of context and efforts when it comes to social marketing.

He shared this memory in a 2011 event. At that time, not many tools were present to calculate the return on investment for social media campaigns. He implied that it's not possible to measure the ROI of his mother, but it reflects in his achievements. If his mother didn't encourage him to be his best and boost his self-esteem, he wouldn't be able to reach where he is today. To be precise, it's not easy to calculate the exact ROI of certain things, but it doesn't mean those things aren't valuable.

With time, businesses became more familiar with social marketing and a myriad of tools and metrics are now available to marketers. Therefore, he rephrased his earlier claims in 2015 and enlightened us with the fact that the ROI of social marketing can be measured and it's important to keep track of these performance indicators.

ROI of a tool is directly proportional to the time and efforts you invest in mastering it. For instance, the ROI of you playing basketball may be zero or a few hundred dollars if you bet on games. But a game of basketball will have a much higher worth for LeBron James

considering that he earns over \$39 million per annum salary, excluding sponsorship deals and other income. It is only because he spent years learning the game and investing in improving his skills.

The same goes for social platforms. If you keep investing in social media marketing and build your brand online through aggressive organic and paid marketing, then the ROI will go up in the future.

Increasing the ROI of Social Marketing Campaigns

Social marketing works best when you create long-term goals instead of focusing on short-term benefits. Your marketing campaigns should align with the organization's vision and promote a positive image. Moreover, you should also define clear objectives you intend to achieve with social marketing campaigns. This way, you can increase the monetary and non-monetary revenue earned against these efforts.

Time

Regardless of which business you start, it will take time for the business to become a success. You ought to build networks, create goodwill, expand the customer base, and improve cash flows. Social marketing is no different.

You need to spend a lot of time understanding the social world. Once you have set up business profiles on social platforms of your choice, you have to come up with the right content strategy. You need to learn who your ideal audience is and create content as per their interests. You also need to determine what your competitors are doing differently and learn from them.

Your social marketing efforts may not give much ROI during the initial days or even months. But if you come up with an effective plan, things will start getting better with time. So, keep exploring the world of social marketing and your brand will eventually grow online with time and efforts.

Money

It's a prevalent myth that social media is free. Let me clear this misconception for you. Social platforms aren't free for businesses or even individuals. You spend your precious time chatting with friends and scrolling the timeline when you could have spent it doing more important tasks. So, you pay the price in the form of time.

However, it's important to remember that businesses shouldn't only rely on organic social marketing for growth. Social media ads are extremely helpful in meeting goals. Not only are they relatively cost-effective as compared to traditional marketing channels, but they also offer better targeting options.

Businesses spend millions on social ads, but you can invest in these ads as per your budget. There are a myriad of targeting options available and you can reach the audience based on their gender, location, interests, devices, online activities, behaviors, demographics, and many more specific options.

Furthermore, you can also run marketing campaigns for the audience depending on their buyer's journey stage:

- **Awareness Stage** – Brand Awareness and Reach
- **Consideration Stage** – Traffic, Engagement, App Installs, Video Views, Lead Generation, Messages
- **Conversion Stage** – Conversions, Catalogue Sales, Store foot Traffic

Analytics Tools for Social Media ROI

You can spend significant amounts of time and money in building social profiles and running comprehensive ad campaigns. But how would you know whether your efforts bring the desired results?

The best way to track your social ad campaigns is through analytics tools. You can find various tools and software that provide useful information. With the help of this data, you can optimize your social media strategy and meet predefined marketing goals.

So, here are some of the best analytics tools that may prove the right choice for you:

Hubspot Marketing Analytics

Hubspot Marketing Analytics dashboard offers a unique solution for your social marketing needs. It tracks the ROI of ad campaigns on any social platform, assists you with creating Calls-to-Action that drive results, guides you about the best SEO strategies, and lets you create attractive landing pages for lead generation.

Google Analytics

With Google leading the tech industry, it's no surprise that their social media analytics tool is also one of the best options out there. It is compatible with Google partner platforms including YouTube. You can also integrate it with your business website to monitor website traffic. You can determine how much traffic each social platform directs towards your website and find out detailed information such as engagement, bounce rate, conversion rate, etc.

Mention

Mention is an innovative tool through which you can find out how your brand is doing online. It informs you about discussions related to your brand and lets you know what your customers are saying about you. You can also use this tool to learn about your competitors and take appropriate actions to further improve your social presence.

Keyhole

If your social marketing strategy revolves around Twitter, Facebook, and Instagram, then Keyhole may be the ultimate solution for you. Not only can you explore the performance of social campaigns, but also find out when your target audience is online and how they

engage with social posts. You can also learn about reach, impressions, engagement, and conversion from individual posts as well as the entire ads campaign.

Aside from these standalone tools, you can also utilize analytics dashboard offered by different social platforms. They include Twitter Analytics, Facebook Insights, LinkedIn Analytics, Pinterest Analytics, last but not the least YouTube Analytics.

Further Reading:

Social Media Analytics: 12 Hidden Reports to See if Your Social Strategy is Working (neilpatel.com)

Video:



One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://open.library.okstate.edu/introtosocialmedia/?p=104>

How to Get Your Business the Most Attention Possible in 2020 | Game Changers Summit Keynote 2019 – YouTube

Every Network is an Island

When you decided to study social media marketing, you must have defined a few objectives. You may be exploring the social marketing world to work as a social media marketer for a business or get familiar with the concepts so you can implement the learning on growing your own startup. At this stage, many people may think “Which social media website is the best option for a business?”

It's a never-ending debate and you can waste your time in the argument. But the simplest answer to this debate is that every network is important. As for the decision of choosing which platform will work best for you; it entirely depends on your goals.

Social websites were developed to serve different purposes. For instance, Facebook brought together people from different parts of the world, LinkedIn facilitated online business networking, and Instagram enabled people of different age groups to capture important moments and share them with each other. So, before you reach the conclusion, it's crucial to understand the benefits of each platform and then decide which website has the highest capability of meeting your business goals.

Who Lives There?

Social media attracts marketers due to its plethora of targeting options. Traditional marketing mainly focuses on mass marketing, but with social marketing you can efficiently decide the audience you intend to target with your marketing campaigns.

Before you launch a marketing campaign, it's essential to set goals. During this goal-setting phase, you need to define what type of audience should view your ads and how they should interact with the business. For this purpose, you should know what kind of internet users you will find on each social platform. So, let's learn more about the audience on popular social media websites.

Facebook

Facebook is populated mostly by adults of 25-34 years age group. The second largest group is 18-24 years who make up 23.8% of Facebook's population and only 4.8% of users fall into the senior age group. The biggest country present on the platform is India, while users from the US and Canada are only 10% of the total Facebook population. As for gender, males dominate the platform with 56% of the total population. Also, 51% active users visit the website several times a day and 75% of Facebook users are at least college graduates.

Twitter

With 500 million tweets sent every day, Twitter is one of the busiest social platforms. Talking about age groups, 25-34 year olds make up 28.9% of total users, while 35-49 year olds are 28.2% of total users. Lastly, the smallest age group on Twitter is 13-17 years with only 9.1% of share.

80% of users are affluent millennials from all around the world who use the website to get information. Most users come from the US, Japan, India, and Brazil respectively. As for businesses, \$913.8 million were spent on ads in 2019. Furthermore, 93% of Twitter users engage with brands by retweeting their posts or sharing their thoughts and experiences about brands of their choice.

Instagram

On Instagram, the highest population is of 25-34 year olds who make up 33.1% of all users and age group of 18-24 years is second with 29.6% share. Most of them come from the US, whereas India and Brazil hold second and third positions respectively. 43% of these users are college graduates and 42% earn over \$75,000 per annum.

Over 510 million users are females and males are behind with a difference of 20 million. These users spend around 28 minutes a day on Insta. Most users follow at least a single

brand on the app and 73% of teens in the US find Instagram the easiest way to reach and interact with a brand.

TikTok

TikTok is a customer favorite app and stands second among the most popular free apps of 2019. Its users are present in 141 countries while China, India, United States, and Turkey are among the countries where it is more frequently downloaded and used.

44% TikTok users are females and 56% are males. Out of these, 41% users are aged 16-24 years who spend at least 52 minutes every day on the app, watching videos related to entertainment, dance, pranks, fitness and other categories.

90% of TikTok or Douyin users access the app via Android smartphones and maintain a healthy engagement rate of 52%. In 2019, people spent \$115.3 million on the app for in-app purchases, influencer marketing, etc.

This was a brief overview of some popular social platforms. You can opt for the platform that suits your business needs.

What Language Do They Speak?

Whether you're talking to friends in a party, communicating with little kids in social gatherings, or sharing thoughts with business associates in a professional setting, you should always be aware of your audience. When you choose the language or tone they understand, you can conveniently communicate with each other without misunderstandings.

Don't forget this rule when communicating with your audience on social media. Creating a profile on social websites is easy. What's difficult is to spread your message and get people talking about the brand in a positive manner. However, this objective can be achieved by determining what type of content the audience prefers and creating posts accordingly.

Hashtags (#)

Hashtags were introduced by Chris Messina in an attempt to organize content on social media. Twitter platform first introduced this unique feature in 2007, but it was later adopted by Facebook, Instagram, YouTube, Pinterest, and LinkedIn due to its usability.

A hashtag categorizes content on the basis of topic. If you want to reach the right audience for your business, you need to target popular and relevant ones. Moreover, you can also create custom hashtags to promote your products.

Let's discuss this concept with an example. Imagine that a roofing service provider hires you as a social media marketer. To build their business online, you need to come up with suitable hashtags for the social marketing strategy. Here are a few trends and hashtags that may prove useful:

#roofing #roofingcontractor #construction #greenroofing #roofrepair #roofgutters

Long Form vs. Short Form Content

The internet users tend to have short attention spans. They easily get distracted and can ignore your posts if they don't find it interesting. This is why content marketing in digital media focuses on captivating and concise content that can keep readers hooked till the last line.

If we need to keep the content short, how can we share important information or news with the target audience?

It's common for social media marketers to get confused about the length of content. But you should remember that the content length depends on the interest of your audience as well as the platform where you intend to post it.

If you are planning to set up a company blog, it's best to opt for long-form content. The purpose of blogging is to educate people about a relevant topic and offer comprehensive solutions to problems. For example, if you are an expert in providing electrical installation and repair services, you may want to write posts about safety tips for customers. Blog posts can be 500-1,000 words, but you should aim for publishing blogs of 2,000-2,500 words to boost SEO score.

LinkedIn is also suitable for posting long-form content. You can write about your area of expertise and experiences to share knowledge with other professionals.

Other social platforms such as Facebook, Twitter, Instagram, etc. may be suitable for short-term content. Whether you are thinking of creating text posts, videos, or images, it's a better option to keep the content short for better engagement.

Also, don't forget that long form videos aren't compatible with most social websites. Instagram supports videos of up to 15 seconds. So, if you are creating long form informative videos, it may be a good option to post it on YouTube and share a brief snippet on Twitter and other social websites. Your followers who find the topic interesting will visit your YouTube channel to watch the entire video.

What's Their Favorite Dish?

Back in the day, social media marketing was all about text posts and still images. With technology advancements, a wide variety of content is now available to internet users. Let's first take a look at the most popular types of digital content. After that, we will discuss which content goes well with popular social websites.

- Blogs or articles
- eBooks
- Images (still images, GIFs, 360° images)
- Videos (recorded videos and live streaming)
- Infographics
- Testimonials
- Contests
- Polls
- Podcasts
- Webinars
- How-to guides

Instagram is an image-based platform. To promote your brand, you can share high-quality images of products, team members, as well as stills from networking events. Adding relevant captions and hashtags is also essential. A similar strategy is suitable for **Pinterest** where you can capture attention via images.

As for **Facebook**, videos perform far better than any other type of content. This includes

live streams as well as processed images for coverage of organizational events. You can also post videos developed with the aim of advertising on your Facebook page.

With the increasing population of **TikTok**, you shouldn't ignore its importance in the marketing plan. You can complement videos with captions and can include links to your website to increase web traffic.

Twitter network is known for its credibility when it comes to news and information. Users of this platform show more interest in professionally processed content which includes informational infographics and videos.

For **LinkedIn**, you can turn to long form articles, user guides, and eBooks to increase engagement. We all know **YouTube** is one of the most popular video streaming websites. So, you can post videos on this platform regardless of their size or length.

Reading:

<https://www.oberlo.com/blog/social-media-marketing-statistics>

<https://backlinko.com/social-media-users>

What Network is on Now?

Digital marketing strategy plays a critical role in business growth. With the right strategy, you can raise brand awareness, attract the target audience, and build lasting relationships for a win-win situation. However, your marketing efforts can prove fruitful only if you understand how to use social platforms to your advantage.

Social media has become a part of our lives. Successful marketers put themselves in customers' shoes and choose a strategy that focuses on their pain points. If you want to increase the efficacy of your digital marketing campaigns, you need to learn about popular social media websites.

While a myriad of social media websites is available these days, you can't promote your brand on each and every website. By focusing your efforts on websites that are popular among your audience, you can drive results.

Why Do You Want One to Win Or Lose?

Myspace got the first-mover advantage and remained the leading social website for quite some time. However, when Facebook was introduced, it captured a huge market share in no time and left other social media websites struggling with their loss.

When an innovative company is launched with the right strategy, it has a good chance of eliminating the predecessor and becoming the market leader. In the past, we have seen many such examples. Netflix beat Blockbuster, digital camera companies killed Polaroid, and Circuit City lost to Best Buy.

This is a common trend that old and established businesses lose to new market entrants. It is because many traditional stores prefer to stick with the strategies and actions they have been using for years and fear change or innovation.

This practice isn't good for anyone; neither marketers nor consumers. If there is no market competition, consumers would suffer the most.

Higher competition eliminates the monopoly. The more firms in the market, the more efforts would be needed for a business to make its place in the crowded market. They are motivated to innovate and offer value to consumers to stand out. It keeps them on toes

and they constantly put in their best efforts to stay ahead and stay relevant. Similarly, they are also inclined to offer better quality goods and services at reasonable prices.

Now, let's consider the example of social media in this scenario. It's best for everyone that the competition is increasing amongst social media companies. The more the competition, the higher will be the service quality at lower rates. So, whether you use the internet for personal networking or you are a business marketer, this competition will benefit you in the long run.

How Do We Benefit From Each Network?

Investing time and money in social media is no longer optional for business marketers. With your competition gaining customers and building a good reputation via social websites, you can't afford to miss out on this invaluable opportunity.

As marketers, your first step should be to get a website where you can display products, testimonials, and other relevant information. After that, you can gain several benefits from social accounts.

Regardless of which platform you choose, you can raise awareness via social posts as well as paid social media advertising. Your social posts should include a CTA that guides users about the next action. For instance, if you post a special discount for your social media followers, you ought to add the link to the online store where they can redeem it.

Customers tend to trust businesses that have a transparent system. Not only should you share detailed information about your business, but also share accurate pricing and terms and conditions. With this approach, you can earn their trust.

Many customers post reviews about their experiences with a brand. When a satisfied customer posts a positive comment, you should respond to them. However, it's equally important to respond to negative comments. When you take action quickly to solve their problems, your popularity and sales are likely to elevate.

What's Hot Right Now?

Being a marketer, you should be well-aware of current market trends. It will help you stay relevant and update your marketing strategy accordingly to reach your audience. On

the other hand, if you don't know which social media marketing channels are the most popular, you may lose customer attention before you know it.

With people confined to home due to COVID, the use of the internet, especially social media has significantly increased. A majority of people interact with their friends and families via social media. The use of digital media and social platforms for business purposes has also become the norm. So, you need to know which platforms are hot these days and which ones are losing popularity.

The trends for 2020 are out now and marketers can develop a strategy for 2021 based on these statistics. Here is a list of top social websites along with the number of active users on these sites.

- Facebook – 2,701 million
- YouTube – 2,000 million
- WhatsApp – Facebook – 2,000 million
- Facebook Messenger – 1,300 million
- WeChat – 1,206 million
- Instagram – 1,158 million
- TikTok – 689 million

If you don't currently use the aforementioned sites for marketing purposes, it's time to go through your social marketing strategy again and revise the strategy to adjust to these trends.

Let's Explore

Whether you are promoting a new business or working with a business that has been in the industry for a long time, you need an effective marketing strategy for social channels.

In social marketing, there are no rules and standards. You can't follow specific rules that guarantee to meet objectives. The best way to succeed in the social media world is to adopt the trial and error technique. You should come up with a plan to promote the brand and execute it on social channels of your choice. If it brings you the desired results, then it's great! But there is a good chance that social marketing efforts won't always prove effective.

Despite your efforts to boost awareness, gain customers, or generate leads, your social

strategy won't always work. This is why it's important to have a contingency plan. If the first plan doesn't get results, you should adjust it based on the performance metrics.

The good thing is that there are several options available for marketers. If Facebook doesn't work, you may turn to LinkedIn for the next campaign. You should set clear objectives, choose the right platform that meets your criteria, and measure performance after the execution of the social marketing plan for making your social marketing campaigns fruitful.

Further Reading

<https://sproutsocial.com/insights/social-media-marketing-strategy/>

<https://www.socialmediaexaminer.com/social-media-marketing-trends-2021-predictions-from-pros/>

Content Speaks

Social media and content go hand-in-hand. The purpose of creating social media websites was to provide users a platform where they can interact with each other and share information. Being a marketer, you can't ignore the value of content. Hence it goes without saying that you need a content marketing strategy for social platforms.

Many companies post content on social websites without a documented strategy to back their actions. A well-documented strategy and plan streamlines actions and guides you in the right direction. It helps you stay on track towards long-term and short-term goals and get heard.

To create an effective content strategy, ask yourself the following questions:

- What are my goals?
- Who should I post content for?
- Which platforms would work best?
- What type of content is preferred by my audience?
- How often should I post content?
- Which KPIs should I use for measuring performance?

Creating Your “Voice”

Brand voice is the distinct personality of your business that sets you apart from the competition. It creates an image or perception in customers' minds. If you promote a positive message through a captivating brand voice, then it won't be difficult for you to achieve social media marketing goals through your unique brand voice.

On social media, you can attract the audience through storytelling. Your stories should portray a consistent image to build credibility. For instance, if you are an optimistic person in real life, you notice the positive aspect of every event and don't linger in the negativity. Similarly, if you intend to portray your brand as adventurous, energetic, inspiring, or trustworthy, you should choose a tone that portrays this image and be consistent.

Customers consider the brand image of a business before they interact with them or

make buying decisions. If your brand voice is intimidating or you often post controversial content, then you may end up losing them to more stable and friendly competitors.

Where to Find the Right Content?

Creating fresh content takes time and effort. If you engage with your audience on multiple social websites, it won't be easy to generate unique content for every platform especially when you need to post content on a regular basis. Amidst the coronavirus outbreak, getting new ideas and creating unique content has become even more difficult. This is when content repurposing comes into the picture.

It's a good idea to look at content generated by other social media users. You can get to know about the latest trends and get ideas for your business. An example is that you can work on some DIY projects and record the procedure via a time-lapse video to engage the audience.

You may have created some evergreen content in the past. Go check your social profiles and locate posts that can be reused. For example, you may find images posted on Pinterest or Instagram from previous vacations. You can create blog posts about your experiences around those images and post them on your blog. However, when repurposing the content, make sure it goes well with your brand voice and the general language of the specific social website.

You should also consider creating content around the products your business offers. You can create whitepapers to share detailed information about the product or process. It's also a good idea to complement it with a how-to article or video to educate customers.

Content repurposing works great when you understand your weaknesses and strengthens. If you aren't good at talking in front of a camera, then creating videos for social media may not be your best bet. Stammering out of nervousness portrays a negative image. You should rather choose platforms that go well with your personality and can help you promote your entrepreneurial venture.

Now that the world is moving towards online business, e-conferencing has become a norm. You can conduct business meetings as well as events via Zoom or other digital platforms. You should consider recording such online events and posting them on social media.

How to Create the Right Content?

As a marketer, you can learn from social media trends popular among other business people. Event marketing has become quite popular these days where professionals meet and communicate with each other about topics of mutual interest. These events provide you an opportunity to create engaging content for your social media audience.

You should consider recording these events and posting them on social media for the followers. You can record videos via any device, but you may wonder whether it's better to share live and unprocessed videos or should you process them first before posting on social media. I would say both tactics can work in your favor.

In the case of live events, social media users expect to enjoy live coverage of the event. If you don't want them to miss those golden moments, you should live broadcast the event on your social media pages. Facebook Live feature comes in handy for this purpose.

Back in the day, it was believed that brands may suffer if they share unprocessed video content with the audience as they are less attractive to viewers. But this isn't the case anymore. People don't mind this approach because they are aware you may not always have professional equipment at hand when attending a business event. Moreover, people today are more interested in authentic brands. Overly processed content leads to question marks on authenticity, which is why live videos should be added to your social media content strategy.

It's also important to remember that posting live videos doesn't mean processed and professional quality videos aren't important. You can share the event live and process captured images and videos for later use. With this professional content, you can promote the brand, product, or event on an on-going basis. So, we can say that a combination of raw/live videos and processed videos works best for many businesses.

What Tools Do You Need?

Social media content creation may seem a difficult task but it's no rocket science. You don't need to invest a huge sum in buying equipment and tools to create the right content.

Many marketers avoid generating video content for social media because they don't own professional equipment. However, you don't need highly professional cameras to record videos. It's perfectly fine to use a smartphone camera, digital cam, or GoPro for capturing

events. But it's recommended to get a portable tripod to ensure captured videos are stable and clear.

In the indoor environment, you may need to arrange lighting equipment. However, outdoor events can save you from this trouble too. Also, don't forget to get a microphone to record audio along with the video content.

If you intend to share it live, you need not process it to enhance quality, but it's important to edit and process them for professionally posting them on LinkedIn and other platforms.

There are many video editing software available that you can learn to use. However, it is a complex process that is best left to professionals. To find qualified professionals, you should visit [Freelancer.com](https://www.freelancer.com) and [Upwork](https://www.upwork.com) websites. These are popular freelancing platforms where you can hire professionals on a project basis or an on-going as per your needs.

The Caption Game?

Posting images and videos on Instagram and other websites isn't enough; you should complement it with captivating captions to increase engagement. Its length can vary, but Insta supports captions of up to 2,200 words. The shorter the text, the more effective it will be.

For your persona profile, you may add a quote that comes to your mind. But business branding shouldn't be done this way. You should write a concise caption that represents the brand personality and resonates with your followers.

Writing long-form captions can work for brands as long as they aren't boring. If you want to adopt this method, always remember to mention important phrases or words at the beginning. This way, when the post is truncated, users will still be able to get the information at a glance.

Aside from the descriptive text, you should also add the most appropriate hashtags to increase visibility.

What's the Hashtag?

A hashtag is a combination of letters or numbers that represent a specific topic. It's helpful for users because it helps them organize content and view posts based on their interests or the latest trends. You can follow hashtags that attract you the most so as to easily access information about that topic.

These hashtags are widely used on TikTok, Instagram, Twitter, and many other popular websites. As a marketer, you should up your game and master the art of creating and using the right hashtags to better promote your brand and products online.

You can use an existing hashtag or create a new one around your business or business event. On TikTok, brands often create viral challenges and come up with suitable hashtags for these challenge videos. You can follow in their footsteps and create a challenge of your own to get customer attention.

You can brainstorm to come up with innovative hashtags for business marketing, but hashtag tools can simplify this task for you. It's recommended to explore Hashtagify, RiteTag, Trendsmap, and AutoHash to master the art of hashtagging.

Ask Your 8-Year-Old

Social media strategy gives the desired results when it's focused on the needs of target customers. So, brands that create content that attracts their followers tend to get more views and can maintain a good conversion rate.

The population on social media is constantly increasing and more and more youngsters are creating profiles on social media. Therefore, the best way to understand what kind of content these people need is to get the opinion of kids and teenagers.

These youngsters are well-equipped with modern technology and understand how to use almost any platform. They can guide you about the content that attracts this young generation and even give you unique ideas to make your content more engaging.

With the help of these insights, you can develop a plan to increase the engagement rate and convince the audience to take action.

Is that Wrong? The Ethical Question in Social Media

Remember when Adidas faced a backlash by tweeting the following message to participants who completed the Boston annual race in 2018, due to its reference to painful Boston bombings at the 2013 event?

“Congrats, you survived the Boston Marathon!”

Or when the skincare company, Nivea, posted a social media ad emphasizing that “White is Purity”?

Many businesses grab the headlines from time to time due to a simple mistake on social media or due to their inappropriate posts. It’s a growing concern among social media users and can bring negative publicity to businesses.

Before you post content on social media, make sure it’s free of profanities, culturally inappropriate language, racism, or other negative aspects that can cause controversy. You need to respect everyone regardless of their beliefs, ethnic background, financial status, or sexual orientation, and create content that doesn’t harm anyone’s feelings. With an ethical approach, you can effectively promote your brand and build a positive brand image.

Am I Famous Yet?

Social media marketing is a cost-efficient yet effective way to promote your products and reach out to the audience. A common mistake made by some marketers is that they post content and ads on social media for a few days and opt out of social marketing if the posts go unnoticed.

There is no doubt that social media websites have become the leading platforms for marketing purposes. However, it doesn’t mean that your brand will suddenly become popular in a few days.

Nowadays, a majority of businesses rely on social media marketing. Under such circumstances, you can’t expect to become the market leader within a week.

What you need to do is to be consistent with your effort. During the initial few weeks, your social marketing campaigns may not do that great. However, you should follow the marketing strategy without losing hope. Furthermore, monitoring the performance of the

campaign is also essential. It can guide you about what you are doing right and which areas of your social marketing need to be changed.

With this approach, your social marketing efforts will bring results in time and can become the customer choice through constant efforts.

Reading:

<https://buffer.com/resources/repurposing-content-guide/>

Time Management

Social media is a great tool for promoting your business without breaking the bank, but it can become a nuisance if you aren't careful. Working as a social media marketer can be a tough job if you constantly feel the urge to scroll the timeline every now and then.

Furthermore, social marketing tends to be a time-consuming task. Without an effective plan, you will end up wasting time and won't be able to achieve your goals.

A major reason why marketers fail to use social media to their advantage is that they try to be on every social network. This is neither possible nor a good idea. Regardless of whether you work on your own or have a social media team, it's important to choose social websites that fit your goal. This way, you can save precious time by putting your entire focus on social accounts that can increase website traffic and generate results.

Another challenge for social marketers is to stay focused on work when logging into social media accounts for job-related tasks. You may soon find yourself checking posts and messages from other users. The best strategy to tackle this issue and manage time is to set time limits for every task. For instance, if you need to post a tweet, you should specify the time needed for the task. With the deadline approaching, you will be motivated to prioritize work and avoid indulging in time-wasting activities.

When you are responsible to manage multiple social media accounts, it's not easy to keep track of the password for each account. You can neither write it down on a piece of paper due to security risks nor use the same password for every account.

The best way to avoid wasting time looking for passwords is to use password management software. These tools save credentials in a safe way and enable marketers to log in to different accounts without an issue. Moreover, when you need to check social media profiles via any other device, all you need to do is to access your password manager account and it will provide you access in no time.

Practice Safe Scheduling

Behind every successful job is plenty of planning. To succeed as a social marketer, you need to plan the actions you need to take for running marketing campaigns.

Your priority should be to get a content planning calendar for your business. You can easily find a template online or design a calendar that best fits your requirements. With the help of this tool, you can specify the content that needs to be posted across platforms.

In organizations, social media marketers usually plan content for a month in advance. You can make slight changes to this calendar on the go based on current events. You can decide the theme of the day or week and plan which type of content should be posted on different platforms throughout the month. This practice makes sure you can regularly post content for business promotion. If you work with a team of social media marketers, it will be easier to keep them in the loop.

When you track the performance of social media campaigns, you will get to know when the majority of your audience is online and can post content accordingly. But what if that time slot isn't during standard business hours and you can't log in at that particular time? This is when scheduling tools will save you from trouble.

SocialPilot, HootSuite, Post Planner, Feedly, and other similar tools can be used to schedule social media posts for a later date or time. You won't have to worry about forgetting to post content and the software will take care of this task.

That's Embarrassing: Don't Let Your Scheduled Post Land at the Wrong Party

Scheduling social media posts via software can make things easier for you and boost productivity. However, this method isn't fool-proof and can lead to embarrassing mistakes if you aren't cautious.

Some brands become the talk of the town in a negative way when they accidentally post content with unintentional profanities. Sephora once created a hashtag “#C**tdownToBeauty” when they actually wanted to use the hashtag #CountdownToBeauty. This mistake can happen when you schedule a post for later without proofreading it. It's ideal to update settings for filtering out unethical phrases and words.

US Airways and a few other businesses caused controversy in the past when they accidentally attached highly explicit images or links to pornographic websites. These mistakes can happen due to minor carelessness, but can attract significant negative publicity which isn't good.

You don't want to fall victim to such craziness. So, it's best to carefully check and recheck the post before you schedule it for later.

When you manage content for multiple social platforms or working as a social media marketer for multiple businesses, there is a higher risk of making mistakes. For instance, you may want to schedule a post via software for Twitter, but accidentally do so for another website. While this mistake may not appear insignificant, it can promote a negative image of your business.

Lastly, it's a good idea to create social media posts for prominent occasions, events, and festivals, but make sure you schedule it for the right time and date. What if you create an Instagram post for Halloween, but due to the scheduling mistake, it gets posted a day or two after the holiday? You may become the laughing stock for the audience.

If This, Then That? Social Media Automation

If-then concept is a basic principle of computer programming where you specify the system to check for the defined condition and execute the specific block of code only if it meets the condition. IFTTT platform was developed with the intention to provide similar functionality to social media marketers.

This platform allows marketers to create applets for automated content. You can create posts for suitable social websites and specify the trigger point. When the specified action is triggered, the post applet will be published.

However, using the IFTTT model may not be your best bet when it comes to comments. Some businesses use bots to post automated comments. These comments don't only seem fake, but they also portray a negative image of the company.

Alternatively, it can be used to improve customer service. For instance, you can use this model with a messaging app to facilitate customers. You can specify answers to most common queries that are frequently asked.

For example, when a customer enquires you about your working hours or the prices of your products, they can receive an automated answer to their query. This practice saves time and provides answers to customers without unnecessary delays.

Although automation can make your job easier to some extent, it never works for marketers to create a post and then forget about it. As a result, it may get published at an inappropriate time and seem irrelevant. You should go through the scheduled content from time to time and tweak posts if needed.

Analyze That

If this then that is a valuable automation tool. Not only does it enable you to automate social media posts for business promotion purposes, but you can also use it for personal reasons. For instance, you can use this tool to wish colleagues on their birthdays or work anniversaries.

However, this functionality should be used carefully. This tool posts the same content every time an event takes place. In certain cases, this may get out of hand.

When an existing or potential customer messages a brand, they often receive an automated message where they are addressed with their first name. This may cause an embarrassing situation for businesses in some cases. A few years ago, a brand used this function on Twitter where they were addressed with their user name. But the user had previously changed their profile name with a profane and the tweet made the brand look bad to other users.

Such events aren't common and don't happen too often. But they can lead to an embarrassing situation for your business and may deter the customer base. So, before you opt for the IFTTT model, you should evaluate your decision and come up with suitable content that is less likely to lead to controversy.

Reading:

<https://www.cincopa.com/blog/the-ultimate-guide-to-scheduling-video-posts-on-social-media/>

<https://blog.oneupapp.io/social-media-scheduling-tools/>

We're Engaged! Aren't We?

When you create business profiles on social media, you may aim to increase the number of followers through content marketing. Increasing your follower base is certainly important for your brand, but you should also focus on increasing engagement for long-term benefits.

Social media engagement refers to likes, comments, and shares on posts by other social media users. Not all of your followers are active and many of them may forget about you after liking your page on Facebook or following you on Instagram. In this sense, engagement is far more impactful since it indicates that your followers not only see your posts, but also interact with you one way or another.

The phrase *out of sight, out of mind* is certainly true and is applicable in the scenario of business marketing. With the internet making it easier to reach a global audience and promote and sell products without hassles, more and more businesses are entering the market and leading to increased competition. If your content reaches them and captures their attention, they would stay with you provided that your products and customer service meet their needs. But it won't take long for them to switch to your competitor brands if you ghost them and your content stops reaching their social media timeline.

If they often interact with your brand, the social media algorithm would show them your content on priority and ensure that they remember you. Therefore, not only should you create engaging content, but also monitor the engagement rate.

There are many different tools available that can help you keep track of customer engagement on social media including Twitter Counter, Buzzlogix, Zoho Social, and Agorapulse that can help you monitor the engagement rate as well as brand reputation across social platforms.

What If They Don't Talk Back?

Customer engagement is a key concern for brands. The more customers interact with social media posts, the more impact your business makes in the market. This is a good sign

because engagement is the driving force of ROI and makes the business profitable down the road.

However, even though business marketers try their best to attract the target audience and encourage them to like or comment on their posts, they are not always able to achieve this goal. This situation is troublesome and can make you wonder why your entire efforts are going in vain.

To get the answer, you should first analyze your current social media strategy. It's possible that your content is of low-quality or doesn't interest your audience. It's also a possibility that your choice of social website isn't right. With this detailed analysis, you may find out potential issues with your strategy and revise it to address those issues.

However, it should also be noted that defective strategy isn't always the cause of low engagement. You may need to develop more interesting content to capture the attention. It may be a good idea to hold live Q&A sessions.

Customers are no longer interested in listening to faceless brands. They rather find the human side of brands more attractive and engage with them on social media. By introducing them to your team and interacting with them via live sessions, you can win their trust and increase engagement.

Customer-generated content can also help you in this regard. You shouldn't only create and share your own content, but also retweet, or like, or share relevant posts by followers. For instance, if you find an interesting post of your followers discussing the niche or topic related to your business, you should consider sharing it with your follower base.

Influencer marketing can also be a good option. You can get in touch with social media influencers who have built a community of followers and ask them to promote your brand. When they endorse your business, their followers will visit your social profile and may engage with the content if they find it interesting.

Should I Still Use Email?

Some people claim that email is a feature of the past and has lost its importance over time. However, digital marketers are well-aware this statement is far from the truth. Despite the popularity of other online marketing methods, email promotions are still extremely effective.

Most consumers check their emails on a daily basis which is why there is no better way for marketers to share information about their market offerings and latest product

launches. You can send newsletters to customers and leads and invite them to read the latest blog posts, visit your social media, and learn about what's new.

Email is relevant in the era of social media because it is a helpful tool for increasing website traffic and generating or capturing qualified leads. You can also curate content and send customized information to customer groups as per their interests. This targeted information can help in building strong relationships and entice customers to interact with you.

Once they are directed to your website to get more information, there is a good chance they will go through the list of products you sell and purchase them soon.

What If They're Upset

Businesses that value their customers work extra hard to provide them an unprecedented and memorable experience. However, they may not be able to achieve this goal every time. Despite your best efforts, some customers may still be unhappy and dissatisfied.

Unhappy customers often post negative reviews about brands on social media pages or Facebook groups. If you notice such a review, you should get ready to resolve the situation instead of losing your cool.

You should calmly listen to customers and apologize for the mistake. If it was a genuine problem, then you should empathize and assure them that the management would look into the matter and resolve the problem at the earliest. You can also send them a gift or discount voucher to make up for their bad experience.

Some customers may accept your apology and let it go, but some customers get too angry and they don't listen to social media managers. They may continue posting negative reviews about your business and hurt your brand reputation.

In this scenario, the best strategy is to use tracking tools like Mention that keep you updated about discussions and reviews about your business. With this real-time information, you can tackle the situation and spread positive messages about your brand to prevent them from further hurting your business.

Don't Feed the Trolls

Some angry customers post negative reviews because they genuinely faced a bad experience with your company. But remember that some social media users deliberately post provocative content against other users and businesses out of habit.

They poke fun at others and humiliate them with derogatory content. Interacting with such trolls and responding to their comments can further ignite the situation. So, you need to tactfully handle the situation.

First of all, write terms and policies for your community where followers are expected to be respectful of others and refrain from using offensive language. You can politely ask trolls to be mindful in the light of community policies. You can respond to fake posts regarding your business with facts or ignore them. You can also come up with witty responses to diffuse the situation.

However, social media trolls don't go away easily and they may keep trying to instigate you. Don't get into the trap and stay calm and respectful to protect your brand image.

Do the Hokey Pokey: Turn Complaints into Gold

Brands that often receive negative comments and reviews tend to lose customers and damage the reputation. But customer complaints and negative comments aren't as bad as they are perceived.

These posts give you a chance to identify and recognize your mistakes. Your business processes or products may be harmful in some manner or fail to meet the needs of customers. Instead of treating these comments as trash and ignoring them, you should treat them as feedback and make the most of this constructive feedback to enhance service quality.

If a customer points out that the behavior of the staff wasn't good, you should pay attention to them. Offering excuses won't do good as it gives the impression that you don't consider customer complaints important. You can rather arrange training sessions for team members to help them boost their skillset and improve service quality.

You should encourage customers and social media followers to offer suggestions for further improving your business processes. Also, once you implement a customer suggestion, you should post it on social media and appreciate customer feedback.

Do You Even Care?

Customer service is a challenging job. You need to listen to customer complaints and suggestions, and bear their anger while taking the blame for intentional or unintentional mistakes.

No matter what type of business you manage, effective customer service is the key to success. You should always prioritize customers and work hard to add value to them. Similarly, listening to and addressing customer issues is equally important for a business.

Customers are now aware of their rights and they don't want to do anything with businesses that ignore them. To become an effective business leader or social media marketer, you ought to care about your customers. You don't want to receive negative reviews due to the negligence of your team. You should develop a culture within the organization where staff members consider it their first and foremost responsibility to take care of customers and leave no stone unturned in achieving customer satisfaction.

This approach strengthens relationships with customers and creates a lasting bond.

Reading:

<https://www.omnikick.com/customer-engagement-strategies/>

Social Media Jobs. Why Understanding Basic Marketing Principles Will Put You Ahead of the Rest

It's a prevalent myth that social media management is all about mastering different social media websites. The better you are with using the latest technology and creating and posting content across social accounts, the more successful you will be along the journey.

However, social media management is more about marketing than using social accounts. Therefore, you ought to grasp basic marketing principles. If you understand basic marketing concepts, you can stand out and do well as compared to other candidates.

The evolution of technology has offered a variety of platforms to marketers, but marketing principles stay almost the same. If you know marketing, you can apply these principles to promote a brand online and generate results.

The Intern Always Gets Blamed

At the beginning of your professional journey, you may need to work as an intern to get experience, increase knowledge, and learn useful skills alongside experienced professionals.

The internship is a rewarding yet challenging job. You get the opportunity to gain plenty of useful information, but the tasks can be never-ending. Moreover, if anything goes wrong, there is a good chance you will be blamed for the mistake as the junior-most staff member in the organization.

It's a part of the learning journey. You need to be headstrong and accept feedback without getting angry. This knowledge will help you when you start working as a regular social media management employee and can use this learning to your advantage.

How Boring is Your Resume?

When you apply for a job, the resume is your first introduction to potential employers. They decide whether or not it's a good idea to interview you for the job based on this professional document. If it's too boring, lacks information, and doesn't highlight the information they are looking for, you can already say goodbye to that internship opportunity you have been dreaming of.

Recruiters evaluate your skills, personality, strengths, and qualifications with the help of your resume. So, you can't ignore the importance of this document. If you have got rejected by recruiters or afraid that recruiters may not consider your application, then it's a good idea to update and redesign your resume.

It's best to invest in an attractive resume design that highlights your skills, qualifications, experience, and personal strengths. At the beginning of the career, you may benefit from a chronological order resume or design a custom theme that fits the specifications of organizations where you want to apply for a social media marketing vacancy.

Since recruiters get a huge number of candidate resumes, you can get more visibility and an edge over other candidates with the help of an attractive document format. Before finalizing it, make sure you proofread the document for potential errors and spice it up with attractive designs to increase your chance of getting hired.

Is LinkedIn Still a Thing?

Launched in 2003 as a social network for professionals, LinkedIn has been going strong since its inception. It is one of the best websites to set up your professional profile and interact with professional experts from different fields.

LinkedIn facilitates you to share thoughts and knowledge with other users on the platform who might be interested in the insights you share. You can also have one-on-one chats with people via its secure private message service.

Since LinkedIn is getting old, it is rumored that this platform is losing its charm. However, it's an evergreen platform that is extremely useful in this era of technology.

Many recruiters prefer to invite and hire candidates via LinkedIn. It's because they can evaluate the person to some extent before the interview with the help of their profile

and the content they share. In fact, many recruiters conduct short interviews through LinkedIn to save time and make the recruitment process much simpler.

So, it's recommended for business professionals, especially marketers to create LinkedIn profiles. If you stay active and regularly post relevant and informative content, you can build relationships and get job offers with ease.

Going Solo

Working as a social media marketer with an expert team of professionals can offer you learning opportunities. You can get useful tips those team members learned through years of experience. They can also guide you about enhancing your skills and the right path for progressing in the industry.

However, taking up a full-time job isn't for everyone. You may have dreams of making your name as an established social media marketer and this dream can come true only by working solo and launching your entrepreneurial career.

You may want to become a freelancer and gradually set up your social media marketing agency once you build a network of business connections and clients.

Before starting your agency, you ought to develop a business plan that covers necessary information about the business such as potential customers, vendors, business strategy, financial resources to execute plans, and your team that can work hard for the future of the organization. You may want to invest in a professional website to build authenticity and credibility.

Building Your Portfolio

Whether you plan to take up a job as a social media marketer or aim to launch your social media agency, you need a portfolio. A portfolio is a set of previous work that demonstrates your skills.

When you send your resume to a potential employer, they would ask for your portfolio to determine how good you are at what you do. Similarly, this portfolio will prove helpful when you reach clients and offer your social media management services for their business or professional needs.

As a beginner at social media marketing, you may struggle to get your first job or assignment. You can create social media profiles for your freelancing journey. By managing these accounts the right way, you can show clients and recruiters that you are good at the job.

Furthermore, you can also present detailed insights into the performance of social media campaigns you may carry out to promote your personal brand.

YOLO

Social media marketing is the need of the hour. Not only does it help individuals stay connected, it also adds value to businesses with low cost and effective marketing methods.

Traditional marketing is still relevant, but digital marketing in general and social media marketing, in particular, is extremely helpful for entrepreneurs. It can be an invaluable asset for lead generation, raising brand awareness, engaging existing customers, and acquiring new customers at relatively lower rates.

However, social websites such as Facebook, LinkedIn, Twitter, and other platforms can be tricky. Not every marketer is able to get the desired results via social media marketing despite their familiarity with social media websites. This is because they ignore the basic principles of marketing, especially the marketing mix or 4 P's principle.

Social marketing works on the basis of these fundamental marketing principles and you need to rethink these concepts in the context of digital media to achieve your marketing goals.

The key to surviving in the digital world is to understand the needs and wants of your customers. When you know which platforms are most commonly used by your target audience, then you can stay active on those websites to increase your reach.

It's also essential to monitor the activities of your competitors. This practice helps you learn about the latest industry trends, identify your mistakes, and learn from those that have working in the marketing industry for quite a long time. You can update your social marketing strategy accordingly for better results.

Despite these tactics, your business may suffer if you blindly follow in the footsteps of the competition. You should rather develop an effective strategy that suits your particular needs.

For this purpose, you should first define your goals for social marketing campaigns and specify your target audience. The next step is to identify where these customers are mostly present and then create social media accounts on those websites. It's important to remember that you cannot and should not try to run marketing campaigns on every social media website or this approach will only backfire.

The next step is to develop a content strategy for these websites. You should know what kind of content is popular on each website so you can post it when most of your target

audience is online. You don't need to create fresh content for every website and can rather repurpose and reuse it to avoid wasting time.

Moreover, there are many tools or software available that can assist you in creating unique content and repurposing the existing information. You can use these tools to maintain a content calendar and schedule social media posts so they reach your target customers at the right time.

Social marketing efforts produce results when you stay up-to-date with performance. Social media built-in tools as well as external performance measurement software can give you detailed information about the performance of marketing campaigns. You can find out which activities are performing as per expectations and which tactics need to be revised. With the help of this information, you can update and revise the social media strategy for improved performance.

This book is the first step in the right direction and provides you with guidelines for prospering as a social media marketer. However, you can learn best by implementing these principles and activities on your own. Hands-on experience further clarifies concepts, gives you a better understanding of digital and social media marketing, and helps you get down to the nitty-gritty of modern marketing strategies.

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